

**A RESOLUTION OF THE STATE ROUTE 4 BYPASS AUTHORITY
CERTIFYING THE STATE ROUTE 4 BYPASS PROJECT FINAL EIR
APPROVING THE PROJECT AND THE MITIGATION MONITORING
AND REPORTING PROGRAM
AND ADOPTING FINDINGS OF FACT AND A STATEMENT OF
OVERRIDING CONSIDERATIONS**

DECEMBER 13, 1994

WHEREAS, the general policy of the General Plans of Contra Costa County, the City of Antioch, and the City of Brentwood provides that a facilities plan shall be prepared to assure adequate funding for essential public services and facilities for areas which need facilities which are not normally funded by regular County or City fees and cannot logically or economically be provided by one landowner in the normal sequence of orderly development; and

WHEREAS, the Contra Costa County General Plan adopted in January, 1991, identifies the State Route 4 Bypass (formerly known as the Delta Expressway) as part of the Circulation Element needed to accommodate travel demand that would result from the assumed year 2005 buildout of the land use plan that was developed; and

WHEREAS, the Antioch General Plan adopted in December, 1988, identifies the State Route 4 Bypass Project (formerly known as the Delta Expressway) as part of the roadway improvements needed to implement the Circulation Plan; and

WHEREAS, the Brentwood General Plan adopted on June 8, 1993, identifies the State Route 4 Bypass Project (formerly known as the Delta Expressway) as a key feature of its Circulation Plan; and

WHEREAS, the State Route 4 Bypass Project (the "Project") was prepared to implement these policies and to provide for an appropriate level of public facilities and services to newly developed areas within the eastern portion of Contra Costa County and the City of Antioch and the City of Brentwood; and

WHEREAS, a Draft EIR for the Project was prepared and circulated for review November, 1993, with the comment period closing January 3, 1994; and

WHEREAS, on May 12, 1994, the State Route 4 Bypass Authority (the "Authority") expressed its intent relating to Volume II (dated October 1993) of the EIR, to wit: Volume II depicts a corridor concept that has been raised by independent parties. The Corridor extends beyond the limits of the Project and represents an alternative that has not been addressed in the EIR. The Project analyzed by this EIR does not include the corridor and corridor information is provided by way of related information only. Volume II of the EIR is not being considered for certification nor will it be certified, nor is the concept addressed in that volume going to be considered certified or approved; and

WHEREAS, a Final EIR, including response to comments, was prepared in November, 1994, and was provided to those agencies and interested parties who commented; and

WHEREAS, on November 21, 1994 and on December 8, 1994 the Authority held public hearings on the Project and the supporting Environmental documents; and

WHEREAS, the Final EIR consists of comments and recommendations received on the Draft EIR, a list of persons, organizations, and public agencies commenting on the Draft EIR, the responses to significant environmental points raised during the review period, addenda to the Final EIR and other information and documents concerning the impacts of adopting the Project and associated General Plan Amendments; and

WHEREAS, the Authority has determined that the Marsh Creek Road is a two lane road and the Project proposes to widen the shoulders and install other safety improvements that are compatible with the agricultural nature of the area and that it has concerns for future improvements on the road; and

WHEREAS, The Authority expressed its intent that it will not initiate acceptance with the State as a State Route nor will it seek to improve Marsh Creek Road beyond the Project unless future studies are undertaken that determine the feasibility of an additional east-west connector; and

WHEREAS, to the extent that Marsh Creek Road is adversely impacted by subsequent improvements, the Authority agrees to review and mitigate those impacts as required pursuant to appropriate environmental analysis; and

WHEREAS, the Authority has particular concern for the continued agricultural use on the severed Lindsay and Patricia Nunn parcels and it expressed its desire that staff work carefully with those property owners in acquiring rights of way and that mitigation may include relocation of those operations if required; and

WHEREAS, the Authority has carefully reviewed the staff report, the Final EIR, addenda, errata and exhibits, the Proposed Findings of Fact and Statement of Overriding Considerations and the Mitigation Monitoring and Reporting Program, and has determined that these documents support its direction to staff and determinations on the adoption of the Project; and

NOW, THEREFORE BE IT RESOLVED, that the Authority certifies the following:

1. the Final EIR has been completed in compliance with CEQA and the State CEQA Guidelines; and
2. the Final EIR has been presented to the Authority and the Authority has reviewed and considered the information contained in the Final EIR prior to approving the Project and the General Plan Amendments; and
3. the EIR reflects the independent judgement of the Authority; and

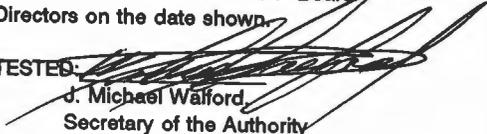
BE IT FURTHER RESOLVED, the Authority hereby Approves the Project, utilizing the westerly Nunn Mitigated Alignment and including Marsh Creek Road as the east-west connector, adopts the Findings of Facts, Exhibits A and Exhibit B, and Statement of Overriding Considerations Exhibit C of this Resolution and as modified by the new mitigation measures and modified language in the Findings of Fact adopted by the Authority, approves the Mitigation Monitoring and Reporting Program, and directs staff to file a Notice of Determination with the County Clerk and to arrange payment of the \$850 Fish and Game fee and the \$25 filing fee; and

BE IT FURTHER RESOLVED, the Authority will undertake efforts and initiate further studies to determine the feasibility of an additional east-west connector and will not initiate acceptance of the Marsh Creek Road improvements by Caltrans or initiate improvements beyond the Project scope until those studies are completed.

ADOPTED the 13th day of December 1994 by the following vote:
Ayes: Torlakson, Keller, Guise Noes: None

I hereby certify that this is a true
and correct copy of an action taken and
entered on the minutes of the Board
of Directors on the date shown.

ATTESTED:


J. Michael Walford
Secretary of the Authority

m\sr4bordr.t12

CALIFORNIA ENVIRONMENTAL QUALITY ACT NOTICE OF DETERMINATION

FILED

STATE ROUTE 4 BYPASS AUTHORITY

255 Glacier Drive
Telephone: (510)313-2382

Martinez, California 94553-0095
Contract Person: Lowell Tunison

S.L. WEIR, COUNTY CLERK
CONTRA COSTA COUNTY

Project Description, Common Name (if any) and Location:

BY K. GORDON Deputy

STATE ROUTE 4 BYPASS PROJECT (Delta Expressway): #CP88-72 SCH#89032824. The project consists of a 9.3 mile limited access highway, which begins at the junction of State Routes 4 and 160 in Antioch, and extends to the junction of Walnut Boulevard and the relocated Vasco Road, south of the City of Brentwood. It also includes the upgrade of Marsh Creek Road as the connector between the Bypass and State Route 4.

The project was approved on December 13, 1994
Pursuant to the provisions of the California Environmental Quality Act:

- An Environmental Impact Report was prepared and certified.
- The Project was encompassed by an Environmental Impact Report previously prepared for _____
- A Negative Declaration was issued indicating that preparation of an Environmental Impact Report was not required.

Copies of the record of project approval and the Negative Declaration or the final EIR may be examined at the office of the Contra Costa County Public Works Department, 255 Glacier Drive, Martinez, CA. 94553

The Project will not have a significant environmental effect.

The Project will have a significant environmental effect.

- Mitigation measures were made a condition of approval of the project.
- A statement of overriding considerations was adopted.
- Findings were adopted pursuant to Section 15091 of the State CEQA Guidelines.

Date: December 15, 1994 By: Lowell Tunison
Staff to the Authority

AFFIDAVIT OF FILING AND POSTING

I declare that on DEC 15 1994 I received and posted this notice as required by California Public Resources Code Section 21152(c). Said notice will remain posted for 30 days from the filing date.

K. GORDON DEPUTY COUNTY CLERK
Signature Title

Department of Fish & Game Fees Due:

- EIR - \$850
- Neg. Dec. - \$1,250
- De Minimis Findings - \$0
- County Clerk - \$25

Total Due: \$ _____
Total Paid: \$ _____
Receipt #: _____

**CALIFORNIA ENVIRONMENTAL QUALITY ACT
NOTICE OF DETERMINATION**

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S.L. WEBB COUNTY CLERK
 CONTRA COSTA COUNTY
 BY *[Signature]*
 K. GORDON DEPUTY

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NOTICE OF DETERMINATION

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STATE ROUTE 4 BYPASS AUTHORITY

255 Glacier Drive
Telephone: (510)313-2382

Martinez, California 94553-0095
Contract Person: Lowell Tunison

S.L. WEIR, COUNTY CLERK
CONTRA COSTA COUNTY

BY: K. GORDON DEPUTY

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K. GORDON
Signature

DEPUTY COUNTY CLERK
Title

Department of Fish & Game Fees Due:

- EIR - \$850
- Neg. Dec. - \$1,250
- De Minimis Findings - \$0
- County Clerk - \$25

Total Due: \$ 875.00
Total Paid: \$ 875.00
Receipt #: 25435

ENVIRONMENTAL IMPACT REPORT

STATE ROUTE 4 BYPASS PROJECT



EXHIBIT A: FINDINGS OF FACT

**EXHIBIT B: FINDINGS CONCERNING REJECTION OF
PROJECT ALTERNATIVES**

EXHIBIT C: STATEMENT OF OVERRIDING CONSIDERATIONS

STATE ROUTE 4 BYPASS AUTHORITY

DECEMBER 13, 1994

TABLE OF CONTENTS

EXHIBIT A: FINDINGS OF FACT

Section A.	Introduction and Project Description
Section B.	Boundary of the Project Area
Section C.	The Record
Section D.	Discretionary Actions
Section E.	The Program EIR: the Draft, the Proposed Final and the Final EIR
Section F.	Terminology of Findings
Section G.	Legal Effect of Findings
Section H.	Monitoring Program
Section I.	Short-Term uses vs. Long-Term Productivity
Section J.	Irreversible Changes
Section K.	Growth Inducement
Section L.	Cumulative Impact
Section M.	Findings on Significant Effects and Mitigation Measures

EXHIBIT B: FINDINGS CONCERNING REJECTION OF PROJECT ALTERNATIVES

EXHIBIT C: STATEMENT OF OVERRIDING CONSIDERATIONS

Section A.	General Introduction
Section B.	Specific Findings
Section C.	Overriding Considerations
Section D.	Conclusion

ENVIRONMENTAL IMPACT REPORT
STATE ROUTE 4 BYPASS PROJECT



EXHIBIT A: FINDINGS OF FACT

STATE ROUTE 4 BYPASS AUTHORITY

DECEMBER 13, 1994

EXHIBIT A: FINDINGS OF FACT

SECTION A: INTRODUCTION AND PROJECT DESCRIPTION

The California Environmental Quality Act ("CEQA"), Public Resources Code sections 21000, *et seq.* states that a project shall not be approved if it would result in a significant environmental impact or, if feasible mitigation measures or feasible alternatives can avoid or substantially lessen the impact. Only when there are specific economic, social, or other considerations which make it infeasible to substantially lessen or avoid an impact can a project with significant impacts be approved.

Therefore, when an environmental impact report ("EIR") has been completed which identifies one or more potentially significant environmental impacts, the approving agency must make one or more of the following findings for each identified significant impact:

1. Changes or alternatives which avoid or substantially lessen the significant environmental effects as identified in the FEIR have been required or incorporated into the project, or
2. Such changes or alternatives are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency, or
3. Specific economic, social or other considerations make infeasible the mitigation measures or project alternatives identified in the FEIR. (Public Resources Code section 21081.)

The proposed State Route 4 Bypass Project ("Project") identifies a precise alignment for implementation of an expressway and a connector between the Bypass and State Route 4. Marsh Creek Road would be upgraded to provide a connector between the Bypass and State Route 4. The environmental analysis for the project evaluates the potential for significant environmental impacts resulting from construction and operation of an expressway within a 250 foot right-of-way and a connector within a 110 foot right-of-way, and identifies mitigation measures to avoid or reduce potentially significant impacts.

The project would be constructed in two phases. Phase I would consist of a two-lane limited access expressway from SR4/160 to Walnut Boulevard, with a partial interchange at SR4/160. At grade intersections would be provided at approximately one mile increments: Laurel Road, Lone Tree Way, Sand Creek Road, Balfour Road, Marsh Creek Road, and Walnut Boulevard. In addition, Marsh Creek Road would be upgraded to state highway standards and function as an east-west connector between the project and SR4. The upgrades to Marsh Creek Road would consist of widening the existing shoulders and installing signalized intersections with

protected turning movements at Walnut Boulevard, Sellers Avenue, and SR4. Marsh Creek Road would remain a two lane road as proposed with this project.

Phase II would consist of expanding the Project to four lanes from SR4/160 to Balfour Road. The Project would remain two lanes from Balfour to Vasco Road. The partial interchange at SR4/160 would be expanded to a full interchange, and the at-grade signalized intersections and Laurel Road and Lone Tree Way would be up-graded to grade separated interchanges. The four intersections south of Lone Tree Way would remain at-grade signalized intersections. However, the ultimate road configuration and interchanges should be considered during the alternative analysis since the alignment for Phase I of the project that is chosen will determine the location for the ultimate improvements.

The alignment for the Bypass project was determined based on the following objectives:

- Avoid: Relocation of existing residents
Existing permanent land uses
Agricultural Core land if economically feasible alternatives exist
Severance of land parcels.

- Protect: Archeological Sites
Habitats of protected and endangered species
Wetland areas under the jurisdiction of the United States Army Corp of Engineers

- Coordinate: With Contra Costa Water District Los Vaqueros Pipeline

- Minimize: Cost

These objectives were utilized as a guideline in order to achieve balances between all of the sensitive issues and constraints. Several other factors also governed the alignments. These include: minimizing the loss of riparian habitat along Marsh Creek; a revised alignment of Marsh Creek Road to eliminate the sharp curve; and sufficient space between the interchange and the John Marsh home. The latter allows for minimizing the Project's effect on the historical property while at the same time not precluding room for a future north/south arterial on the west side of the Bypass which could serve the area that is within the urban limit line.

The existing State Route 4 is an at-grade limited-capacity highway with direct access to the roadway from adjacent schools, shopping centers, and residences. Under this existing situation, regional traffic (particularly truck traffic) is mixed with local traffic. Because of low speeds on local roads and heavy cross traffic, lane capacity on State Route 4 is limited and opportunities to improve capacity are limited due to the proximity of existing adjacent land uses. Major disruptions or relocations could result if SR 4 were improve, and the increase to capacity would not be adequate to serve both local and regional traffic.

Existing travel patterns south from Antioch use State Rout 4, a two-to-four lane undivided road through the communities of Oakley and Brentwood. Some traffic uses Hillcrest Avenue, Lone Tree Way, and Sandcreek Road to bypass Oakley and Brentwood traveling south. Traffic moves south of Brentwood along Walnut Boulevard to Vasco Road to I-580 and east along SR4 to Stockton. The Vasco Road to I-580 connection will be modified through the realignment of a portion of Vasco Road to the County line as the result of the proposed Los vaqueros Reservoir Project.

Because of the traffic-related disruption in the communities of Antioch, Oakley, and Brentwood, (particularly from increased truck traffic); the increasing traffic volumes and congestion along State Route 4 (with no opportunity to add capacity), and the limited financing available, the State Route 4 Bypass project focuses on the northern potion of the East County Corridor, where the congestion is most apparent.

The purpose of the Project is to provide a new route for SR4 that bypasses the communities of Antioch, Oakley, and Brentwood to alleviate traffic-related noise and congestion on local streets, pursuant to the adopted General Plans for Antioch, Brentwood, and Contra Costa County, and Caltrans adopted Route Concept Report for State Route 4. The purpose in establishing the Project right-of-way is to protect the area for short-term and long-term transportation use.

SECTION B: BOUNDARY OF THE PROJECT AREA

The proposed project is located in Eastern Contra Costa County near the Cities of Antioch, Oakley, Brentwood, and Byron. It would begin at the existing State Route 4 (SR4/160) and eastern Antioch and extend south approximately 9.3 miles to connect with the relocated VASCO Road at Walnut Boulevard. Its north/south alignment would be the same as the northern portion of the East County Corridor program. The Bypass would cross Sand Creek, Deer Creek, Marsh Creek, and Dry Creek; and intersect with Laurel Road, Lone Tree Way, Sand Creek Road, Balfour Road, Marsh Creek Road, and Walnut Boulevard/Vasco Road (relocated).

During the public comment testimony, three of the alternatives were revised to avoid crossing the sensitive wetlands in the tributary to Kellogg Creek, south of Marsh Creek Road. The revised alternatives are called "Cowell Mitigated," "Nunn Mitigated," and "Project Mitigated" alternatives. With adoption of one of these revised alignments, the three alternatives avoid the sensitive wetland.

SECTION C: THE RECORD

For the purposes of CEQA and the findings hereinafter set forth, the Record for the Project consists of the following:

(a) All non-privileged relevant staff reports, memoranda, maps, minutes and other planning documents prepared by the State Route 4 Bypass Authority ("Authority") staff and consultants relating to the State Route 4 Bypass Project ("Project") and which are available to the public in accordance with the California Public Records Act;

(b) The initial study prepared for the Project, all CEQA documents prepared for the Project, and all documents on which the CEQA documents rely by reference, and Responses to the Comments-FEIR, which documents collectively represent part of the FEIR for the Project;

(c) All written comments, responses and testimony concerning the CEQA documents received by the Authority from public agencies, adjacent property owners, other property owners and interested members of the public concerning the Project, up to and during the Authority's public hearing on December 8, 1994, and written Comments and Responses from the Authority.

(d) Testimony received by the Authority at its noticed public hearing, to receive comments on the Project and the FEIR;

(e) Documents submitted in association with the Project, describing the Project and/or related proposed urban development projects and supporting or augmenting the environmental documents prepared pursuant to CEQA for the Project and/or related proposed urban development projects.

(f) Any documents embodying the Authority's action on the Project including staff reports and resolutions and the minutes of public hearings, meetings, and workshops on the Project;

(g) These Findings and Statement of Overriding Considerations adopted in connection with the Project;

(h) All other information including documents or testimony submitted to the Authority supporting or augmenting the environmental documents prepared pursuant to CEQA including, but not limited to, the general plans of the Cities of Antioch, Brentwood, and Contra Costa County, the Contra Costa County Transportation Authority's: 1) Draft 1993 Contra Costa Congestion Management Program, and 2) Draft 1994 Countywide Comprehensive Transportation Plan..

SECTION D: DISCRETIONARY ACTIONS

The discretionary actions for the proposed Project involve the following approvals by the Authority.

1. Adoption of the Project with the CEQA mitigation measures adopted by the Authority.

These Findings are made by the Authority pursuant to Section 15091 of the California Code of Regulations, Title 14 (also referred to as the "CEQA Guidelines"). The Authority is also adopting a "Statement of Overriding Considerations" pursuant to section 15093 of the CEQA Guidelines. The Authority finds that where more than one reason exists for any finding, the Authority finds that each reason independently supports these findings.

SECTION E: THE DRAFT EIRS AND FINAL EIR

Pursuant to section 15146(a) of the CEQA Guidelines, the DEIR for the Project summarizes with specificity the effects of a series of actions the Authority will need to undertake to implement the Project.

Where possible the FEIR also incorporated within the impact analysis the responses to comments received on the previous DEIR. The information in the FEIR replaced and superseded the DEIR and was the basis for the environmental analysis of the Project. According to CEQA Guidelines section 15132:

The Final EIR ("FEIR") shall consist of:

- (a) The Draft EIR or a revision of the Draft;
- (b) Comments and recommendations received on the Draft EIR, either verbatim or summary.
- (c) A list of persons, organizations, and public agencies commenting on the Draft EIR.
- (d) The response of the lead agency to significant environmental points raised in the review and circulation process.
- (e) Any other information added by the lead agency.

The FEIR for the Project fulfills all the necessary requirements of CEQA and the Guidelines issued thereunder. Pursuant to CEQA, the FEIR includes mitigation measures for each potentially significant environmental impact and a mitigation monitoring program.

SECTION F: TERMINOLOGY OF FINDINGS

Section 15091 of the CEQA Guidelines requires that, for each significant environmental effect identified in an EIR for a proposed project, the approving agency must issue a written finding reaching one or more of three allowable conclusions. The first is that "[c]hanges or alterations have been required in, or incorporated into, the project which avoid or substantially

lessen the significant environmental effect as identified in the final EIR." The second potential finding is that "[s]uch changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency." The third permissible conclusion is that "[s]pecific economic, social, or other considerations make infeasible the mitigation measures or project alternatives identified in the final EIR."

For purposes of these findings, the term "mitigation measures" shall constitute the "changes or alterations" discussed above. The term "avoid or substantially lessen" will refer to the effectiveness of one or more of the mitigation measures or alternatives to reduce an otherwise significant environmental effect to a less than significant level. Although section 15091, read literally, does not require findings to address environmental effects that an EIR identifies as merely "potentially significant," these findings will nevertheless fully account for all such effects identified in the EIR for the Project. When an impact remains significant or potentially significant with mitigation, the findings will generally find that the impact is still "significant."

In the process of adopting mitigation, the Authority will also be making decisions on whether the mitigation proposed in the DEIR/FEIR was "infeasible." Pursuant to the CEQA Guidelines, " 'feasible' means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."

SECTION G: LEGAL EFFECT OF FINDINGS

All of the feasible mitigation measures which avoid or substantially lessen the significant effects of the Project are binding on the Authority, affected landowners, and their assigns or successors in interest at the time of approval of the Project.

SECTION H: MONITORING PROGRAM

As required as Public Resources Code section 21081.6, the Authority, in adopting these findings, also adopts a monitoring and reporting program designed to ensure that, during implementation of the Project, the Authority, private developers, and any other responsible parties, implement the adopted mitigation measures. The final monitoring program is adopted under separate resolution.

SECTION I: SHORT-TERM USES vs. LONG-TERM PRODUCTIVITY

Recent legislation modifying Pub.Res. Code § 21100, has deleted the requirement for this analysis. Nevertheless, the environmental impacts which narrow the range of beneficial existing

uses of the existing environment, but which are believed by the Authority to be justified at this time, were summarized in Volume 3, Section V of the DEIR.

The Authority finds there are no other feasible mitigation measures or alternatives that it could adopt at this time that would reduce the cumulative and long term impacts of the Project. The Authority further finds for the reasons set forth in the Statement of Overriding Considerations that the implementation of the proposed Project is appropriate and will accommodate growth and transportation needs in the region, despite the potential adverse impact on short term and existing uses.

SECTION J: IRREVERSIBLE CHANGES

Irreversible environmental changes associated with the Project are discussed in Volume 3, Section V of the DEIR. The purpose of this section is to enumerate the uses of nonrenewable resources that would result from development of the State Route Bypass Project. Implementation of the Project would require the following significant reversible environmental changes and irretrievable commitments of resources:

1. Conversion of agricultural land to urban uses.
2. Expansion of urban uses into lands currently function as open space.
3. Consumption of energy and materials during project construction.
4. Grading that would irreversible alter the topography of the Project area, and could result in the loss of a portion of Corps Section 404 jurisdictional wetlands.
5. Consumption or energy, water, and services during Project operation.
6. Development of the project would expand infrastructure into the area by the introduction of a roadway system onto undeveloped land. This would be an irreversible commitment of the Project area to urban use.
7. Operation of the project would add daily and peak-hour vehicle trips to the immediate area and to local streets and intersections. The increase in total traffic throughout the Project area would irreversible increase related emissions into the air of total organic gases, carbon monoxide and nitrogen gases.
8. The visual characteristics of the Project area would be irreversibly altered.

The Authority finds that there are no other feasible mitigation measures or alternatives that it could adopt at this time that would reduce the irreversible changes associated with the Project discussed above. For the reasons stated throughout these findings and particularly stated in the

Statement of Overriding Considerations, the Authority finds that the adoption and implementation of the proposed Project is appropriate and will accommodate growth and transportation needs in the region, despite the irreversible environmental changes that will result.

SECTION K: GROWTH INDUCEMENT

Section V of the DEIR and Section II of the FEIR presents the growth-inducing impacts that can be anticipated from adoption and implementation of the proposed Project.

Significant Impact V.A.1: The Bypass Project will induce growth in East Contra Costa County. It is anticipated that the Project will improve access to a substantial amount of undeveloped land, thus removing an obstacle to further real estate development in this region. The degree of increased development attributable to the Project is unclear, and it is also unclear whether the Bypass alone would allow for growth beyond that allowed for in County and local General Plans. However, the Bypass is expected to affect the timing and rate of allowed growth. This would be a significant impact.

Mitigation Adopted by City Council

The following combination of mitigation measures could reduce the impact of growth inducement. These include: limiting allowable development through the General Plan Amendment process at County and local level; commit to the development of urban core areas of East County prior to developing open space and agricultural land. Adopt community planning guidelines and design features that promote efficient land use with a high degree of multi-modal accessibility between land uses; cluster residential units into medium densities to promote use of transit, and develop where transit service is currently available. These combination of measures could mitigate the impact to a less-than-significant level. However, the lead agency does not have the authority to implement them. There fore, this impact remains significant and unavoidable.

Findings Concerning Adopted Mitigation Measure

Significance With Mitigation

The Authority finds that the above-stated mitigation measures are incorporated into the proposed Project. The Authority finds that these measures will lessen, but not eliminate, the potential adverse growth inducing effects associated with the Project. Thus, the impact remains significant and unavoidable.

The Authority finds there are no other feasible mitigation measures or alternatives which the Authority could adopt at this time which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or

eliminated, the Authority finds that specific economic, legal, social, technological, and other considerations identified in the Statement of Overriding Considerations support approval of the Project. The Authority finds that adoption and implementation of the proposed Project is appropriate and will accommodate growth and transportation needs in the region, despite the unavoidable off-site growth inducement that would occur.

SECTION L: CUMULATIVE IMPACTS

Section II of the FEIR presents the cumulative impacts that can be anticipated from adoption and implementation of the proposed project.

Cumulative Impacts Which Are Significant Without Mitigation

The proposed Project, in conjunction with all other development projects for the region, would cumulatively significantly change the character of the region, creating impacts, both adverse and beneficial. Cumulative impacts occur in topical areas including, but not necessarily limited to, land use, socioeconomics, visual resources, traffic and transportation, noise, air quality, geology, seismicity and soils, hydrology and drainage, biological resources and wetlands, cultural resources, energy, utilities, and public services. The following are the specific numbers of impacts identified as significant or potentially significant without mitigation. Please refer to Section O of these findings for the text of each impact, adopted mitigation measures, and significance of the impact with mitigation.

V.A.1, V.B.1, V.B.2, V.B.3, V.B.4, V.B.5, V.B.6, V.B.7, V.B.8, V.B.9, V.B.10, V.B.11, V.B.12, V.B.13, V.B.15, V.B.16, V.B.17, V.B.18, V.B.19, V.B.20, V.B.21, V.B.22, V.B.23, and V.B.24

Cumulative Impacts Which Remain Significant With Mitigation

Cumulative impacts that remain significant or potentially significant with the adopted mitigation occurring in topical areas such as land use, socioeconomics, visual resources, traffic and transportation, noise, air quality, geology, seismicity and soils, hydrology and drainage, biological resources and wetlands, cultural resources, energy, utilities, and public services. The following are the specific numbers of the impacts which remain significant with the adopted mitigation. Please refer to Section O of these findings for the text of each impact and the adopted mitigation measures.

V.B.1, V.B.2, V.B.3, V.B.4, V.B.5, V.B.6, V.B.7, V.B.8, V.B.9, V.B.10, V.B.11, V.B.13, V.B.15, V.B.16, V.B.17, V.B.18, V.B.19, V.B.20, V.B.21, V.B.22, and V.B.24

The Authority finds there are no other feasible mitigation measures or alternatives which the Authority could adopt at this time which would reduce the above cumulative impacts to less than significant. To the extent that these adverse impacts will not be substantially lessened or avoided, the Authority finds that specific economic, legal, social, technological, and other considerations identified in the Statement of Overriding Considerations support approval of the Project. The Authority finds that adoption and implementation of the proposed Project is appropriate and will accommodate growth and transportation needs in the region, despite the potential adverse cumulative impacts.

SECTION M: FINDINGS ON SIGNIFICANT EFFECTS AND MITIGATION MEASURES

The FEIR set forth environmental effects of the Project that would be potentially significant or significant in the absence of mitigation measures of the Project. These effects (or impacts) are set forth below, along with those mitigation measures (changes or alterations) adopted, that will avoid or substantially lessen those potentially significant or significant effects. Also set forth are certain significant effects that cannot be avoided or reduced to a less than significant level even with the adoption of all feasible mitigation measures proposed in the FEIR. In adopting these findings, the Authority also adopts a Statement of Overriding Considerations setting forth the economic, social and other benefits of the Project that will render these significant effects acceptable.

The Authority is not required to adopt mitigation measures or adopt policies as part of the Project for impacts that are less than significant.

Under "Findings on Adopted Mitigation Measures," the Authority is finding whether the impacts remain significant or are reduced to insignificance with adopted feasible mitigation and also whether certain other measures which were proposed, but not adopted, are infeasible for social, economic or other reasons. The Authority is also identifying those measures that are within the jurisdiction and responsibility of other agencies.

SECTION M. FINDINGS ON SIGNIFICANT EFFECTS AND MITIGATION MEASURES

1. Findings Concerning Impacts Resulting From Inconsistency With Existing Plans And Policies

The identified impacts to existing plans and policies that are significant or potentially significant without mitigation, the adopted mitigation measures and findings of the Authority regarding those impacts with the adopted mitigation, are as follows:

Significant Impact III.A.2: Development of the Project as a four-lane expressway is not consistent with the language of the Antioch General Plan which assumes a two-lane expressway. At the

completion of Phase II, a four-lane freeway/expressway is assumed along the northern portion of the Project alignment between Antioch and Walnut Boulevard. This is not consistent with the language of Antioch's General Plan which identifies the Delta Expressway (now called the State Route 4 Bypass Project) as a two-lane expressway. This inconsistency would be a significant impact.

Mitigation Adopted by the Authority

III.A.2. Modify the language in Antioch's General Plan Circulation Element to describe the State Route 4 Bypass Project as a four-lane expressway.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because it ensures consistency with the Antioch General Plan. (DEIR Volume 3, page III.A.16.)

Significant Impact III.A.3: The Association of Bay Area Governments (ABAG) adopted the "Land Use Policy Framework for the San Francisco Bay Area" on July 26, 1990. Among the goals within the "Framework" are to "Allow for the development of new communities along transit corridors where interurban transit service and capacity are available or committed when they would be consistent with regional or subregional goals and objectives, and not negatively impact existing communities." Development of the Bypass Project, which may induce growth in relatively underdeveloped areas of Contra Costa, conflicts with this goal. This would be a significant impact.

Mitigation Adopted by the Authority

III.A.3. The policy would have to be modified to allow for consistency with the project; the lead agency has no authority to enact such a change.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is

feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

With regard to these mitigation measures, the Authority also finds that the land use policy for the San Francisco Bay area is within the responsibility and jurisdiction of ABAG and not the Authority. ABAG has adopted this mitigation or can and should adopt this mitigation.

Significant Impact III.A.4: The Project could induce growth to occur outside of the City of Antioch's Urban Core before a commitment to the completion of development within the core is complete. This is inconsistent with Goal A of the Antioch General Plan. This is a significant impact.

Mitigation Adopted by the Authority

III.A.4. This impact could be mitigated through changes in the General Plan land use element but the lead agency has no authority to enact such changes.

Findings Concerning Adopted Mitigation Measures

Significance with Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

2. Findings Concerning Land Use Impacts

The identified existing land use impacts that are significant or potentially significant without mitigation, the adopted mitigation measures and findings of the Authority regarding those impacts with the adopted mitigation, are as follows:

Significant Impact III.B.1: Development of the Project would result in the removal and relocation of existing residential and commercial land uses. The Bypass segment of the Project would result in the removal and relocation of four single-family residences, three businesses, the county store and two sets of natural gas facilities. The Marsh Creek Road connector would result in the removal and relocation of the produce stand and the take-away food stand at the intersection of Marsh Creek Road and Walnut Boulevard. Along Marsh Creek Road, there are approximately 22 single-family residences fronting the highway, that are immediately adjacent to the proposed right-of-way. Portions of the front yards of these residences would be taken by the widening of Marsh Creek Road. The structures themselves could also require relocation if their proximity to the widened roadway violated established residential setback regulations. These impacts would be significant.

Mitigation Adopted by the Authority

III.B.1. A relocation and assistance plan shall be developed as required by the California Relocation Assistance and Property Acquisition Act of 1971, Government Code 7260 et. seq., for any residences or businesses displaced by the Project. This Act establishes policies and practices for the real property acquisition (including determination of just compensation), acquisition of buildings, structures and improvements, reimbursement for expenses incidental to transfer of title, and reimbursement of property owner's court costs in certain well-defined situations. The Act applies equally to all property owners regardless of race, color, religion, sex or national origin. All actions taken by an acquiring agency must be in compliance with the non-discrimination requirements of Title VI of the Civil Rights Act of 1964. The process set out in the Act is initiated following the procurement of funding for a public project.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project.

Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact III.B.2: Development of the Project would result in the removal of prime agricultural land and Farmland of Statewide Importance. Approximately 125 acres of prime agricultural land and approximately 22 acres of farmlands of statewide importance would be removed as a result of the Bypass portion of the proposed Project, and approximately 60 acres of prime agricultural land would be removed as a result of the Marsh Creek Road portion of the proposed Project. Thus, the Project would result in loss of a total of approximately 185 acres of prime agricultural land and a total of approximately 22 acres of farmlands of statewide importance. These losses would diminish the agricultural productivity of eastern Contra Costa County, and would be significant impacts of the Project. Additionally, the Bypass segment of the Project would affect approximately 88 acres of land under Williamson Act contract, and the Marsh Creek Road connector would affect about 23 acres of land in four parcels under Williamson Act contract (thus, the Project as a whole would affect a total of approximately 111 acres under Williamson Act contracts). The contract covering approximately 94 acres (Contract AP 16-74) is due to expire in 1996, prior to completion of the proposed Project; cancellation of the contract on these acres would therefore not be considered to be caused by the Project. The Project would likely require modification or cancellation of contracts covering the approximately 17 remaining acres. Project impacts on Williamson Act contracts would not likely be considered significant; however, related loss of prime agricultural land would be considered significant.

Mitigation Adopted by the Authority

III.B.2. Design the final alignment to minimize impacts to prime agricultural lands. During construction, locate staging areas away from prime agricultural land as much as possible.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project.

Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact III.B.3: Development of the Project would conflict with residential, religious and recreational land uses outside the right-of-way. These impacts would be significant. Development of the Bypass segment of the proposed Project would not be compatible with the existing residential units, church, and recreational ball field immediately adjacent to the right-of-way. The noise and visual characteristics associated with the Bypass would likely disturb persons in adjacent residential units and could disrupt the daily activities at the church and recreational ball field. Similarly, development of the Marsh Creek Road portion of the proposed Project could adversely affect existing residential uses adjacent to the right-of way. This incompatibility with existing land uses would be a significant impact.

Mitigation Adopted by the Authority

III.B.3: Provide a buffer zone between the Marsh Creek Road connector and existing or proposed adjacent land uses to minimize disruption to the latter. Plant with vegetation and consider constructing berms where proximity of land uses could be most adversely affected.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because it requires a buffer zone to minimize noise and visual disruptions to existing and proposed adjacent land uses.

(DEIR, Volume 3, page III.B.16.)

Significant Impact III.B.4: Development of the Project would cross several trails which could be incompatible with pedestrian use of the trail and the recreational experience. This would be a significant impact. The north/south segment of the proposed Project would cross the proposed trails along the Contra Costa Canal, the Mokelumne Aqueduct, the East Contra Costa County Irrigation District Main Canal, Sand Creek, Deer Creek and Dry Creek. This would be incompatible with pedestrian use of the trail and would conflict with the recreational experience intended by creation of these trails. This conflict would be considered a significant impact.

Mitigation Adopted by the Authority

III.B.4. Provide grade separations between the Bypass right-of-way and the proposed trails.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because grade separations would prevent conflicts with pedestrian and recreational use of the trails systems.

(DEIR, Volume 3, page III.B.16.)

3. Findings Concerning Socioeconomic Impacts

The identified socioeconomic impacts that are significant or potentially significant without mitigation, the adopted mitigation measures and findings of the Authority regarding those impacts with the adopted mitigation, are as follows:

Significant Impact III.C.1: Development of the Project would displace existing residential structures within the 250-foot-wide expressway right-of-way and commercial structures within the 110-foot Marsh Creek Road right-of-way. Single family residences immediately adjacent to the Marsh Creek Road right-of-way could also require relocation dependent upon their proximity to the widened roadway. This would be a significant impact. Approximately four housing units within the 250-foot right-of-way and two commercial uses within the 110-foot right-of-way would be displaced by development of the Project. The number of single family residences adjacent to the right-of-way requiring relocation would be determined during development of the final roadway alignment. This would be a significant impact.

Mitigation Adopted by the Authority

III.C.1. A relocation and assistance plan shall be developed as required by the California Relocation Assistance and Property Acquisition Act of 1971, Government Code 7260 et seq., for any residences and/or businesses displaced by the Project. This Act establishes policies and practices for the real property acquisition (including determination of just compensation), acquisition of buildings, structures and improvements, reimbursement for expenses incidental to transfer of title, and reimbursement of property owner's court costs in certain well-defined situations. The Act applies equally to all property owners regardless of race, color, religion, sex or national origin. All actions taken by an acquiring agency must be in compliance with the non-discrimination requirements of Title VI of the Impact would be reduced, but not to a less-than-significant level. Civil

Rights Act of 1964. The process set out in the Act is initiated following the procurement of funding for a public project.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project.

Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact III.C.2: Development of the Project would result in the loss of prime agricultural land along the length of the right-of-way currently in agricultural production. This would be a significant impact. The proposed Project would remove prime agricultural land from production along the length of the right-of-way and along Marsh Creek Road (identified under Section III.B. Land Use). This loss of prime agricultural lands and farmlands of statewide importance would diminish the agricultural productivity of eastern Contra Costa County. This would be a significant impact.

Mitigation Adopted by the Authority

III.C.2: Locate roadway right-of-way to minimize removal of prime agricultural lands.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project.

Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

4. Findings Concerning Visual Resources Impacts

The identified visual resources impacts that are significant or potentially significant without mitigation, the adopted mitigation measures and findings of the Authority regarding those impacts with the adopted mitigation, are as follows:

Significant Impact III.D.1: Development of the Project could affect views of the road from outlying areas. This would be a significant impact. Views of the road from outlying areas would depend on how high the road is elevated above the terrain, which is generally flat. Phase I of the Project proposes an elevated interchange at the northern end of the Bypass where it would connect to existing SR 4. Phase II proposes grade-separated interchanges at SR 4/160, Laurel Road, and Lone Tree Way. These interchanges would create strong visual contrasts with the existing landscape which would be significant.

Mitigation Adopted by the Authority

- III.D.1.
- (a) Landscape roadsides, including planting rows of trees or bushes, to screen or block views of the road from nearby residences and to reduce glare and light from vehicles.
 - (b) Exercise in removing riparian vegetation and restoring vegetation where possible after construction.
 - (c) Where cutting and filling activities are necessary, reseed with native grasses to reduce visual impacts of erosion and contrasts in color and texture with adjacent landscapes.
 - (d) Park construction equipment in specially designated areas to remove it from view when not in use. Construction materials could be stored out of view of homes.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is

feasible and will lessen but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project.

Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact III.D.2: The Project would be visible from adjacent residential areas either already developed or under consideration for development. This would be a significant impact. The Project would leave the existing freeway heading southeast adjacent to Neroly Road. Views of the new Bypass would be visible to homes in a new residential development along Neroly Road east of the Southern Pacific Railroad track. Phase II would include interchanges at Laurel Road and Lone Tree Way which would strongly contrast with existing landscape features, and would therefore be significant. As the Bypass nears Brentwood, near Concord Avenue, it would bypass a planned residential development by the Blackhawk Corporation, and would be visible to residents of this subdivision. Views of the Bypass from adjacent properties would significantly impact the landscape design of the new residential community. The strong linear feature of the roadway would strongly contrast with the gently rolling landscape in the foreground and middle-ground and natural contours of background hills. This would be a significant impact.

South of Brentwood, the Bypass would proceed generally southeast along the base of the foothills, crossing Marsh Creek and Kellogg Creek, where it would intersect with Walnut Boulevard. There are three large developments in various stages of planning in this area: Should any of these Projects be undertaken, the new roadway would be visible to residents from viewpoints not shielded by natural barriers. Unless these developments incorporate design measures to reduce the visual intrusion of the expressway, the Project could dominate foreground views from these residences which would be considered a moderate to strong contrast with the existing landscape characters. This impact would be significant.

Mitigation Adopted by the Authority

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen but not necessarily eliminate the potential adverse environmental

effect associated with the Bypass Project.
Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact III.D.4: The Project would widen Marsh Creek Road a designated Scenic Highway. This widening would impact existing vegetation and other landscape features contributing to its status as a scenic highway. This would be a significant impact. Marsh Creek Road is currently a well-traveled roadway connecting eastern Contra Costa County with the central portion of the county. The road runs from State Route 4 south of Brentwood west and north through the Diablo Range to Clayton, from where Clayton Road continues into Concord. Removal of mature trees for roadway widening could have a significant visual impact on residential development along Marsh Creek Road.

Mitigation Adopted by the Authority

III.D.4. In addition to the mitigations identified under III.D.1, design the Marsh Creek Road roadway alignment to avoid removal of mature trees, where possible, or at a minimum, replant with vegetation of similar canopy.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because avoidance of mature trees or replanting will provide a similar canopy.

(DEIR, Volume 3, page III.D.13.)

5. Findings Concerning Traffic and Transportation Impacts

The identified traffic and transportation impacts that are significant or potentially significant without mitigation, the adopted mitigation measures and findings of the Authority regarding those impacts with the adopted mitigation, are as follows:

Significant Impact III.E.2: The Project would have a detrimental impact on traffic levels of service (LOS) at five intersections in the vicinity of the project under Phase I and at two intersections under Phase II. This would be a significant impact.

Mitigation Adopted by the Authority

III.E.2. Provide traffic engineering improvements as shown in Tables III.E.13, III.E.14, and III.E.15 of Volume 3 of this EIR for Year 2000 Project Phase I, Year 2010(+) Project Phase I, and Year 2010(+) Project Phase II intersection impacts. Traffic engineering improvements include increases in the number of approach lanes at impacted intersections, or, in more severe cases, provision of grade separated interchanges. Traffic levels of service improve from E or F conditions prior to mitigation, to D or better conditions.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the identified improvements will ensure LOS D or better at each of the five intersections in the Project vicinity.

(DEIR, Volume 3, pages 36 and 43.)

Significant Impact III.E.3: The Project would have a detrimental impact on traffic levels of service on the existing SR 4 freeway from SR 160 to Bailey Road. This would be a significant impact.

Mitigation Adopted by the Authority

III.E.3: Improve the State Route 4 Freeway to provide for additional capacity from the Bypass to Bailey Road, as follows:

By year 2000, provide for widening from two to three lanes in each direction. The extra capacity would result in a v/c ratio of 0.78 (LOS C) in the evening peak hour on the section west of Railroad Avenue, and 0.67 (LOS B) on the section west of Lone Tree Way.

By year 2010(+), provide additional widening to four lanes in each direction (whether the Phase I or Phase II project is built by that time). The extra capacity would result in a v/c ratio of 0.93 (LOS E) in the evening peak hour on the section west of Railroad Avenue

and 0.95 (LOS E) on the section west of Lone Tree Way for the Phase I project. Similar improvements to level of service would be obtained under Phase II project conditions.

It is important to note that these calculations do not account for diversion of traffic from parallel roadways such as Buchanan Road, Buchanan Road Bypass, Pittsburg/Antioch Highway and Delta Fair Boulevard/Leland Road that would result from additional freeway capacity. These diversions would result in near capacity conditions during the peak hour under the year 2010(+) conditions. The duration of congested conditions would, however, be less as a result of the highway widening.

- (a) Limit housing development in eastern Contra Costa County to avoid additional congestion on the existing State Route 4 freeway. This would reduce, but not eliminate the severity of the impact. If the Project were built under a scenario of lower housing growth in eastern Contra Costa County, the existing State Route 4 freeway would still experience an increase in traffic demand, over the no-project condition, due to improved access. However, the level of congestion would be lower than if all growth expectations were met, albeit at a lower level.
- (b) Participate in sub-regional and county-wide efforts at growth management required as part of the Measure C Growth Management process. Regional solutions are being sought to roadway congestion in Contra Costa County. This is an ongoing effort that seeks to address the interrelated issues of land development and transportation infrastructure. An *Action Plan for Routes of Regional Significance* is currently being prepared by the members of the State Route 4 Bypass Authority, plus the City of Pittsburg, in coordination with the Contra Costa Transportation Authority.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measures are incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measures are feasible and will lessen but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project.

Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact III.E.4: *Traffic conditions on the Bypass segment of the Project would exceed service standards. In the year 2000, traffic increases would result in slight degradation of conditions at the freeway portion of SR 4 west of Lone Tree Way. Year 2000 travel demands would quickly fill up the available capacity of the two-lane interim Project, and LOS E or F conditions would be expected on the Bypass for most of its length. In the year 2010 and beyond, traffic increases due to redistribution of traffic patterns from the project would result in the degradation of the freeway portion of SR 4 west of Lone Tree Way and west of Railroad Avenue and the non-freeway portion of SR 4 west of Lone Tree Way in the vicinity of Discovery Bay. Year 2010 (+) travel demands would quickly fill up the available capacity of the Bypass, whether built as a Phase I or Phase II Project, and LOS E or F conditions would be expected on the Bypass for most of its length.*

In the year 2000, intersection service levels would degrade at the Vasco Road/Camino Diablo Road intersection as a result of the Phase I Project, resulting in LOS F during both morning and evening peak hours. In addition, in the year 2000 the Laurel Road and Lone Tree Way intersections on the Bypass would have traffic demand in excess of capacity during both morning and evening peak hours. The Balfour Road intersection would be over capacity during the evening peak hour, and the Walnut Boulevard intersection would have LOS E conditions in the evening peak hour. In the year 2010 and beyond, traffic conditions would degrade at the Vasco Road/Camino Diablo Road intersection, due to Phase I and Phase II projects, resulting in LOS F during both morning and evening peak hours, and at SR 4 (east)/Lone Tree Way intersection under Phase II conditions, due to traffic redistribution. These would be significant impacts.

Mitigation Adopted by the Authority

III.E.4. Modifications to the proposed design for the Project should be made as follows. Tables III.E.13, III.E.14 and III.E.15 of Volume 3 of this EIR include recommendations for changes to the proposed design for intersections on the Bypass and the Marsh Creek Road east-west connector. The improvement needs of the three project conditions studied are summarized below:

- (a) Year 2000 Phase I Project Condition. Make modifications to Laurel Road, Lone Tree Way, Balfour Road and Marsh Creek Road intersections with the Bypass as shown in Table III.E.13. These should be sufficient to obtain acceptable operation on the two-lane expressway under anticipated year 2000 traffic conditions. Intersection level of service would improve from F to C or D at each of these locations.
- (b) Year 2010(+) Phase I Project Condition. Improvement needs at the proposed at-grade intersections with the proposed Phase I Bypass are shown in Table III.E.14. The intersections at Laurel Road, Lone Tree Way, and Balfour Road indicate the need for two through lanes in each direction, and the intersection at Sand Creek Road has a need for several additional turn lanes. This indicates that a four lane

cross section should be provided from the SR 4 freeway to south of Balfour Road. Improvements would also be needed at the intersection of Sellers Avenue with the Marsh Creek Road east-west connector. Intersection level of service would improve from E and F conditions to B, C or D conditions with the recommended improvements.

- (c) Year 2010(+) Phase II Project Condition. Improvement needs at the proposed at-grade intersections with the Phase II Bypass are shown in Table III.E.15. Demand under the Phase II project scenario indicates the need for three through lanes of capacity between Lone Tree Way and south of Balfour Road to maintain an at-grade project. The intersection geometric shown are illustrative -- the appropriate way to mitigate this deficiency would be to provide a grade separated interchange. Intersection level of service would improve from E and F conditions to B and D conditions.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the phased improvements would improve levels of service at the specified intersections.

(DEIR, Volume 3, pages III.E.45 and 46.)

Significant Impact III.E.5: The Project is not included in the Metropolitan Transportation Commission's Regional Transportation Plan Capital Improvement Program. It is therefore not consistent with the Plan. In order for the Project to become the adopted State Route 4 Bypass, it must be included on this plan. This would be a significant impact.

Mitigation Adopted by the Authority

III.E.5. State Route 4 Bypass Authority shall assure that the Project is included on appropriate plans prior to proceeding with construction of the Project.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the Authority will not commence Project construction until

adopted as part of the Regional Transportation Plan and other relevant plans.
(DEIR, Volume 3, page III.E.46.)

Significant Impact III.E.6: In the year 2010(+) scenario, traffic along Marsh Creek Road, motorists exiting driveways and moving farm equipment would experience increased difficulty finding adequate traffic gaps.

Mitigation Adopted by the Authority

III.E.6. Provide improvements described in Response to Comment CC-3 which include provision of the most appropriate of the following measures: median barriers and prohibited left-turns; provision of frontage roads or roads located behind structures leading to intersections; add selected left-turn lanes; and relocate residents.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the proposed measures will gaps in oncoming traffic generated by the Project to enhance traffic flow. (FEIR, pages IV. 217 and 218)

Significant Impact III.E.7: There will be sharp 90 degree turn at the east end of the Marsh Creek Road Project as it joins the existing State Route 4. This may affect roadway safety and traffic conditions.

Mitigation Adopted by the Authority

III.E.7. Redesign the intersection of Marsh Creek Road /Existing SR 4 to facilitate a smooth transition for the east-west traffic flow. Marsh Creek Road would become a "through" or unimpeded roadway. The existing segment of SR 4 would intersect the through route as the minor leg of a new intersection, as shown in Figure III.E.7. This would require a net initial take of up to 2 acres of agricultural core land, though a portion of the shaded area may be returned to agricultural use.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse

environmental effect because the proposed measures will facilitate a smooth transition for the east/west traffic flow thereby reducing impacts to roadway, safety, and traffic conditions. (FEIR, pp. IV.L.14.)

6. Findings Concerning Noise Impacts

The identified noise impacts that are significant or potentially significant without mitigation, the adopted mitigation measures and findings of the Authority regarding those impacts with the adopted mitigation, are as follows:

***Significant Impact III.F.1:** Construction activities would temporarily increase ambient noise levels in the Project area. Road construction activities would generate high noise levels in the Project area during the construction phase. For road projects, the major pieces of construction equipment are trucks, scrapers, rock drills, and pavers. Some blasting would also be required for the Project. High noise levels would not be expected to occur for more than one or two months at any one location given that road construction crews (and their equipment) would move along the corridor as construction proceeds. The number of existing residences that would be significantly affected would be relatively small but if lands adjacent to the right-of-way convert from agricultural uses to residential and commercial uses as called for under the Antioch and Brentwood General Plans, then the number of residences significantly affected by construction noise would be much higher. This would be a significant impact.*

Mitigation Adopted by the Authority

III.F.1. The following measures would reduce the noise from construction equipment and the accompanying disturbance to sensitive land uses in the corridor:

- (a) Limit noisy construction activities to these hours: 7:00 a.m. and 6:00 p.m., Monday through Friday, and 8:00 a.m. to 5:00 p.m., on Saturdays.
- (b) Use power construction equipment with state-of-the-art noise shielding and muffling devices.
- (c) Provide notification and schedule information (including blasting times) concerning road construction to residents within the corridor, and provide a means whereby residents can call with complaints or questions.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse

environmental effect because the construction restrictions imposed by the mitigation will reduce noise levels around residences in the Project area.
(DEIR, Volume 3, page III.F.18.)

Significant Impact III.F.2: Over the long term, the Project would substantially increase noise in the vicinity of the Bypass right-of-way and along Marsh Creek Road. Development of the Project would cause a redistribution of future motor vehicle traffic in the East County area as well as indirectly increasing the number of vehicle trips by accommodating a level of development that would not otherwise occur in East County. This would be a significant impact.

Mitigation Adopted by the Authority

III.F.2. Several measures can be implemented to reduce potential incompatibility between existing and future land uses in the vicinity (and within) the corridor and the freeway (see Measure III.F.3), but no practical measure exists to reduce the noise impacts from the Bypass to a less than significant level because existing noise levels are so low and future traffic volumes would be substantial. Thus, the increase in ambient noise levels within the Project vicinity would be a significant, unavoidable impact of the Project.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project.

Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

***Significant Impact III.F.3:** Development of the Project would generate noise levels that exceed compatibility guidelines for residential uses over a wide area. Incompatibility issues may become a greater problem with continued growth and development in the East County Area. Using the 60 dBA, Ldn contour as the basis for evaluating residential/noise compatibility, existing and future residences within 2,000 feet of the nearest lanes (west and north of Laurel Road) to within 800 feet of the nearest lanes (east and south of Balfour Road) would experience a change in their noise environment due to the Project sufficient to change their environment from completely compatible to conditionally compatible or incompatible. While the number of existing residences (and other noise sensitive uses, like churches) that would be affected would be low, there could be more in the future given the development plans of the affected jurisdictions for the East County area. Specifically, Antioch and Brentwood both are planning for additional residential growth in areas adjacent to the right-of-way which could experience traffic noise levels in excess of the 60 dBA, Ldn compatibility standard. This would be a significant impact.*

Mitigation Adopted by the Authority

III.F.3. The following measures could be implemented to reduce potential incompatibility between operation of the Project and existing and future sensitive land uses:

- (a) Maintain a sufficient buffer (open space) between the Bypass and future sensitive land uses. This measure will require implementation by the jurisdictions, including the Cities of Brentwood, Antioch, and Contra Costa County, with land use authority over the land adjacent to the corridor. These jurisdictions could amend their General Plans to specify that a sufficient buffer distance (consistent with the estimates in this report for the 60 dBA, Ldn contour) between the Project

and sensitive land uses be maintained. As an alternative or in combination with a buffer (open space), the affected jurisdictions could plan for less sensitive land uses (commercial, office, business park, or industrial) between more-sensitive uses and the ROW.

Such uses would act to shield the more-sensitive uses allowing for a compatible residential noise environment closer than the distances identified in the impact section above. These jurisdictions would enforce Title 24 standards for multi-family residential development proposals within 2,000 feet of the center of the ROW, and could apply the same insulation requirements to single-family residential proposals, as well.

- (b) Construct sound barriers to reduce traffic noise at noise-sensitive locations. Barriers can take various forms, including landscaped earthen berms, walls, depressed roadways, and even thick stands of vegetation, or some combination of the four. This measure would be best suited for a 2,500-foot-long segment east of the alignment where the alignment runs closest to the residences near the Southern Pacific line and Neroly Road.
- (c) Provide noise insulation for existing residences that would be significantly affected by project noise.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the mitigation requires implementation of noise buffering techniques to reduce impacts to noise sensitive land uses.

(DEIR, Volume 3, pages III.F.18 and 19.)

7. **Findings Concerning Air Quality Impacts**

The identified air quality impacts that are significant or potentially significant without mitigation, the adopted mitigation measures and findings of the Authority regarding those impacts with the adopted mitigation, are as follows:

Significant Impact III.G.1: Construction activities would temporarily generate substantial amounts of criteria air pollutants, particularly NO_x and fine particulate matter (PM₁₀). Grading and excavation activities associated with road construction would generate substantial amounts of criteria pollutants through combustion of fuel to power construction equipment and haul trucks and through movement of earth and vehicle travel over unpaved surfaces. Grading activities and

truck movement over unpaved surfaces would be the two principal sources of fugitive dust. Construction-related fugitive dust contains fine particulate matter associated with adverse health effects, as well as larger-sized particles that settle out of the air within several hundred feet of the construction area (associated with nuisance effects). With the scale of this Project, the extent of earth movement and the extent of truck travel over unpaved surfaces would likely be substantial. The PM_{10} fraction of the fugitive dust generated by construction would add to background PM_{10} concentrations that already exceed the state health-based standards on a regular basis. This would be a significant impact.

Mitigation Adopted by the Authority

III.G.1. To reduce the amount of particulate matter generated by earth-moving activities and vehicle travel over unpaved surfaces, implement the following dust abatement program. This program would benefit from the designation of a person or persons by the construction contractor to oversee implementation of all the aspects of the program.

- (a) Water active sites, temporary unpaved parking or staging areas, and unpaved road surfaces at least twice daily.
- (b) Suspend all excavating and grading operation when wind speeds (as instantaneous gusts) exceed 25 miles per hour.
- (c) Replace ground cover in disturbed areas as quickly as possible.
- (d) Enclose, cover, water twice daily, or apply soil binders to exposed stock piles (e.g. sand, gravel, or dirt).
- (e) Sweep streets at the end of day if any visible soil material is carried over to adjacent thoroughfares.
- (d) Limit speeds on unpaved road surfaces to 15 mph or less.
- (e) Cover all trucks hauling dirt, sand, soil, or other loose materials. Maintain at least six inches of freeboard (i.e. the minimum required space between the top of the load and the top of the trailer).

To reduce combustion emissions from construction equipment, the following measures should be implemented:

- (a) Prevent trucks from idling longer than two minutes.
- (b) Require catalytic converters for all gasoline-powered equipment, where feasible.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the dust abatement program will reduce emissions of PM₁₀ generated by earth moving activities associated with the Project. (DEIR, Volume 3, pages III.G.19 and 20.)

Significant Impact III.G.2: Development of the Project would result in an increase in emissions over those expected under the no-project scenario. This increase would exceed BAAQMD significance criteria and would be a significant impact. The comparison of the net increase in emissions due to the Project (i.e. the difference between the no-project and Project cases) with the significance criteria shows that project emissions of HC, NO_x, and PM₁₀ would be significant in 2000 and project emissions of NO_x and PM₁₀ would be significant in 2010. The physical impact of the increase in emissions due to the Project would be incrementally higher pollutant concentrations. This would be a significant impact.

Mitigation Adopted by the Authority

III.G.2. The following measures would reduce the net increase in motor vehicle emissions associated with the Project.

The Authority shall encourage Metropolitan Transportation Commission (MTC) to amend its High-Occupancy Vehicle (HOV) Lane Mater Plan 2005 and RTP to include HOV lanes on State Route 4 east of Railroad Avenue. This would provide the opportunity to connect to HOV lanes developed under Phase II for that portion of the proposed Bypass north of Balfour Road.

If MTC amends its HOV Plan and RTP, the Authority shall develop HOV/express bus lanes and develop Park & Ride lots that support their usage with transit easements for preferential parking policies, express but turnouts, and special HOV ramps. The development of HOV lanes in the Bay Area is one of the transportation control measures (TCM) contained in the '91 Clean Air Plan and is expected to reduce HC and NO_x from mobile sources (TCM #8 Bay Area 191 Clean Air Plan, Volume II, Appendix F, Transportation Control Measure Descriptions, October 1991). Development of HOV lanes along the proposed alignment under Phase II would contribute to the effectiveness of this regional TCM, but the extent to which it would contribute in terms of reductions in lb/day of HC or NO_x cannot be quantitatively estimated.

Based on emissions estimates made using EMFAC7F, mitigation measures must demonstrate a reduction of 262 lb/day of PM10 by Year 2000 to reduce PM10 air quality impacts to less-than-significant (i.e. to reduce the project incremental increase to less than 150 lb/day). By 2010, under Phase I, mitigation measure must demonstrate a reduction of approximately 390 lb/day of PM10. Under Phase II (Year 2010), the necessary reduction would be 399 lb/day of PM10.

The Authority shall work with Contra Costa County to identify and pave public roads within the County that are currently unpaved. Based on emissions factors and assumptions contained in BAAQMD's Base year 1990 Emissions Inventory Source Category Methodologies (October 1993), paving of unpaved roads would reduce PM10 emissions by tow lb/VMT (based on a particle size multiplier of 0.36 for PM10 and 60 rain days per year). Assuming 10 VMT per day on any given unpaved road, paving of unpaved roads would reduce PM10 emissions by 20 lb PM10 per day for each mile paved. Thus, the goad for this measure would be to pave approximately 13 miles by 2000 and an additional seven miles by 2010.

Based on emissions estimates made using EMFAC7F, mitigation measures must demonstrate a reduction of 56 lb/day of HC and 140 lb/day of NO_x by Year 2000 to reduce ozone precursor (i.e. HC and NO_x) air quality impacts to less-than-significant (i.e. to reduce the project incremental increase to less than 150 lb/day). By 2010, under Phase I, mitigation measures must demonstrate reductions of approximately 167 lb/day of NO_x, and under Phase II (year 2010), the necessary reductions would be 406 lb/day of HC and 451 lb/day of NO_x.

The Authority shall work with local school districts in Contra Costa County to subsidize a program whereby diesel-powered school buses would be replaced with electric-powered buses. The Authority would fund the additional costs associated with these buses. Using EMFAC7F emissions factors for urban buses at an average speed of 15 mph, buses emit approximately six to seven grams of HC per mile and approximately 22 grams per mile of NO_x. Thus, for each replacement, the reduction would be approximately 1.4 lb/day of HC and 4/9 lb/day of NO_x assuming 100 miles per day per bus. To reduce the impact to less-than-significant, the Authority would need to replace 40 diesel-powered school buses with electric buses by 2000. By 2010, under Phase II, an additional 250 would need to be replaced.

The Authority shall encourage Antioch, Brentwood, and Contra Costa County to use their land use development authority to see that proposed residential development in the East County are includes sufficient mixed-use character and alternate transit features (e.g. bike lanes) that future residents would not be forced to use their vehicles for every trip (work, shopping, school, etc.) outside the home.

The Authority shall encourage Antioch, Brentwood, and Contra Costa County to coordinate land use development with BART and Eastern Contra Costa County Transit Authority to ensure that future development would be provided with realistic alternatives to automobile use. The effectiveness of this measure cannot be quantitatively estimated.

The Authority shall encourage Antioch, Brentwood, and Contra Costa County to provide retail and services at employment sites, incentives for infill development, and increased densities near existing and planned transit facilities.

The Authority shall encourage Antioch, Brentwood, and Contra Costa County to require developers to include bicycle and pedestrian amenities in their site designs.

The Authority shall encourage Antioch, Brentwood, and Contra Costa County to amend their parking requirements to reduce the number of parking spaces that developers must provide.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measures are incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project.

Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Since all of the above mitigation measures require the resources, cooperation, and commitment of other agencies, the overall effectiveness cannot be ensured at this time. The Lead Agency lacks the authority to insure implementation of these measures. Therefore, the residual impact would still be significant.

Infeasible Mitigation

The Authority finds that the above stated mitigation measure directing the Authority to work with local school districts to subsidize electric powered buses is infeasible because the equivalent technology for electric school buses is not available. Moreover, the Authority finds that it cannot guarantee that it will be able to fund additional costs

associated with these buses at the time the technology becomes available.

Significant Impact III.G.5: Development of the Project would hinder regional efforts to attain the transportation performance standards set forth in the California Clean Air Act. This would be a significant impact.

Mitigation Adopted by the Authority

III.G.5: See mitigation measure III.G.2.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project.

Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact III.G.6: The Project may not conform to the state implementation plan (developed pursuant to the federal Clean Air Act Amendments of 1990) in effect at the time of project approval.

Mitigation Adopted by the Authority

III.G.6. Prior to development of the State Route 4 Bypass Project, include the project in the Regional Transportation Plan and Transportation Program. Perform specific CO analysis to assure conformance with air quality standards.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the CO analysis will identify potential nonconformance. (FEIR, page II-174.)

8. **Findings Concerning Geology, Seismicity and Soils Impacts**

The identified existing plans and policies impacts that are significant or potentially significant without mitigation, the adopted mitigation measures and findings of the Authority regarding those impacts with the adopted mitigation, are as follows:

Significant Impact III.H.1: Construction of the Project would require the movement of approximately 3.3 million cubic yards of earth for roadway excavation. Displacement and compaction would occur during construction of this Project. Soils that have been identified as inappropriate for use in roadbed construction would have to be moved off-site. Engineered fills may have to be imported from off-site for use in areas where existing soils have high susceptibility to liquefaction and/or high shrink/swell potential. Compaction of soils during roadbed construction will alter drainage patterns. Because of the amount of soil moved and the size of the Project area, this would be a significant impact.

Mitigation Adopted by the Authority

III.H.1. Employ the following engineering techniques to mitigate the impact of moving approximately 3.3 million cubic yards of earth associated with excavation of the roadway:

- (a) Develop a transportation and disposal plan for soils that will not be re-used in roadbed construction, in coordination with state and county agencies.
- (b) Move to an off-site area soils deemed inappropriate for re-use in roadbed construction, such as those with high shrink-swell or erosion potential, or loose, cohesionless sands prone to liquefaction. The determination of lack of suitability of these soils will be made on-site by a qualified geotechnical engineer or engineering geologist certified by the State of California.
- (c) Use engineered fill to replace those soils with inappropriate qualities for construction purposes. The fill will be approved by an on-site qualified geotechnical engineer or engineering geologist certified by the State of California.
- (d) To further enhance the likelihood of successful revegetation and long-term vegetative slope stabilization, Topsoil materials to be disturbed or removed during construction will be carefully distinguished, stockpiled, and protected separately from other soil materials that would be reused in roadbed construction by the on-site geotechnical engineer. As soon as is possible, stockpiled topsoil materials will be reused as a component of the revegetation seed bed materials for all cut and fill slopes, where feasible.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because implementation of the identified engineering techniques will limit soil compaction.

(DEIR, Volume 3, page III.H.12; and FEIR page II.115.)

***Significant Impact III.H.2:** Construction of the Project would require grading which would alter the topography in the Project area. Since most of the Project area is relatively flat, grading activities would not necessarily be considered significant, unless they included excavation of unstable slopes, which could undermine the Authority further finds that these mitigation measures are appropriate and feasible and will integrity of the slope, thereby increasing the risk for landslide. Slopes greater than 15 percent are generally considered to be potentially unstable. The Project area is primarily flat with slopes up to 15 establish procedures to avoid alteration of the quantity and/or degradation of the quality of recharge to percent limited to the northern portion of the expressway. Devegetation and alteration of drainages in the northern portion of the Bypass would have the potential for causing unstable slopes and landsliding. Landsliding can temporarily or permanently block access to and from developed areas. Landslides along drainage channels can impede the flow of water, creating dams and subsequent flooding. The area represents a fairly small portion of the entire Project area, but the increased risk for landslides would be considered a significant impact.*

Mitigation Adopted by the Authority

III.H.2. Employ the following engineering techniques to mitigate slope instability and erosion/siltation impacts resulting from development of a roadway in the right-of-way:

- (a) Perform all grading and slope operations during the dry season (May - September).
- (b) Engineer cut slopes that are up to 15 feet high to no steeper than a 1.5:1 slope in soil, or a 0.75:1 slope in bedrock.
- (c) Engineer cut slopes that are higher than 15 feet to no steeper than 2:1 in soil or 1:1 in bedrock.
- (d) Engineer fill slopes less than 15 feet high to 5:1 or less; and 2:1 or less for slopes higher than 15 feet.

- (e) Scarify or serrate slopes into benches, 8" to 10" in width and height, to increase overall stability and allow for the reestablishment of vegetation.
- (f) Align roadways so as to not be parallel with the dip direction of adjacent slopes.
- (g) Stabilize barren soil slopes with jute netting or similar geotextile fabric, and revegetate slopes with fast-growing, continuous, deep-rooting, and fire and drought-resistant vegetation.
- (h) Divert storm water runoff from slopes using temporary or permanent swales, slope drains (flexible down drains, pipe drops, or chutes), and interceptor ditches; which will be emplaced immediately after cutting or filling of the slopes and prior to revegetation.
- (i) Retain existing vegetation wherever possible and minimize its removal.
- (j) Hydroseed barren soil slopes with plant species that are fast-growing, with dense cover and fibrous root systems, adapted to poor soil conditions and to the local climate; that re-seed and re-grow well; that are fire and drought-resistant; and that are low-cost and easy to maintain. Examples: Annual Ryegrass, Grome, Fescue, Oats, Barley, Clover, Trefoil, California poppy.
- (k) Apply straw or other mulch after seeding and fertilizing barren slopes.
- (l) Erect berm or hay bale barriers to direct runoff away from cleared areas.
- (m) Cover stockpiles of soil.
- (n) An erosion and sedimentation control plan will be developed, using the Safety Element of the Contra Costa County General Plan (1991) and the Contra Costa County Grading Ordinance as guidelines. Caltrans may also have existing erosion control guidelines which could be consulted. The Erosion & Sedimentation Control Plan developed will include discussions of the elements: project Description; Existing Site Conditions; Adjacent Area; Soils; Critical Area (high-erosion areas); Erosion and Sediment Control Measures; Temporary & Permanent Stabilization Measures; Maintenance Measures; and Map (showing existing and final contours, existing vegetation, soils, existing and final drainage patterns, limits of clearing and grading, and a storm water management system).

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because implementation of the identified engineering techniques will eliminate erosion damage during Project construction.

(DEIR, Volume 3, pages III.H.12 and 13; and FEIR page II.115.)

***Significant Impact III.H.3:** Construction of the Project would occur in areas with unstable soils. Erosion and sedimentation could occur during construction. The most significant engineering consideration of soils in the Project area is their high shrink-swell potential. Many soils in the area experience considerable shrinkage with moisture loss. Roadways and utility lines would require special design in areas with soils that have moderate to high shrink-swell potential to prevent damage caused by these expansive soils. Construction could cause significant soil erosion in areas with unstable soils, mostly in the northern segment of the expressway. This would be a significant impact.*

Mitigation Adopted by the Authority

III.H.3. See mitigation measure III.H.2.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because implementation of the identified engineering techniques will eliminate the risk of landslides during Project construction.

(DEIR, Volume 3, pages III.H.12 and 13; and FEIR page II.115.)

***Significant Impact III.H.4:** Development of the Project including the widening of Marsh Creek Road could expose travelers to hazards such as ground shaking, liquefaction and flooding during a strong earthquake. The Project could be affected by strong ground shaking in the event of a significant earthquake. A moderate-sized earthquake (Richter magnitude 6 or less) on any local fault or a larger earthquake (Richter magnitude greater than 7) on any of the regional Bay Area faults could cause damaging ground shaking in the Project area. Earthquake ground shaking may cause secondary environmental effects such as liquefaction, ground failure, landslides and dam failure. Potential damage to roadways include roadbed settlement and damage to elevated structures. Ground settlement or liquefaction-induced ground failure could cause major cracking*

and offset of road surfaces. Table III.H.3 identifies liquefaction potential for the Project. Strong ground shaking could damage elevated roadway structures, causing road closure and, possibly, casualties. This would be a significant impact.

Mitigation Adopted by the Authority

III.H.4. Follow the performance standards listed below to mitigate earthquake-related impacts affecting development of a roadway in the right-of-way:

- (a) **Fault rupture.** Design roadways which cross surface fault traces with flexible materials to allow some lateral displacement or offset without rupturing severely, particularly overpass structures.
- (b) **Liquefaction.** Identify areas along the corridor that are prone to liquefaction during an earthquake, using existing data on soil types, depth to groundwater, and degree of saturation of soils during non-drought conditions. Avoid constructing the roadway in these areas where possible. Where this is not possible, excavate the natural soils and replace them with engineered fill.
- (c) **Ground shaking.** Avoid constructing elevated roadway structures across or close to known faults. Consider using engineered fill embankments rather than pile supports for any necessary roadway crossings, with culverts emplaced for stream crossings where appropriate.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure (b) is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will substantially lessen or the above-described adverse environmental effect because performance standards for development in the right-of-way require avoidance of areas prone to liquefaction.

(DEIR, Volume 3, page III.H.14.)

The Authority further finds that the mitigation measures (a) and (c) are incorporated in the proposed Bypass Project. The Authority further finds that these mitigation measures are feasible and will lessen but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or

eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact III.H.5: Construction of the Project would remove lands designated prime agricultural and lands of statewide importance. Road construction could affect agricultural productivity of prime soils (Grade 1 and 2) both directly and indirectly. Direct effects on soil include the removal of the uppermost organic layer, compaction or removal of the remaining soil horizons, and covering of the soil with aggregate and asphalt or concrete. These direct effects alter soil composition and structure and render the soil unusable for farming. In most cases this impact is irreversible and the soil would not be productive even if the road were to be removed at a later time. This would be a significant impact.

Mitigation Adopted by the Authority

III.H.5. Avoid where possible constructing the roadway through areas containing prime agricultural soils, identified using maps produced by the U.S. Department of Agriculture Soil Conservation Service.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project.

Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

9. Findings Concerning Hydrology, Drainage and Floodplain Impacts

The identified hydrology, drainage and floodplain impacts that are significant or potentially significant without mitigation, the adopted mitigation measures and findings of the Authority regarding those impacts with the adopted mitigation, are as follows:

Significant Impact III.I.1: Construction of the Project could result in the alteration of floodplain and flood routing. The primary hydrologic impact of the Project would be the potential alteration of the floodplain and flood routing. This could expose people to flood hazards, which would be a significant impact. Flooding beyond the capacity of the creek crossings, including those at San Creek and Marsh Creek, would result in water elevations above the stream banks with extensive sideways expansion of the water surface. The flood waters would form a slow-moving backwater condition adjacent to the stream which would correspond to the area delineated within the 100-year flood zone. Bridges, low bridges, and culverts would be designed to allow stream channels to flow at normal levels without excessive hindrance.

Mitigation Adopted by the Authority

III.I.1. Follow the performance standards listed below to mitigate the impacts of alteration of floodplain and flood routing resulting from development of a roadway in the Corridor:

- (a) Confirm and finalize delineation of the 100-year floodplain during preliminary engineering of the roadway, using aerial photographs and site surveys.
- (b) Use FEMA FIRM maps and on-site data to determine the hydraulic flood elevations for those portions of the proposed roadway that pass through floodplain.
- (c) Design bridges and culverts for stream and artificial drainage crossings of the roadway to allow passage of normal flows without excessive hindrance.

The measures taken to mitigate these impacts must comply with the Public Facilities/Services Element (7.8: Drainage and Flood Control) and Safety Element of the *Contra Costa County General Plan (1991)*. The State Route 4 Bypass Authority shall work with the Contra Costa County Conservation & Flood Control District to determine the extent of cumulative flood hazard posed by development of the East County Corridor roadway. The U.S. Army Corps of Engineers will be contacted for permission to do construction within the floodway of stream channels and their adjacent floodplain.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because implementation of the designated performance standards during project construction will eliminate flood hazard exposure.

(DEIR, Volume 3, page III.I.10; and FEIR page II.117.)

Significant Impact III.I.2: Construction of the Project would increase the amount of impervious surface in the region which would generate additional runoff that could affect groundwater resources. This would be a significant impact.

Mitigation Adopted by the Authority

III.I.2. Follow the performance standards listed below to mitigate the impacts of an increase in impervious surface in the region, which will increase storm water runoff and its vehicle-derived pollutants, due to development of the roadway:

- (a) Divert storm water runoff from roadway embankments to minimize entrainment of soil particles and adsorbed pollutants, particularly at the crossings of canals and streams, using temporary or permanent swales, slope drains (flexible down drains, pipe drops, or chutes), and interceptor ditches. Divert runoff to the nearest crossover point for discharge into existing drainage channels.
- (b) Use runoff detention basins to restrict peak flow from roadway and cleared right-of-way surfaces in areas where runoff is severe. Siting of detention basins may be accomplished using computer simulations for storm water runoff within the watersheds affected by the proposed roadway. On-site detention basins will be constructed following blue-green storage concepts such as using roadway embankments as flood control structures, ponding flows that exceed the pass-through rate used in the hydraulic design of culverts. Storm water detention ponds may also be constructed along portions of the roadway that cannot be elevated on embankments.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the diversion of stormwater runoff and use of detention basins will reduce runoff.

(DEIR, Volume 3, page III.I.11.)

Significant Impact III.I.4: Implementation of the Project could expose motorists to a project flood should reservoirs in the area be damaged by an earthquake and flood. There are several reservoirs in the Project area that could create a Project Flood if failure were to occur. A Project Flood would be of concern on the flat deltaic plain below a water storage site in the foothills of the Diablo Range. A Project Flood from the Marsh Creek Reservoir would create extensive

damage across much of the deltaic plain north and east of the reservoir. The currently proposed and authorized Los Vaqueros Reservoir is to have a 100,000 acre-feet capacity of water storage. The potential area of inundation by a Project Flood from this structure would include much of the Bypass portion of the Project. This would be a significant impact.

Mitigation Adopted by the Authority

III.I.4. Follow the performance standards listed below to mitigate the impact of an earthquake-induced flood from a damaged reservoir to motorists using the proposed roadway:

- (a) Using maps of potential inundation routes from the Marsh Creek, Los Vaqueros, and other existing or proposed reservoirs prepared by the Office of Emergency Response, determine which sections of the roadway will lie in the path of inundation.
- (b) Determine the potential hydraulic flood elevations from these inundation events, and elevate the roadway along these sections, using anticipated flow rates in the hydraulic design of culverts or bridges at these elevated sections.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because elevation of portions of the roadway will avoid flooding. (DEIR, Volume 3, page III.I.11.)

Significant Impact III.I.5: Construction of the Project would occur in areas of very slight topographic relief and would therefore have the potential to alter existing flow patterns of rainfall runoff. Additionally, construction near existing waterways could alter existing stream water flow patterns. This would be a significant impact.

Mitigation Adopted by the Authority

III.I.5. For any construction that would result in a change to designated floodplain, apply for and receive a permit from the Contra Costa County Water Conservation and Flood Control District before construction begins within the floodplain. For any alternation to a streambed, work with the California Department of Fish and Game to develop a Streambed Alteration Agreement that will minimize construction impacts to existing water

flow patterns. In addition to the measures described above, follow the performance standards listed below to further reduce the impacts of changes in existing flow patterns of streams and stormwater runoff due to development of the Project:

- (a) Before altering natural surface water flow patterns, obtain a Section 404 Dredge & Fill Permit from the U. S. Army Corps of Engineers, and a Streambed Alteration Agreement from the California Department of Fish & Game, as needed on a case-by-case basis. Follow the procedures developed by these agencies to prevent adverse impacts to water quality or habitat.
- (b) Divert storm water runoff from roadway embankments and from cut or fill slopes associated with construction using temporary or permanent swales, slope drains (flexible down drains, pipe drops, or chutes), and interceptor ditches.
- (c) Use runoff detention basins to restrict peak flow from roadway and cleared right-of-way surfaces. Siting of detention basins may be accomplished using computer simulations for stormwater runoff within the watersheds affected by the proposed roadway. On-site detention basins will be constructed following blue-green storage concepts such as using roadway embankments as flood control structures, ponding flows that exceed the pass-through rate used in the hydraulic design of culverts. Storm water detention ponds may also be constructed along portions of the roadway that cannot be elevated on embankments. Off-site detention will occur where open space and grassed areas are provided, in order to make use of natural flood control features and maximize aesthetic appeal. Detention basins will be sited on soils that allow for groundwater recharge.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the mitigation will reduce impacts resulting from change to flow patterns.

(DEIR, Volume 3, page III.I.12.)

10. Findings Concerning Biological Resources and Wetlands Impacts

The identified biological resources and wetlands impacts that are significant or potentially significant without mitigation, the adopted mitigation measures and findings of the Authority regarding those impacts with the adopted mitigation, are as follows:

Note: *Based on additional surveys, no evidence of caper-fruited tropidocarpum or recurved*

larkspur were located within the ROW. For this reason, no project related impacts to these species would occur and Impacts (as they appeared in the DEIR) III.J.1 and III.J.2 have been removed.

Because the Project, Cowell, and Nunn "Mitigated" Alternatives were designed to avoid the seasonal pond located along the tributary to Kellogg Creek, no direct impacts to this habitat will occur. For this reason, impacts relating to Longhorn fairy shrimp, Vernal pool fairy shrimp, California linderiella, Curve-foot hygrotus diving beetle, and Ricksecker's water scavenger beetle have been combined to form the Revised Impact III.J.1.

The remaining Impacts and Mitigation Measures have been renumbered accordingly.

San Francisco forktail damselfly has been delisted by the federal government (now considered a category C3c Candidate) and no longer receives recognition as a special status species under CEQA. For this reason, impacts to this species (if present) are considered adverse and not significant.

The Project, Cowell, and Nunn "Mitigated" Alternatives have been designed to avoid the sandstone rockoutcrop located south of Marsh Creek Road. Project related impacts to this formation are now considered adverse, but not significant, and mitigable.

Significant Impact III.J.1: Construction of the Project would indirectly affect the seasonal pond located along the tributary to Kellogg Creek. This area provides suitable habitat for Longhorn fairy shrimp (listed as endangered by the federal government), Vernal pool fairy shrimp (listed as endangered by the federal government), California linderiella (listed as threatened by the federal government), Curve-foot hygrotus diving beetle (listed as a category 2 Candidate by the federal government), Ricksecker's water scavenger beetle (listed as a category 2 Candidate by the federal government), and California tiger salamander (refer to Impact J.III.3 for a discussion of potential impacts to California tiger salamander, listed as a category 1 Candidate by the federal government). In the absence of specific surveys, these species are presumed to be present at this location.

The Project, Cowell, and Nunn "Mitigated" Alternatives have been designed specifically to avoid this habitat. Indirect impacts to these species from ROW construction could include changes in hydrology, increased erosion, accidental discharge of deleterious fluids, or incidental intrusion by construction workers or equipment.

Mitigation Adopted by the Authority

III.J.1-I. The seasonal pond located along the tributary to Kellogg Creek will be avoided by adoption of either the Project, Cowell, or Nunn "Mitigated" Alternatives. Each of these alignments have been designed to avoid this habitat, therefore, direct impacts to

these species (if present) will be avoided. Standard provisions to control construction activities, protect water quality, and provide for dust and erosion control as well as the designation of an Environmentally Sensitive Areas (ESAs) to protect this habitat will be implemented to substantially reduce or eliminate potential indirect impacts. Additional measures which will be instituted include clearly flagging the limits of this habitat, revegetating disturbed and adjacent areas with native species, utilizing erosion control techniques to reduce siltation and sedimentation of low lying areas, watering of the construction area to reduce dust impacts, and providing an on-site biologist to ensure avoidance and to implement any necessary corrective measures during the construction period.

Application of chemicals and intrusion during construction and operational phases of the ROW shall be prohibited to maintain the integrity of this habitat.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the seasonal pond located along the Kellogg Creek tributary will be avoided.

(FEIR, page II.78.)

***Significant Impact III.J.3:** Construction of the Project would indirectly affect breeding habitat and could directly or indirectly cause destruction aestivation habitat of individuals of California tiger salamander. Potential breeding habitat for this species occurs south of Marsh Creek Road where a portion of the tributary to Kellogg Creek ponds water. In the absence of specific surveys, this species is presumed to be present at this location. Potential aestivation habitat includes grassland or other areas of low-growing vegetation with ground squirrel burrows within roughly one-mile of the breeding habitat. Suitable aestivation may include portions of the "Mitigated" Proposed, Nunn, and Cowell Alternatives. In general, aestivation habitat is not present within agricultural areas due to regular ground disturbance and application of herbicides and pesticides.*

Indirect impacts to California tiger salamander breeding habitat from ROW construction could include changes in hydrology, increased erosion, accidental discharge of deleterious fluids, or incidental intrusion by construction workers or equipment. Direct impacts to this species could include destruction of aestivation habitat and possibly individuals if aestivating within the ROW at the time of construction. This would be a significant impact.

Mitigation Adopted by the Authority

III.J.3. Implement Mitigation Measures III.J.1.

In addition, the Authority shall consult with the USFWS and CDFG to determine if surveys for suitable Tiger salamander aestivation habitat occurs within the Project, Cowell, or Nunn "Mitigated" Alternatives.

Based on results of surveys and/or consultation, the Authority shall implement measures to reduce identified impacts to aestivation habitat (if any) as specified by USFWS and CDFG. This may include limiting construction within these areas to defined seasons, detailed construction monitoring, and/or acquisition of additional suitable aestivation habitat.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the seasonal pond located along the Kellogg Creek tributary will be avoided.

(FEIR, page II.79.)

***Significant Impact III.J.4:** Construction of the Project would affect habitat and could directly or indirectly cause destruction of individuals of California red-legged frog (*Rana aurora draytonii*). In the absence of specific surveys, this species is assumed to occur along the tributary to Kellogg Creek located south of Marsh Creek Road and along the portion of Marsh Creek within the ROW. Suitable habitat for this species is absent from the remaining portions of the ROW. The Project, Cowell, and Nunn "Mitigated" Alternatives have been specifically designed to avoid direct impacts to the seasonal pond located along the tributary to Kellogg Creek and to minimize impacts to Marsh Creek. Impacts to red-legged frog from the project could be direct destruction of individuals of this species (if present) and the loss of suitable habitat (Marsh Creek).*

Suitable habitat may be also impacted by changes in hydrology, increased erosion, accidental discharge of deleterious fluids, or incidental intrusion by construction workers or equipment. This would be a significant impact.

Mitigation Adopted by the Authority

III.J.4-I. Specific surveys to determine the status of this species will be conducted from February through May by a qualified biologist hired by the Authority prior to ROW

construction. Documentation of the survey including methodology, textual discussion of individuals or populations of this species (if present) will be forwarded to the USFWS and CDFG for their review. If accepted survey methodologies are adhered to and this species is not located within the ROW no impact would occur and no further mitigation is necessary.

III.J.4-II. Adoption of the Project, Cowell, or Nunn "Mitigated" Alternative would avoid direct impacts to the seasonal pond located along the tributary to Kellogg Creek and diminish impacts to habitat located along Marsh Creek.

If individuals or populations of this species are present and will be impacted by ROW development, the Authority shall initiate informal consultation with USFWS and CDFG. The Authority shall prepare and implement a mitigation program prior to the initiation of any ground clearing, grading, construction, or other activities which could disrupt this species. The mitigation program may include, but not be limited to, the following standards as required by USFWS and/or CDFG:

The mitigation plan shall provide for no net loss of California red-legged frog currently utilizing the project ROW.

Mitigation shall follow the hierarchy outlined in Section 15370 of the CEQA Guidelines which directs mitigation to:

- (a) Avoid the impact altogether by not taking certain action.
- (b) Minimize impacts by limiting the degree of magnitude of an action and its implementation.
- (c) Rectify the impact by repairing, rehabilitating, or restoring the impacted environment.
- (d) Reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action.
- (e) Compensate for the impact by replacing or providing substitute resources of environments.

Any mitigation plan shall be monitored annually for five years, or an amount required by USFWS and CDFG, after implementation to assure the success of the mitigation. If at any point during the monitoring period, the mitigation plan is judged to have not been successful, the mitigation action shall be re-initiated, after modification as necessary, and monitored for a succeeding five-year period.

If mitigation is not accomplished within the area affected, the mitigation shall take place adjacent to existing significant populations of this species, if any such areas exist and are not proposed for elimination. In general, off-site mitigation should occur as close to the affected habitat as possible. The USFWS and CDFG may require that these areas be acquired by the Authority and be set aside in perpetuity.

Application of chemicals and intrusion during construction and operational phases of the ROW shall be prohibited to maintain the integrity.

Standard provisions to control construction activities, protect water quality, and provide for dust and erosion control as well as the designation of an Environmentally Sensitive Areas (ESAs) to protect habitat for this species will be implemented to substantially reduce or eliminate potential indirect impacts. Additional measures which will be instituted include temporal separation of construction activities and the breeding season, clearly flagging the limits of this habitat, revegetating disturbed and adjacent areas with species native to the area, utilizing erosion control techniques to reduce siltation and sedimentation of low lying areas, watering of the construction area to reduce dust impacts, and providing an on-site biologist to ensure avoidance and to implement any necessary corrective measures during the construction period.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the seasonal pond located along Kellogg Creek will be avoided and diminish impacts to habitat along Marsh Creek.
(FEIR, pages II.79 through 81.)

Significant Impact III.J.5: Construction of the Project would affect habitat and could directly or indirectly cause destruction of individuals of Western spadefoot toad (*Scaphiopus hammondi*). In the absence of specific surveys, this species is assumed to occur along the portion of Marsh Creek within the ROW. Suitable habitat for this species is absent from the remaining portions of the ROW. Impacts to western spadefoot toad from the project could include direct destruction of individuals of this species (if present) and the loss of suitable habitat (Marsh Creek). Suitable habitat may be also impacted by changes in hydrology, increased erosion, accidental discharge of deleterious fluids, or incidental intrusion by construction workers or equipment. This would be a significant impact.

Mitigation Adopted by the Authority

III.J.5. Measures to reduce the identified impact to below the level of significance are identical to those described under Mitigation Measure III.J.4.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the seasonal pond located along Kellogg Creek will be avoided and diminish impacts to habitat along Marsh Creek.

(FEIR, page II.81.)

*Significant Impact III.J.6: Construction of the Project would affect habitat and could directly or indirectly cause destruction of individuals of Northwestern pond turtle (*Clemmys marmorata marmorata*). Northwestern pond turtles were located along Sand and Marsh creeks in 1988. Impacts to northwestern pond turtle from the project could be direct destruction of individuals of this species and the loss of suitable habitat along Sand and Marsh creeks. Creeks may be also impacted by the removal of trees along creeks which would increase water temperature, changes in hydrology, increased erosion, accidental discharge of deleterious fluids, or incidental intrusion by construction workers or equipment. This would be a significant impact.*

Mitigation Adopted by the Authority

III.J.6-I. Prior to construction, specific surveys to determine the status of this species within the ROW will be conducted. Documentation of the survey including methodology, textual discussion of individuals or populations of this species (if present) will be forwarded to the CDFG and USFWS for their review. If accepted survey methodologies are adhered to and this species is not located within the ROW no further mitigation is necessary.

III.J.6-II. Adoption of the Project, Cowell, or Nunn "Mitigated" Alternative would diminish impacts to Marsh Creek (because the proposed Marsh Creek Road Interchange would be located away from this drainage). Standard provisions to control construction activities, protect water quality, and provide for dust and erosion control as well as the designation of an Environmentally Sensitive Areas (ESAs) to protect this habitat will be implemented to substantially reduce or eliminate potential indirect impacts. Additional measures which will be instituted include clearly flagging the limits of this habitat, revegetating disturbed and adjacent areas with native species, utilizing erosion control techniques to reduce siltation and sedimentation of low lying areas, watering of the construction area to reduce dust impacts, and providing an on-site biologist to ensure

avoidance and to implement any necessary corrective measures during the construction period.

Streams supporting turtles will be temporarily dammed both up- and down-stream of construction and turtles relocated upstream of construction activities by a qualified biologist. Temporary dams will remain in place until construction activities have ceased.

Additional mitigation may include acquisition of suitable habitat that will be set aside in perpetuity (by the Authority) or enhancement of suitable habitat proximate to the ROW. The mitigation lands should be geographically proximate to the project right-of-way and be selected by a qualified biologist. A monitoring plan to ensure the success of the mitigation bank or enhancement will be implemented for a minimum of five years or a period specified by CDFG or USFWS.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the northwestern pond turtle habitat will be protected through implementation of the specified design and survey measures.

(FEIR, page II.81.)

*Significant Impact III.J.7: Construction of the Project would affect habitat and could directly or indirectly cause destruction of individuals of California Horned Lark (*Eremophila alpestris actia*). Individuals of this species were located in the grasslands north of Balfour Road within the ROW. Additional suitable habitat includes the grassland areas west of Neroly Road, south of San Jose Avenue, between Dry Creek and Marsh Creek, and south of Marsh Creek Road. Project related impacts to California horned lark could be direct destruction of individuals of this species and the loss of suitable nesting habitat north of Balfour Road, west of Neroly Road, south of San Jose Avenue, between Dry Creek and Marsh Creek, and south of Marsh Creek Road. In addition, ROW development could increase the mortality of juvenile and possibly adult California horned lark from automobiles, thus decreasing population numbers in this area. This would be a significant impact.*

Mitigation Adopted by the Authority

III.J.7. Prior to construction, specific surveys to determine the status of this species within the ROW will be conducted. Documentation of the survey including methodology, textual discussion of individuals or populations of this species (if present) will be forwarded to

USFWS and CDFG for their review. If accepted survey methodologies are adhered to and this species is not located within the ROW no further mitigation is necessary.

Construction (in areas found to support horned lark during the pre-construction surveys) will not proceed until after horned lark nesting season. If individuals or populations of horned lark are remain within the ROW after nesting, the Authority will hire a qualified biologist institute exclusionary methods to remove and keep horned larks out of the construction zone. This will include a monitoring plan to ensure the success of the mitigation.

Standard provisions to control construction activities and provide for dust and erosion control as well as the designation of an Environmentally Sensitive Areas (ESAs) to protect horned lark habitat will be implemented to substantially reduce or eliminate potential indirect impacts. Additional measures which will be instituted include temporal separation of construction activities and horned lark nesting season, clearly flagging the limits of this habitat, revegetating disturbed and adjacent areas with native species, watering of the construction area to reduce dust impacts, and providing an on-site biologist to ensure avoidance and to implement any necessary corrective measures during the construction period.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the construction constraints will ensure protection of Horned Larks and their habitat or mitigation for any loss.
(FEIR, page II.82.)

***Significant Impact III.J.8:** Construction of the Project could indirectly affect habitat of Pallid bat (*Antrozous pallidus*) and Townsend's western big-eared bat (*Plecotus townsendii townsendii*). The sandstone caves located south of Marsh Creek Road were surveyed to locate sign or other evidence of use by bats for roosting. This area has a relatively low levels of human use, which would make it more desirable or suitable for roosting by bats. Bat guano and sign was located in a few of the sandstone caves within the ROW.*

Of the two special status bat species that have potential to occur within the ROW (Townsend's western big-eared bat and Pallid bat) the sandstone caves located south of Marsh Creek Road provide habitat more suitable for Pallid bat due to the xeric environs and human intrusion (although at low levels) to the area. The likelihood of occurrence in other portions of the ROW is considered low because of the absence of suitable habitat.

Project related impacts to these bats would include increased human disturbance, increased noise and pollutants generated by ROW construction and use, and destruction and/or degradation of surrounding grasslands. This would be a significant impact.

Mitigation Adopted by the Authority

III.J.8. Adoption of the Project, Cowell, or Nunn "Mitigated" Alternative would avoid the sandstone caves that provide roosting habitat for this bat and would eliminate direct impacts to this species (if present). Although adoption of these alternatives would avoid direct impacts to this species, ROW development in close proximity to these caves would result in increased noise and human disturbance and may lead bat abandonment of this habitat.

The Authority will coordinate with the resource agencies to determine any additional acceptable mitigation. This may include acquisition of suitable habitat that will be set aside in perpetuity (by the Authority). The mitigation lands should be geographically proximate to the project right-of-way and be selected by a qualified biologist. A monitoring plan to ensure the success of the mitigation bank will be implemented for a minimum of five years or a period specified by USFWS and CDFG.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the construction constraints will ensure protection of the bats and their habitat or mitigation for any loss.

(FEIR, page II.83.)

***Significant Impact III.J.9:** Construction of the Project would affect habitat and could directly or indirectly cause destruction of individuals of San Joaquin kit fox (*Vulpes macrotis mutica*). Although specific surveys to determine kit fox use of the ROW have not been performed, the USFWS has stated that the areas south of State Route 4 lie within the northern kit fox range and provide suitable habitat for this species. For this reason, it was concluded that the ROW is within the home range of one or more kit fox and provides potential hunting and denning habitat for this listed species. Any destruction or degradation of this habitat will likely result in a finding of "take," as defined in Section 9 of FESA, by the USFWS. Impacts to San Joaquin kit fox from the project could include direct destruction of individuals of this species and loss of foraging and denning habitat. ROW development may increase mortality of San Joaquin kit fox from direct automobile hits and from a decrease in territory size, resulting in a decrease in population numbers. This would be a significant impact.*

Mitigation Adopted by the Authority

III.J.9-I. The Authority shall survey the ROW according to accepted USFWS and CDFG methodologies (preferred survey season occurs between March 1 and July 31). Results of these surveys will be submitted to USFWS and CDFG. If no evidence of this species is located within the ROW no further mitigation may be required.

III.J.9-II. The ROW will be surveyed within 60 days prior to initiation of construction by a qualified biologist (preferred survey season occurs between March 1 and July 31). Results of this survey will be submitted to USFWS and CDFG.

Dens located within close proximity to the ROW will be protected by fencing about a predetermined buffer zone. Flagging, signing, and exclusion of all construction and operational disturbances will be required. If destruction of a den(s) cannot be reasonably avoided, den removal should be accomplished according to USFWS guidelines.

The amount of San Joaquin kit fox habitat lost to development of ROW, as determined by the pre-construction kit fox survey, would require habitat compensation which offsets the area removed by development through protection/restoration of a suitable area in perpetuity (permanently dedicated by the Authority to public ownership and management or through establishment of a private, non-profit land trust or land conservancy organization to take legal title to mitigation lands and be responsible for their maintenance). Replacement of dens destroyed through site development would also likely be required. The replacement ratio (area protected/restored: area lost) may be set by the resource agencies at three-to-one (that is, for every one acre of kit fox habitat destroyed three acres of suitable habitat will be acquired by the Authority, unless otherwise stipulated by the USFWS and CDFG). Mitigation lands will consist of one contiguous parcel of high quality kit fox habitat in the immediate vicinity. Such an area, which would include flat or low rolling hills near known kit fox populations.

The Authority in consultation with the USFWS and CDFG will determine success criteria for mitigation lands. The Authority will be responsible for monitoring mitigation lands for kit fox habitat suitability and use and will set aside an operations and maintenance budget sufficient to meet the needs of the mitigation and monitoring program for a minimum of ten years. Annual monitoring reports will be submitted to the USFWS and CDFG. If the success criteria agreed on are not met the Authority will be responsible for corrective measures outlined by the USFWS and the CDFG.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

***Significant Impact III.J.10:** Construction of the Project would impact seasonal wetlands. The loss or degradation of these communities would be considered significant because of their local and regional scarcity, potential classification as jurisdictional wetlands, ongoing community depletion, increased threats to dependent special status species, and their importance to dependent common plant and wildlife species. Alteration of wetlands associated with culverting and cut and fill activities could significantly impact breeding amphibians, insects, and waterfowl. Similarly, increasing the amount of impervious surfaces (roadways) present within the watershed of adjacent wetlands would both affect the volume and contaminant loads of waters entering these wetlands, thereby degrading the area and potentially resulting in the functional alteration of these wetlands. The removal, filling, or alteration to these rare communities would be considered a significant impact by the CDFG, the USFWS, and the Corps. Wetland communities are severely restricted in range and recreation is not currently a viable alternative. For this reason any loss of such communities would constitute a significant impact.*

Mitigation Adopted by the Authority

III.J.10. Partial mitigation may be achieved through a synthesis of both retention/enhancement of portions of the existing wetlands and in-kind enhancement mitigation of other wetland communities in the immediate vicinity to achieve an overall "no net loss" of wetland acreage or value. Three levels of mitigation are considered in this program: 1) avoidance of wetlands to the extent possible, 2) creation of new wetlands for those areas lost or altered, and 3) acquisition and preservation of mitigation lands that contain high quality, in-kind wetlands. The plan proposes the following:

- (a) Adopt the Project, Cowell, or Nunn Mitigated" alignment to avoid filling or excavation of existing wetlands, to the extent possible (these would avoid the seasonal pond located along the tributary to Kellogg Creek).

- (b) Road crossings over open channels and drainage ditches should be bridged when possible.
- (c) Establish a minimum setback or buffer between the development area (edge of grading, pavement and structures) and the edge of existing wetlands which are proposed to be preserved. The width of this setback shall vary based on the quality of the wetland and the resource that is being protected. In general, the setbacks should include as much of the natural watershed as possible.
- (d) All wetland vegetation and hydrology of areas preserved shall be maintained.
- (e) Require restoration or creation of new wetlands at a ratio of 3:1 (or an amount determined by the resource agencies) for any acreage of wetland that is lost or altered by development. General guidelines for selecting areas for wetlands creation area are as follows:
 - (i) Locate near or adjacent to existing manmade drainages, ponds, and seasonal wetlands. With proper excavation and contouring, channels and existing pond areas can provide a source of water during winter and spring seasons.
 - (ii) Locate where elevations are low and where wetlands can either be protected or buffered. Such areas would be least impacted by human activity and would thus be more inviting for wildlife use.
 - (iii) Mitigation sites shall be located outside of developed areas and (if possible) linked with appropriate natural travel corridors to facilitate wildlife movement and to minimize isolation and fragmentation of the habitats.
 - (iv) Created wetlands shall be revegetated with native wetland species.
 - (v) The plan shall include an implementation schedule relative to project construction (showing that plan approval would occur and wetlands creation begin prior to the loss of existing wetlands).
 - (vi) The use of non-biodegradable herbicides and pesticides shall be avoided in areas of biological sensitivity.
- (f) Alternatively, the Authority may compensate for wetland loss through acquisition/protection of a suitable mitigation area (one that contains wetlands of similar function and value) in perpetuity. Replacement ratio (area protected: area lost) should be set at 1:1.

- (g) The Authority, in consultation with USFWS, CDFG, and Corps, shall locate a suitable mitigation area and purchase this land prior to construction. This land would then be permanently dedicated by the Authority to public ownership and management, or the Authority, could establish a private, non-profit land trust or land conservancy organization to take legal title to mitigation lands and be responsible for their maintenance. In either case, an operations and maintenance budget sufficient to meet the needs of the organization for five years (or a period determined by the resource agencies) should be established. This ten year period corresponds with typical biological monitoring periods imposed by state and federal regulatory agencies.
- (h) The Authority shall monitor the use and condition of the mitigation lands for a minimum period of five years or a period specified by state and federal regulatory agencies. Annual reports documenting general condition, habitat (vegetation) characterization, and wildlife use will be submitted to USFWS, CDFG, and Corps for their review.

The final mitigation plan for wetlands restoration shall be based on the final roadway alignment. The final mitigation plan shall be submitted as part of the Project construction drawings or prior to approval of a grading permit, whichever occurs first. Modifications of the final design may be required as a result of permit requirements imposed by the Corps or CDFG. The drawings may include the following components:

- (a) A plan identifying existing topography and proposed grading. Grading shall identify proposed excavation and fill as well as earth movement quantities. The grading plan shall also identify final hydrology and drainage supported by engineering calculations.
- (b) Cross-sections of proposed grading for wetlands restoration.
- (c) A planting program for all wetland areas and surrounding buffer zones. Selected species shall be consistent with the guidelines established by planting list approved by the Corps and the CDFG (if applicable).
- (d) The final program shall include site construction techniques for resource protection. Techniques shall include fencing around existing wetlands and detailed erosion and sediment control measures.
- (e) A final irrigation plan that will include specifications on installation and a schedule identifying the frequency of irrigation for each selected area.

A monitoring and management plan shall be submitted with the final mitigation plan. This program shall identify monitoring and management techniques for a period of five years (or a period determined by the resource agencies) following implementation. The monitoring and management plan shall include the following components:

- (a) The plan shall establish success criteria and describe steps to be taken to replace vegetation or modify wetland management not meeting the success criteria.
- (b) Plant survival shall be evaluated with field surveys. Trees and shrubs shall be tagged during the first year of implementation, cataloged in a data base, and surveyed for survival, growth and vigor. Grasses and forbs shall be surveyed for species richness and cover.
- (c) Monitoring reports are to be prepared annually. At the end of the monitoring period, a compilation of the annual reports shall be submitted to the Corps and CDFG. The annual reports shall include monitoring data and shall discuss any corrective actions needed. At the end of the ten-year monitoring period, the report shall evaluate the success of the mitigation program against the initial goals and purpose. Appropriate corrective actions shall be taken if the initial goals and purpose have not been met.

Management techniques for wetland development shall include recommendations for hydrology/water levels and flushing.

In addition to the mitigation outlined above, the Authority is currently coordinating with the Corps to determine the extent of their jurisdiction pursuant to Section 404 of the Federal Clean Water Act. Corps permitting for the roadway may include a series of permits. For example, separate nationwide permits for stream corridors and possibly an individual permit for wetlands and/or waters that support federally listed species. The following measures may be required by the Corps.

- (a) Conduct a Section 404 (b)(1) alternatives analysis for areas covered under an individual permit. In order for the Corps to issue an individual permit to allow the filling to proceed, it must be demonstrated that there are no practicable alternatives, either on- or off-site, that would avoid or minimize filling of wetlands, such as through Project alteration.
- (b) If no such alternatives are found, the Corps' would require mitigation for the portion of wetland acreage lost or degraded to development. This could be at least partially accomplished by purchasing, enhancing/restoration, monitoring, and dedicating as permanent open space lands containing similar wetlands in the vicinity of the proposed expressway. A detailed evaluation of the hydrological

effects of the proposed Project on adjacent wetlands would likely also be required to ensure adequacy of this mitigation because of the development's location within at least a portion of these wetland's watershed.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact III.J.11: Construction of the Project would impact riparian corridors. Although implementation of the Project would result in the loss of approximately 1.04 acres of stream channel, only 0.6 acres of stream channel (along Sand Creek, the tributary to Deer Creek, and Marsh Creek) support riparian vegetation. The remaining channels support only herbaceous or weedy vegetation. The loss or degradation of riparian vegetation would be considered significant because of its local and regional scarcity, potential classification as jurisdictional wetlands or waters, ongoing community depletion, increased threats to dependent special status species, and its importance to dependent common plant and wildlife species. Major impacts to riparian woodlands include direct removal of vegetation; lining of stream channels; loss of canopy complexity within the woodland; reduction of nesting, resting, and perch sites; reduction in standing crop of plant species used for forage and browse, and mast crop (acorns) produced by oaks; and obstruction of animal feeding trails and movement patterns. Increasing the amount of impervious surfaces (roadways) present within the watershed of riparian corridors would both affect the volume and contaminant loads of waters entering these drainages, thereby degrading the area and potentially resulting in the functional alteration of these waters. The removal, filling, or alteration to these rare communities would be considered a significant impact by the CDFG, the USFWS, and the Corps.

Mitigation Adopted by the Authority

III.J.11. Four levels of mitigation are considered as part of this plan: 1) tree preservation techniques, 2) avoidance of significant trees when feasible, 3) a revegetation program, and 4) habitat acquisition. This plan proposes the following:

- (a) Conduct surveys to characterize riparian habitats that will be lost or degraded due to project implementation. These surveys shall include documentation of all native trees six inches at diameter breast height (dbh) or greater which would be directly or indirectly affected due to Project. This survey should be conducted by a qualified plant ecologist, and should include identification to species, the diameter breast height of each individual, condition of tree, location on a topographic map, and general nature of impact each tree will receive due to the proposed Project.
- (b) When possible, reduce significant tree removal or impact.
- (c) Obtain the necessary permission for vegetation removal from the City of Brentwood (depending on location of removed vegetation).
- (d) Trees to be retained within the Project right-of-way should be fenced off at a distance of 1.5 times the drip-line (approximately equal to the area covered by the tree's canopy) prior to any construction related activities in order to prevent accidental damage due to construction activities. These fences should remain in place until all construction related activities have ceased.
- (e) Irrigation or potential runoff associated with the proposed Project should be diverted away. Revegetate along the roadway system where grading (cut and fill) results in tree removal.
- (f) Require replanting at a ratio of 1:1 for native trees lost that are less than 2 inches in trunk diameter. In general, require a 3:1 replanting (or a ratio determined by responsible agencies) for loss of native trees with trunk diameters of 2 inches or greater. Replacement vegetation should be planted in various age and size classes to mimic natural community structure.
- (g) Plant a combination of species, primarily focusing on oaks and natives. Trees shall be planted at a combination of sizes, ranging from seedlings on up. Spacing shall range from 5 feet to 15 feet, depending on species, location and size of initial planting.
- (h) An on-site acorn and cutting collection system shall be implemented. Acorns and cuttings shall be collected from the immediate area during selected times of the year and used for establishment of seedlings/saplings. This collection system shall be a priority as use of on-site material promotes revegetation with native plantings and genetic sustainability within the population.

The final mitigation plan for tree/vegetation planting shall be based on the final roadway design layout. The final mitigation plan shall be submitted as part of the Final design process or prior to approval of a grading permit for improvement plans, whichever occurs first. Prior to implementation, the final plan shall be approved by the City of Brentwood, CDFG, and Corps. This plan may include the following components, as required by the permitting agencies:

- (a) A plan identifying existing topography and proposed grading. Grading shall identify proposed excavation and fill as well as earth movement quantities. The grading plan shall also identify final hydrology and drainage supported by engineering calculations.
- (b) A planting program. Selected species shall be consistent with the guidelines established by a planting list approved by the CDFG.
- (c) The final program shall include site construction techniques for resource protection. Techniques shall include fencing around existing trees proposed for preservation at a distance of 1.5 times the distance from the trunk to the drip line, establishment of a root protection zone for trees and detailed erosion and sediment control measures.
- (d) Proposed grade changes within tree root zones shall be reviewed to identify trees that could be jeopardized in the long term (that would die slowly following construction) and implement measures to prevent damage to those trees.
- (e) Construction around trees shall be monitored periodically by a qualified ecologist to ensure that trees are not damaged or removed unnecessarily.
- (f) A final irrigation plan that will include specifications on installation and a schedule identifying the frequency of irrigation for each selected area.
- (g) Long-term irrigation or potential runoff associated with the proposed development shall be diverted away from retained oaks to guard against fungal root infections.
- (h) Replacement trees shall be planted as contiguous habitat, and not as isolated, scattered trees, to provide similar community structure and habitat value for wildlife.
- (i) The Authority shall provide calculations of 1) riparian woodland directly and indirectly impacted due to Project implementation, 2) riparian woodland retained within the corridor, 3) riparian woodland proposed to be created (this calculation

shall not include areas planted with trees not native to the area or trees planted along the roadway), and 4) riparian woodland acquired and preserved as a mitigation area.

A monitoring and management plan shall be submitted with the final mitigation plan. This program shall identify monitoring and management techniques for a period of five years (or a period determined by responsible agencies) following implementation. The monitoring and management plan may include the following components:

- (a) The plan shall establish success criteria and describe steps to be taken to replace vegetation not meeting the success criteria.
- (b) Plant survival shall be evaluated with field surveys. Trees and shrubs shall be tagged during the first year of implementation, cataloged in a data base, and surveyed for survival, growth and vigor.
- (c) Monitoring reports are to be prepared annually. At the end of the monitoring period, a compilation of the annual reports shall be submitted to the City of Brentwood, Corps, and CDFG. The annual reports shall include monitoring data and shall discuss any corrective actions needed and/or taken. At the end of the monitoring period, the report shall evaluate the success of the mitigation program against the initial goals and purpose. Appropriate corrective action shall be taken if the initial goals and purpose have not been met.

In addition to the above measures, the Project applicant shall enter into a "Streambed Alteration Agreement" (SAA) with the CDFG pursuant to Fish and Game Code 1601-1603. This agreement is necessary to allow alteration and bridging of creeks under current corridor plans. The CDFG will only grant a SAA once all other permits (for example Corps, USFWS) and certifications are obtained. Construction would not be permitted by the CDFG until a SAA is executed.

- (a) A formal creek realignment and revegetation plan should be submitted to the CDFG for their review and approval. Such a plan should include planned dimensions of modified watercourses; documentation of use of specific native species of trees, shrubs, and herbs as riparian vegetation; methods for bank stabilization/erosion control both during construction and operational phases; methods for maintaining plantings in a healthy state given the soil characteristics; appropriate contingency plans; maintenance requirements; and monitoring periods and conditions. (Note: species used for the revegetation of individual creeks should be consistent with native species currently occurring along these waterways). If bank stabilization or food control measures are deemed necessary, creek modifications should be devised on a creek-by-creek basis. Lining of waterways with concrete should be avoided because of the detrimental effect this has on the aquatic environment. Other techniques that could be used instead of

concrete include wood crib walls and rock and earth filled gabions that provide a medium for native plantings.

- (b) In addition to the above mitigations, streams and creeks may also be classified as "waters of the US" subject to Corps jurisdiction and would require the above mitigations/permits in addition to those listed under Mitigation Measure III.J.15 above.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact III.J.13: Development of the Project would result in a loss of non-native grassland. Project development would result in a loss of a substantial number of acres of non-native grassland. Grasslands within the ROW have potential to support San Joaquin kit fox (a state and federally listed species). For this reason, loss or degradation of grasslands south of Marsh Creek Road are considered potentially significant. Refer to Impact III.J.9 for details concerning impacts to San Joaquin kit fox.

Mitigation Adopted by the Authority

III.J.13. Implementation of measures identified under Mitigation Measure III.J.9 would reduce project related impacts to non-native grasslands to below the level of significance.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate

and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the measures to protect and mitigate for the Kit fox will reduce the importance of destruction of non-native grasslands.
(FEIR, page II.91.)

Significant Impact III.J.16: Development of the project corridor could facilitate increased growth in eastern Contra Costa County, which could increase significant impacts to biological resources. Examples of such impacts include direct removal or destruction of sensitive habitats and/or species and increased barriers to wildlife movement corridors. These impacts would be considered significant.

Mitigation Adopted by the Authority

III.J.16. Condition approval of any development project in the State route 4 Bypass area, whether by the County of Contra Costa or the Cities of Antioch or Brentwood, upon provision of mitigation measures to reduce identified biological resource impacts to below the level of significance.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the relevant jurisdictions have been directed to mitigate impacts and identify biological resources.
(FEIR, page II.92)

With regard to this mitigation measure, the Authority also finds that the Project approval process is within the responsibility and jurisdiction of the County of Contra Costa or Cities of Antioch or Brentwood, and not the Authority. Each of these jurisdictions has adopted this mitigation or can and should adopt this mitigation.

11. Findings Concerning Cultural Resources Impacts

The identified cultural resources impacts that are significant or potentially significant without mitigation, the adopted mitigation measures and findings of the Authority regarding those impacts with the adopted mitigation, are as follows:

Significant Impact III.K.1: Although no archaeological or subsurface cultural resources of significance or potential significance were observed along the segments of the Project accessible to field reconnaissance, impacts to undiscovered prehistoric resources could occur through implementation of the Project. Undiscovered cultural resources could exist in the portions of the

Project that were not surveyed. In addition, many segments of the Project that were surveyed were covered by a thick blanket of tall grasses and weeds, which severely impaired visual inspection of the ground surface. Based on the natural topography, it is unlikely that significant cultural resources exist within these portions of the Project area. However, due to the generally poor surface visibility, the potential for discovering cultural resources still exists in these areas. This would be a significant impact.

Mitigation Adopted by the Authority

III.K.1(a). Retain the services of a qualified archaeological consultant to serve as an on-site archaeological monitor to provide appropriate consulting services throughout the course of grading and other topographic modification associated with the proposed Project. The principal task of the designated archaeological consultant would be to insure that no significant cultural resources of either prehistoric/protohistoric or historic period age or character would suffer adverse impacts as a consequence of planned construction within the Project right-of-way.

III.K.1(b). If prehistoric and/or historic cultural resources are discovered during construction work avoid damaging identified archaeological sites to the extent feasible. Examples of such methods include:

- (i) avoid identified archaeological sites;
- (ii) "capping" or covering identified archaeological sites with a layer of soil before building any homes, roadways, or other structures (capping may be used where the soils to be covered will not suffer serious compaction, the covering materials are not chemically active, the site is one in which the natural processes of deterioration have been effectively arrested, and the site has been recorded); or
- (iii) deeding identified archaeological sites into permanent conservation easements.

III.K.1(c). If archaeological resources are discovered during development, suspend all work in the immediate vicinity (approximately 250 feet) and avoid altering the materials and their context pending site investigation by qualified professionals. Use a qualified archaeologist or cultural resources consultant to assess the materials and determine their significance. If the qualified professional determines that the site will yield new information or important verification of previous findings, the sites should not be destroyed. Construction work should not commence again until the qualified professional has been given an opportunity to examine the findings, assess their significance, and offer proposals for any additional exploratory measures deemed necessary for the further evaluation of and/or mitigation of adverse impacts to any significant (or potentially significant) cultural resources which have been encountered.

III.K.1(d). If avoidance of a discovered important archaeological resource would not be feasible, require an excavation plan. An excavation plan would consist of the methodical excavation of those portions of the site(s) that would be adversely affected. The work should be accomplished within the context of a detailed research design and in accordance with current professional standards. The plan should result in the extraction of sufficient volumes of non-redundant archaeological data so as to address important regional research consideration, should be performed by qualified professionals, and should result in detailed technical reports.

III.K.1(e). Allow only a qualified archaeologist or cultural resources consultant to collect any cultural resources discovered in the Project right-of-way.

III.K.1(f). Prohibit project personnel from collecting any cultural resources discovered during development of the Project. Prehistoric resources include chert or obsidian flakes, projectile points, mortars, and pestles; and dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic resources include stone or adobe foundations or walls, structures and remains with square nails; and refuse deposits, often in old wells and privies.

III.K.1(g). If prehistoric archaeological deposits that include human remains are discovered, notify the County Coroner immediately. If the remains are found to be Native American, the Native American Heritage Commission must be notified within 24 hours. The most likely descendant of the deceased Native American will be notified and given the chance to make recommendations for the remains. If no recommendations are made within 24 hours, remains may be reinterred elsewhere on the property. If recommendations are made and not accepted, the Native American Heritage Commission will mediate the problem.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measures are incorporated into the proposed Project. The Authority further finds that this mitigation measures are appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the identified performance criteria will ensure protection of any cultural and archeological resources discovered during Project construction.

(DEIR, Volume 3, page III.K.21.)

Significant Impact III.K.2: Construction of the Project could impact adjacent structures, some of which have the potential to qualify for the National Register of Historic Places. A total of 26 potentially significant historical cultural resources lying in or very close to the Project right-of-way have been identified, mostly along Marsh Creek Road. Twenty-three of these resources are buildings or building complexes. This would be a significant impact.

Mitigation Adopted by the Authority

III.K.2. There are a number of structures along Marsh Creek Road that are over 50 years and could possibly qualify for the National Register of Historic Places should they meet the National Register criteria. To be eligible for the National Register, a property must meet one or more of the four specific criteria to represent a significant theme or pattern in the history, architecture, archaeology, engineering, or culture of an area (36 C.F.R. 60.4 [1989]) (criteria for inclusion in the National Register of Historic Places). These four criteria include properties:

- (a) that are associated with events that have made a significant contribution to the broad patterns of our history (Criterion A); or,
- (b) that are associated with the lives of persons significant in our past (Criterion B); or,
- (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose component may lack individual distinction (Criterion C); or,
- (d) that have yielded, or may be likely to yield, information important in prehistory or history (Criterion D).

These properties may also meet the criteria for inclusion in the California Register of Historic Places, which are:

- (a) Places associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- (b) Places associated with the lives of persons important in California or American history.
- (c) Places that embody the distinctive characteristics of a type, period, region or method of construction, or represent the work of an important creative individual, or possess high artistic value.

- (d) Places which have yielded or may be likely to yield information important in prehistory or history.

Should any of these structures meet the criteria and be altered, relocated or demolished by construction of the Project, preparation of an Historic Property Clearance Report (HPCP) would be required under California Law (if there was no federal involvement), or preparation of an Historic Architectural Survey Report (HASR) would be required under the Section 106 federal process. Such a study would use the historic overview, photos, and other information developed as part of this report. For historic properties comprising the built environment, mitigation practices under CEQA parallel those undertaken for Federal projects.

The abandoned farmstead (Attachment A, number 26) should be recorded and evaluated as a potential historic archaeological site. The Sand Creek Bridge (resource number 25), a small bridge on Sand Creek Road, crosses Sand Creek in Section 10 TIN R2E MDM near the Project area. This bridge, Caltrans number 28CO174, was rated as a 5 (not significant) on the Caltrans Bridge Inventory (Hope, 1993). Therefore, it would not qualify for the National Register of Historic Places.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

12. Findings Concerning Energy Impacts

The identified energy impacts that are significant or potentially significant without mitigation, the adopted mitigation measures and findings of the Authority regarding those impacts with the adopted mitigation, are as follows:

***Significant Impact III.L.1:** Construction of the Project would require both direct and indirect expenditures of energy. The refined petroleum products needed to operate highway construction equipment would be a direct expenditure of energy. Indirect energy is consumed through sectors that provide inputs to an activity, rather than the energy consumed by the activity itself. For example, the use of steel reinforcement rod in highway construction indirectly represents energy consumed in all of the industries that contributed to the production of the rod (e.g., energy consumed through the mining and extraction of the raw materials, manufacturing, and transportation). Energy that would be expended in the operation of a roadway system includes direct and indirect transportation energy. The direct energy refers to the energy used in the combustion of fuels by motor vehicles that use the roadway or other roadways in the transportation network that would be affected by the roadway. The indirect energy is that energy associated with the wear and tear of motor vehicles using the roadway or other affected roadways in the transportation network, such as the lubricating oil replacement, tire wear, vehicle wear, vehicle maintenance and roadway maintenance. The increase in annual energy consumption due to the Project would be approximately 210 billion Btu under Phase I and approximately 250 billion Btu under Phase II, primarily due to energy consumed for roadway construction and roadway maintenance. This would be a significant impact.*

Mitigation Adopted by the Authority

III.L.1. Implement the following measures to reduce energy expended in construction and maintenance:

- (a) Minimize the number of trips transporting material to and from construction sites.**
- (b) Turn off truck and construction equipment engines when unneeded for substantial periods, as feasible.**
- (c) Require that all construction equipment engines be properly tuned.**
- (d) Encourage ridesharing by construction personnel traveling to and from construction sites.**
- (e) Plan construction activities so as to minimize the use of all on-site construction equipment.**
- (f) Select pavement materials on the basis of their future potential to be recycled.**

To reduce the energy related to the increase in VMT, the Project under Phase II could include (HOV) lanes and/or bus-only lanes during peak periods.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

13. Findings Concerning Utilities Impacts

The identified utilities impacts that are significant or potentially significant without mitigation, the adopted mitigation measures and findings of the Authority regarding those impacts with the adopted mitigation, are as follows:

***Significant Impact III.M.1:** The Project would cross major water collection and distribution facilities. The Bypass would cross the Contra Costa Water District's surface-level Contra Costa Canal west of Neroly Road; the underground Mokelumne Aqueduct (EBMUD) south of Lone Tree Way; the East Contra Costa Irrigation District (ECCID) Main Canal (a surface-level facility), east of Concord Avenue; and the planned alignment of the main distribution and supplemental intake pipelines for the proposed Los Vaqueros Reservoir near the Contra Costa Canal and east of Walnut Boulevard, and south of Camino Diablo, respectively. The Bypass would cross smaller underground water pipelines that serve Oakley (adjacent to the Contra Costa Canal) and Brentwood (between San Jose Avenue and Balfour Road). In addition, the Project right-of-way includes several north-south surface-level irrigation ditches operated by the ECCID. This would be a significant impact.*

Mitigation Adopted by the Authority

III.M.1. Coordinate with the appropriate public utilities and/or private operators during the Project construction to minimize potential impacts to existing water transmission facilities. Schedule construction so that any facilities that require relocation can be moved without disruptions in bulk service delivery.

Coordinate with the CCWD Los Vaqueros Project to ensure that the Pipeline is constructed such that the impact from Bypass roadway construction will be minimized.

The State Route 4 Bypass Authority will work with CCWD to ensure that the final adopted Bypass alignment will cause minimal impact and disruption to the Pipeline where the two cross.

Encase underground pipelines in large diameter concrete pipe or other suitable means, to ensure that the pipelines are not damaged by either construction or operation of the roadway and to protect the roadway in the event of failure.

Coordinate with the Vasco Road and Utility Relocation Project to minimize disruptions to utilities where the expressway would connect to the relocated Vasco Road. Slight revisions to the Bypass Project alignment should be implemented where the revisions would reduce or eliminate impacts to the pipelines for the Los Vaqueros Project.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the measure will ensure coordination with relevant utility operators to minimize potential impacts to water transmission facilities.

(DEIR, Volume 3, page III.M.8.)

Significant Impact III.M.3: The Project would cross natural gas pipelines. Underground PG&E and oil and chemical company natural gas pipelines would be crossed by the Bypass west of Neroly Road, west of Live Oak Avenue and at Lone Tree Way. The right-of-way would also intersect underground natural gas pipelines at Balfour Road and Concord Avenue. There are natural gas lines within the Southern Pacific Railroad right-of-way southeast of Antioch. Additionally, the Bypass would be within or adjacent to the right-of-way of an existing gas line from Concord Avenue to approximately Camino Diablo Road. PG&E also operates a natural gas compressor (pumping) station on its pipeline routes just west of the point where Concord Avenue turns north. This facility is adjacent to the Bypass. This would be a significant impact.

Mitigation Adopted by the Authority

III.M.3. Coordinate with the appropriate public utilities and/or private operators during Project construction to minimize potential impacts to existing natural gas pipelines. Schedule construction so that any facilities that require relocation can be moved without disruptions in bulk service delivery. Coordinate with the Vasco Road and Utility Relocation Project to minimize disruptions to utilities where the expressway would connect to the relocated Vasco Road.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the measure will ensure coordination with relevant utility operators to minimize potential impacts to gas pipelines.

(DEIR, Volume 3, page III.M.8.)

***Significant Impact III.M.4:** The Project would cross oil pipelines. Oil pipelines would be crossed at Sand Creek Road, San Jose Avenue, and Balfour Road. Additionally, the Bypass is within the existing alignment of an oil pipeline along the Southern Pacific Railroad right-of-way southeast of Antioch, between Sand Creek Road and San Jose Avenue (where there are also oil wells), and between Concord Avenue and approximately Camino Diablo. This would be a significant impact.*

Mitigation Adopted by the Authority

III.M.4. Coordinate with the appropriate public utilities and/or private operators during Project construction to minimize potential impacts to existing oil pipelines. Schedule construction so that any facilities that require relocation can be moved without disruptions in bulk service delivery.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the measure will ensure coordination with relevant utility operators to minimize potential impacts to oil pipelines.

(DEIR, Volume 3, page III.M.8.)

***Significant Impact III.M.5:** The Project could cross proposed sewer lines. The Bypass could be within the right-of-way of the City of Antioch's proposed Lone Tree Way sewage line at the north portion of this outfall, along the Southern Pacific Railroad tracks. The Bypass would cross the route of the sewer line, once it were constructed, at Lone Tree Way. Several developments are also proposed adjacent to the Bypass by the City of Brentwood. These developments would be adjacent to Sand Creek Road, Balfour and Marsh Creek Roads which would cross the Bypass. The Bypass could therefore cross proposed sewer lines that would serve this development. This would be a significant impact.*

Mitigation Adopted by the Authority

III.M.5. Should proposed sewer lines be scheduled for construction prior to Project construction, establish a formal agreement between the cities of Antioch and Brentwood, and the developers to incorporate relocation and/or encasement of the sewer line into the Project construction plan.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because coordination with the affected jurisdictions will ensure protection of proposed sewer lines.

(DEIR, Volume 3, page III.M.9.)

With regard to this mitigation measure, the Authority also finds that the consultation and agreement process are within the responsibility and jurisdiction of the Cities of Antioch and Brentwood and not the Authority. The Cities of Antioch and Brentwood have adopted this mitigation or can and should adopt this mitigation.

Significant Impact III.M.7: Construction of the Project could result in interruptions of local deliveries of water and electricity. Local service deliveries of water and electricity to residential and commercial customers could be temporarily affected in the immediate vicinity of any construction work. However, these interruptions would be expected to be brief and could be scheduled to inconvenience the fewest number of customers possible. This would be a significant impact.

Mitigation Adopted by the Authority

III.M.7. Ensure that the public is adequately informed of expected or potential interruptions of local deliveries of water and electricity. Publish notices of construction location, schedule and locations of detours in local newspapers so that public and service providers are informed of activities and the resultant need for temporary re-routing and adjustments to delivery schedules.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate

and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the published notices will provide sufficient information to apprise the public of Project construction.
(DEIR, Volume 3, page III.M.9.)

Significant Impact III.M.8: Development of the Project could facilitate increased growth in eastern Contra Costa County, which could generate increased demand for public utilities. Development of the Bypass and Marsh Creek Road connector could provide or improve access to areas that are not currently readily accessible and could result in residential and/or commercial development that would increase the demand for utilities in the area. This would be a significant impact.

Mitigation Adopted by the Authority

III.M.8. Condition approval of any development project in the Project area upon the provision of adequate utilities. This condition of approval is consistent with the Growth Management Element of the Contra Costa County General Plan, which states that the County shall require new development to demonstrate that adequate water quantity and quality and adequate sanitary sewer quantity and quality can be provided. The Growth Management Element also states that the County will adopt a development mitigation program to ensure that new development pay its fair share of the cost of various utilities and public services.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

14. Findings Concerning Public Services Impacts

The identified public services impacts that are significant or potentially significant without mitigation, the adopted mitigation measures and findings of the Authority regarding those impacts with the adopted mitigation, are as follows:

Significant Impact III.N.1: Construction of the Project could temporarily disrupt emergency police response, and could temporarily increase the number of emergency responses. Emergency responses could be hindered and/or response times increased by construction activities. Delays could occur as responding vehicles queue up to pass alongside construction sites. Project construction activities could also result in a short-term increase in demand for police services because of the increased possibility of accidents occurring in the vicinity of construction activities. from conflicts between construction equipment and highway traffic. This would be a significant impact.

Mitigation Adopted by the Authority

III.N.1. During Project construction, coordinate between constructors and public safety providers to minimize or eliminate interference with the provision of police services. Notify the police departments of construction schedules.

During construction, ensure that the construction contractor(s) provide traffic control, appropriate warning devices and signals, and public notice to minimize the changes that construction activities could pose a traffic hazard. During construction, maintain two-way traffic on all roads at all times, and use flaggers when only one lane of a roadway is open.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because coordination with the police department will minimize conflicts between construction equipment and highway traffic.

(DEIR, Volume 3, pages III.N.1. and 2.)

Significant Impact III.N.2: Construction of the Project could temporarily disrupt emergency fire response and could temporarily increase the number of emergency responses. Emergency responses could be hindered and/or response times increased by construction activities. Delays could occur as responding vehicles queue up to pass alongside construction sites. Project construction could also generate a short-term increase in demand for emergency responses as a result of the increased possibility of grass fires. Construction activities could also result in the

temporary loss of water for firefighting in urban and suburban areas should water pipes be accidentally damaged. This would be a significant impact.

Mitigation Adopted by the Authority

III.N.2. During Project construction, coordinate between constructors and public safety providers to minimize or eliminate interference with the provision of fire protection services. Notify the fire departments of construction schedules.

During construction, ensure that construction contractor(s) follow standard industry safety precautions to guard against on-the-job injuries. Ensure that the contractor(s) take precautions to minimize the risk of accidental fire. Such precautions could include consulting local fire districts, maintaining equipment in good working order, proper storage of flammable materials (including fuels), and keeping water on hand for extinguishing small fires. If water supply is to be disrupted, provide a temporary bypass pipeline to ensure adequate fire flow.

During construction, ensure that the construction contractor(s) provide traffic control, appropriate warning devices and signals, and public notice to minimize the changes that construction activities could pose a traffic hazard. During construction, maintain two-way traffic on all roads at all times, and use flaggers when only one lane of a roadway is open.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because coordination with public safety providers will minimize or eliminate interferences with fire protection services.

(DEIR, Volume 3, page III.N.2.)

Significant Impact III.N.3: Construction of the Project could temporarily disrupt emergency ambulance response and could temporarily increase the number of emergency responses. Emergency responses could be hindered and/or response times increased by construction activities. Delays could occur as responding vehicles queue up to pass alongside construction sites. Project construction could also generate a short-term increase in demand for emergency responses as a result of the increased hazards to the public and to construction workers associated with heavy construction: traffic congestion, rough roads, open trenches and heavy equipment operating near traffic could increase accidents, and construction workers would be subject to on-site injuries. This would be a significant impact.

Mitigation Adopted by the Authority

III.N.3. During Project construction, coordinate between constructors and public safety providers to minimize or eliminate interference with the provision of emergency medical services. Notify the ambulance services of construction schedules.

During construction, ensure that the construction contractor(s) provide traffic control, appropriate warning devices and signals, and public notice to minimize the changes that construction activities could pose a traffic hazard. During construction, maintain two-way traffic on all roads at all times, and use flaggers when only one lane of a roadway is open. During construction, ensure that construction contractor(s) follow standard industry safety precautions to guard against on-the-job injuries.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because coordination with public safety providers will minimize or eliminate interferences with emergency response teams.

(DEIR, Volume 3, page III.N.2.)

Significant Impact III.N.9: Development of the Project could facilitate growth in eastern Contra Costa County, which could generate increased demand for public services. Development of the Project would, in combination with already anticipated local roadway improvements, improve access to some areas near the Bypass that are not currently readily accessible and could thereby facilitate future residential and/or commercial development that would increase the demand for public services in the area. Future development within or adjacent to the Project would be subject to additional environmental review. This would be a significant impact.

Mitigation Adopted by the Authority

III.N.9. Condition approval of any development project in the Project area, whether by the County or by one or more cities, upon provision of adequate public services. This condition of approval is consistent with the Growth Management Element of the Contra Costa County General Plan, which states that the County will adopt a development mitigation program to ensure that new development pay its fair share of the cost of various utilities and public services.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives which the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

15. Findings Concerning Hazardous and Toxic Waste Impacts

The identified hazardous and toxic waste impacts that are significant or potentially significant without mitigation, the adopted mitigation measures and findings of the Authority regarding those impacts with the adopted mitigation, are as follows:

Significant Impact III.O.1: Construction of the Project may expose workers to hazardous materials located at the Brentwood Gun Club. The environmental concern with shooting ranges is the high concentrations of lead in the soils of the firing range. The target area of the Brentwood Gun Club has soil that can reasonably be expected to qualify as hazardous waste under both state and federal regulation. Any contaminated soil present will need to be delineated prior to any excavation; and some level of site remediation will be required. This would be a significant impact.

Mitigation Adopted by the Authority

III.O.1 - III.O.6: A comprehensive investigation of soil quality at the sites identified in this report shall be done by the State Route 4 Bypass Authority ("Authority"). The investigation will be done after alignment surveying has been completed but prior to any construction or excavation work in the alignment that would encroach across the identified sites. The soil quality investigation will also include surveying for hazardous wastes that could be found along shoulders of existing roadways, as soils that are excavated during widening of roadways may exhibit hazardous waste characteristics. The results of such an investigation, together with all available soil reports and chemical analyses shall be submitted to the oversight agency for approval. In order to determine whether contaminants at an impaired site would pose a potential threat to human health and safety or to the environment, the Department of Toxic Substances Control may require a Human

Health Screening Evaluation as part of a Preliminary Endangerment Assessment (PEA), as described in the DTSC Preliminary Endangerment Guidance Manual (1994).

The PEA is designed to be a standard approach for evaluating sites contaminated with hazardous substances in order to determine if cleanup or other remedial action is required to protect public health or the environment. The PEA is the initial step in the overall site mitigation process to abate health or environmental threats posed by a parcel where hazardous waste has been released or has a significant potential to be released.

The Department of Toxic Substances Control provides oversight for the PEA process, which includes an initial site evaluation and preparation of a PEA report, followed by an evaluation and approval of the PEA report by DTSC. Depending on the results of the PEA, a Remedial Investigation / Feasibility Study (RI/FS) and a Remedial Action Plan may be needed eventually for site cleanup.

The PEA should include the following information: a site description and site history, including a description of past and current site activities and a description of handling procedures for hazardous substances associated with the site business activities; a description of the apparent problem such as documentation or spills or releases, and the results of any sampling and analysis that has been completed to characterize these; a description of potential pathways for exposure to chemicals (such as soil, water and air); a description of any sampling and analysis performed to evaluate the extent of chemicals identified in the soil and/or groundwater; an assessment of the threat to the public health and the environment; an identification of possible remediation strategies; and conclusions and recommendations. Specific details to be included in the PEA are described in the DTSC Preliminary Endangerment Assessment Guidance Manual (1994).

Implementation Procedure

As part of the site assessment process, the Authority will collect soil samples at locations to be affected by the project. The number of samples collected would be based on the size of the contaminated site, site activities, and possible transport or migration routes. Samples might include soil, soil gas, or groundwater, depending on the nature of the contaminants suspected to be present. The Authority shall prepare a soil sampling plan for each identified site prior to initiation of excavation or construction. Each site specific sampling plan shall be submitted to the Contra Costa County Department of Environmental Health for approval before sampling begins. The sampling plan shall contain all proposed sampling locations, sample collection procedures, name of the certified laboratory doing the chemical analysis, sample handling procedures, test methodology in conformance with the following analysis protocol, chain of custody requirements, site safety plan, and quality assurance plan to verify the laboratory results.

The sampling plan shall also include the reporting format for all laboratory analysis sheets, field logs, Chain of Custody forms and laboratory quality control information.

Each sampling plan shall specify that all soil and groundwater chemical analyses shall be performed by a California-certified laboratory, using standard EPA and California chemical testing methods in the following sequence:

(a) Metals Analysis (III.O.1 - III.O.3)

For soil samples collected from the Brentwood Gun Club and both the Neroly Road Debris Dump and the Laurel Interchange Junk Yard, a tiered soils analysis approach is required.

First Tier - All samples shall be analyzed for Soluble Threshold Limit Concentrations (STLC) under the methodology of the California Waste Extraction Test. All samples shall also be tested for Total Threshold Limit Concentrations (TTLC) of metals. All samples that have an STLC less than the state limit for soluble metals are representative of a non-hazardous soil. All samples with an STLC equal to or greater than the state limit for soluble metals are regulated in California and are subject to additional testing under the provisions of the federal Resource Conservation and Recovery Act (RCRA).

Second Tier - Samples with an STLC equal to or greater than the state limit for soluble metals shall be tested using the Toxicity Characteristic Leaching Procedure (TCLP). Those samples having results above the TCLP threshold are considered representative of a RCRA hazardous wastes and must be remediated as such. Those samples having results below the TCLP threshold are California regulated waste and may be disposed of as hazardous waste or reclassified by request as non-hazardous waste for purposes of an identified disposal option.

(b) Crude Oil Analysis (III.O.4-III.O.5)

For soil samples collected from the area of the Sand Creek oil field and the San Jose Tank Farm, soil samples shall be analyzed for total petroleum hydrocarbons and flammability. Soil samples with total petroleum hydrocarbons above 100 parts per million shall be subject to additional characterization for waste classification. Soils with elevated levels of hydrocarbon that can qualify as recycled materials for reprocessing shall be recycled.

(c) PCB Analysis (III.O.6)

(d) If the transformers at the Lopez farm are to be removed by the Authority, the transformers shall be tested for the presence of PCB-containing fluids. Soils directly under the transformers shall also be tested for PCBs. In addition to oil,

metals, and PCBs as specified above, sample analysis could include semivolatile organics, total petroleum hydrocarbons as diesel and gasoline, pesticides, asbestos, and pH. Sampling locations for these tests, such as along shoulders of existing roadways, would be specified at the discretion of the oversight agency during preparation of the sampling plans.

Remedial Action Plan

Using the information generated from the sampling and analysis program, a remedial action plan shall be prepared. If hazardous wastes are identified in soil or groundwater at levels that present a risk to the public, to construction workers, or to the environment, it would be necessary to remediate the site in compliance with applicable laws and regulations prior to construction to reduce the potential for exposing persons to hazardous substances during construction activities. Prior to implementing the remediation, a detailed remediation plan would be developed by the Authority and submitted to regulatory agencies for review to ensure their concurrence with the plans and compliance with applicable laws and regulations. Following remediation of the project site, a report documenting the remedial process would be submitted to the agencies. The remedial action plan shall also identify the disposal or treatment alternatives to be employed.

Without prior knowledge of specific contaminants to be encountered along the right-of-way, it is not feasible to identify specific remedial measures in advance. However, the types of contaminants likely to be found would not be unusually dangerous nor pose unmanageable health risks. Routine mitigation methods for excavated sites include hauling contaminated soils to an off-site disposal facility for treatment, disposal, or reuse (such as manufacturing asphalt from oil-tainted soil), or else encapsulating the contaminated soil under paved surfaces. Groundwater remediation, if required, could entail *in situ* treatment on site, containment behind slurry walls, pump and treat, removal, or some combination of methods.

In accordance with OSHA requirements, a Site Safety Plan would be prepared and be in force prior to commencing work at any contaminated locations. The Site Safety Plan would be prepared in conformance with guideline of the *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities* (National Institute for Occupational Safety and health and Occupational Safety and health Administration, 1985). The legally mandated safety regulations required by this measure would protect project construction workers from exposure to soil and groundwater contaminants and would also help protect the public and the environment.

Monitoring and Reporting Actions

The Authority shall perform, or have performed by a qualified consultant, all mitigation measures identified. Monitoring reports, sampling plans, test results, remediation plans,

and confirmation reports describing the remedial actions that were taken, including analytical data, would be prepared and submitted to the oversight agency for review and approval.

Monitoring Responsibilities

The Authority shall be responsible for having the Contra Costa County Department of Public Health Services, Environmental Division, or a qualified Registered Environmental Assessor monitor the mitigation measures. The Department of Public Works shall make all reports and supporting documentation part of the Project's administrative file. This documentation shall be part of the public record.

Monitoring Schedule

Prior to the initiation of construction or excavation in connection with the Project, all soil sampling shall be finished, remediation plans prepared, and all identified remediation actions shall be completed. Final verification testing shall also be completed prior to initiation of construction or excavation in order to eliminate all monitoring during or after construction.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the comprehensive program to address hazardous waste will ensure protection from exposure.

(FEIR, pages II.120 through 125.)

Significant Impact III.O.2: Construction of the Project may expose workers to hazardous materials located on the Laurel Interchange Junk Yard. The junkyard appears to have been used for storage of a large quantity of "salvage" materials. In general, old junkyards and salvage yards were operated with poor environmental practices and are characteristically contaminated with heavy metals, PCB's, asbestos debris, and polynuclear aromatic hydrocarbons (PNA's). The primary impacts associated with metal-contaminated soils are the health effects of metal poisoning. This would be a significant impact.

Mitigation Adopted by the Authority

Implement mitigation measure III.O.1. above.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the comprehensive program to address hazardous waste will ensure protection from exposure.

(FEIR, pages II.120 through 125.)

***Significant Impact III.O.3:** Construction of the Project may expose workers to hazardous materials located at the Neroly Road Debris Dump. The area appears to be a "wildcat dump" that is being used as an illegal dump site for the disposal of household garbage. There is some indication within the debris piles that the site has also been used as a disposal site for some commercial waste. Several old 55-gallon drums were observed near the collapsed garage structure and one five-gallon drum was observed in the debris piles. The primary impacts associated with this site are the potential presence of almost any hazardous waste in the general debris. This would be a significant impact.*

Mitigation Adopted by the Authority

Implement mitigation measure III.O.1. above.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the comprehensive program to address hazardous waste will ensure protection from exposure.

(FEIR, pages II.120 through 125.)

***Significant Impact III.O.4:** Construction of the Project may expose workers to hazardous materials located at the Sand Creek Oil Wells. Six oil wells are situated within or immediately adjacent to the identified alignment. Four of these appear to be actively producing oil and the other two are pads, each with a capped-off well casing. One potential impact from oil wells is the presence of oil-contaminated soils in the immediate vicinity of the well head. Proper closure of the oil wells must be performed to prevent future problems at the site due to possible buildup of explosive gases or ground subsidence and roadway failure at the well location. This would be a significant impact.*

Mitigation Adopted by the Authority

Implement Mitigation Measure III.O.1. above.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the comprehensive program to address hazardous waste will ensure protection from exposure.

(FEIR, pages II.120 through 125.)

Significant Impact III.O.5: Construction of the Project may expose workers to hazardous materials at the San Jose Avenue Crude Oil Tank Farm. The environmental concern at this site is soil contamination at locations where spillage has occurred. This would be a significant impact.

Mitigation Adopted by the Authority

Implement Mitigation Measure III.O.1. above.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the comprehensive program to address hazardous waste will ensure protection from exposure.

(FEIR, pages II.120 through 125.)

Significant Impact III.O.6: Construction of the Project may expose workers to hazardous materials related to the private transformers at the Lopez Farm. After World War II, farms often used military surplus transformers to generate electricity. Many of these transformers were an oil-filled variety that used oil as both an insulating dielectric and a cooling fluid. The oil that was used from 1927 through 1976 was Askarel, which was pure polychlorinated biphenyls (PCBs), a listed carcinogen. If the transformers are in the alignment and contain PCBs, they would have to be disposed of as hazardous waste. This would be a significant impact.

Mitigation Adopted by the Authority

Implement Mitigation Measure III.O.1. above.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation.

The Authority finds that the above-stated mitigation measure is incorporated into the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because the comprehensive program to address hazardous waste will ensure protection from exposure.

16. Findings Concerning Growth Inducing Impacts

The identified growth inducing impacts that are significant or potentially significant without mitigation, the adopted mitigation measures and findings of the Authority regarding those impacts with the adopted mitigation, are as follows:

Significant Impact V.A.1: The Bypass Project will induce growth in East Contra Costa County. It is anticipated that the Project will improve access to a substantial amount of undeveloped land, thus removing an obstacle to further real estate development in this region. The degree of increased development attributable to the Project is unclear, and it is also unclear whether the Bypass alone would allow for growth beyond that allowed for in County and local General Plans. However, the Bypass is expected to affect the timing and rate of allowed growth. This would be a significant impact.

Mitigation Adopted by the Authority

V.A.1. The following combination of mitigation measures could reduce the impact of growth inducement. These include: limiting allowable development through the General Plan Amendment process at County and local levels; commit to the development of urban core areas of East County prior to developing open space and agricultural land. Adopt community planning guidelines and design features that promote efficient land use with a high degree of multi-modal accessibility between land uses; cluster residential units into medium densities to promote use of transit, and develop where transit service is currently available. These combination of measures could mitigate the impact to a less-than-significant level. However, the lead agency does not have the authority to implement them. Therefore, this impact remains significant and unavoidable.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

17. Findings Concerning Cumulative Impacts

The identified cumulative impacts that are significant or potentially significant without mitigation, the adopted mitigation measures and findings of the Authority regarding those impacts with the adopted mitigation, are as follows:

Significant Impact V.B.1: The Bypass project would induce growth in East Contra Costa County. In combination with anticipated planned growth, this would be a significant cumulative impact, with attendant secondary cumulative impacts.

Mitigation Adopted by the Authority

V.B.1. Growth in Alameda and Contra Costal Counties outside of planned growth in the general plans of cities and counties would require a General Plan Amendment. Amendments to general plans to control the location, rate, and timing of growth could mitigate land use impact from induced growth. However, because general plan amendments are not within the Bypass Authority's control, this would remain a significant and unavoidable impact.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is

feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact V.B.2: Development of the Project would result in cumulative disruption of established communities through the removal and/or relocation of existing residential and commercial structures within the right-of-way and potential relocation within the contemplated growth areas under general plans. This would be a significant, cumulative impact.

Mitigation Adopted by the Authority

V.B.2: Amendments to general plans to control the location, rate, and timing of growth could mitigate potential community disruption. Similarly, project-level environmental review for each project analyzed as part of this cumulative development scenario would also consider impacts to land uses, in particular potential community disruption and would propose mitigation measures. However, because neither general plan amendment or project-level mitigation is within the Bypass Authority's control, this would remain a significant and unavoidable impact.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact V.B.3: Development of the Project, in combination with anticipated urban development under general plans, would result in direct and secondary removal of prime agricultural land and Farmland of Statewide Importance. This would be a significant, cumulative impact.

Mitigation Adopted by the Authority

V.B.3. Amendments to general plans to control the location, rate, and timing of growth could mitigate impacts from conversion of prime agricultural lands. Similarly, project-level environmental review for each project analyzed as part of this cumulative development scenario would also consider impacts to land uses, in particular conversion of prime agricultural land and would propose mitigation measure. However, because neither general plan amendments or project-level mitigation is within the Bypass Authority's control, this would remain a significant and unavoidable impact.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

A. Socioeconomic Impacts

Significant Impact V.B.4: The development of the Project, by inducing growth in the project area, would contribute to a cumulative increase in population and attendant demand for and availability of housing. This would be a significant, cumulative impact.

Mitigation Adopted by the Authority

V.B.4. Amendments to general plans to control the location, rate, and timing of growth could mitigate potential impacts to population growth and thus maintain appropriate jobs-housing balances. Similarly, project-level environmental review for each project analyzed as part of this cumulative development scenario would also consider impacts to

socioeconomic and would propose mitigation measure(s). However, because neither general plan amendments or project-level mitigation is under the Bypass Authority's control, this would remain a significant and unavoidable impact.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact V.B.5: The Bypass project would contribute to cumulative development, resulting in potential displacement and closure or relocation of commercial land uses including agriculture. This would be a significant, cumulative impact.

Mitigation Adopted by the Authority

V.B.5. Amendments to general plan to control the location, rate, and timing of growth could mitigate potential impacts to population growth and thus minimize impacts to commercial land uses from development, especially conversion of prime agricultural lands. Similarly, project-level environmental review for each project analyzed as part of this cumulative development scenario would also consider impacts to socioeconomic, including conversion of commercial land uses such as prime agricultural land and would propose mitigation measure(s). However, because neither general plan amendments or project-level mitigation is under the Bypass Authority's control, this would remain a significant unavoidable impact.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental

effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

B. Visual Resources Impacts

Significant Impact V.B.6: Development of the Bypass project would directly and indirectly, by inducing growth, contribute regional, cumulative loss of open space vistas by introducing visually intrusive urban features into the natural landscape. This would be a significant, cumulative impact.

Mitigation Adopted by the Authority

V.B.6. To minimize the individual visual impacts of Bypass development, mitigation listed in Table III.1, Impact and Mitigation III.D.21., can be employed; to minimize the visual disruption resulting from introducing urban features into natural landscapes, would require defining and enforcing appropriate general plan policies and ordinances, and identifying aesthetic conditions (mitigation) for individual project plan review, such as set-backs, height and mass limits, landscaping, etc. The Authority does not have control over imposition of these mitigation beyond the Bypass project itself.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

C. Traffic and Transportation Impacts

Significant Impact V.B.7: The East County Corridor and other cumulative transportation projects (i.e. Antioch BART, Brentwood Commuter Rail, Toll Road) would generally have a beneficial impact on traffic flow on key roadway links and intersections in the study area, with the exception of SR4 between SR160 and Lone Tree Way. The traffic analysis for the East County Corridor Program in DEIR Volume 2, Section E describes the cumulative traffic volumes and system performance both with and without the Corridor. As for Bypass Project 2010(+) scenario, the Corridor would have generally beneficial impacts on parallel area roadways such as Deer Valley Road, Lone Tree Way, and existing State Route 4. Traffic demand on the State Route 4 freeway would be slightly greater with the proposed Project under the cumulative condition.

Mitigation Adopted by the Authority

V.B.7. Same as proposed in Volume 3, Section III.E (Impact and Mitigation III.E.4). Otherwise, no mitigation is needed to address the impacts of the cumulative transportation projects.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact V.B.8: A new transportation facility through the East County Corridor, including Toll Road, would not be consistent with the regional plans for Alameda County. Therefore, implementation would conflict with those plans, including the Alameda East County Area Plan, North Livermore General Plan Amendment, Alameda County Congestion Management Plan CIP, and the Metropolitan Transportation Commission RTP. The inconsistency with established plans and policies would be a significant impact.

Mitigation Adopted by the Authority

V.B.8. Prior to considering transportation improvements through the East County Corridor, include the Corridor on appropriate transportation and land use plans. The modification of these plans to include the Corridor would require additional environmental analyses under CEQA and under NEPA if federal funds are involved. However, the Bypass Authority has no authority to implement these changes and the impact would remain significant.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact V.B.9: The additional transportation capacity from the Project in conjunction with other cumulative transportation projects, combined with additional proposed development, may hasten or induce development growth to proceed toward allowable levels quicker than would otherwise be the case, particularly as a "free" (i.e. non-toll facility) roadways.

Mitigation Adopted by the Authority

V.B.9. The Authority shall implement mitigation proposed in Volume 3 of the EIR to reduce identified cumulative impacts (2010+) on the State Route 4 Bypass to a less-than-significant level. In addition, Contra Costa County, Caltrans, and Alameda County should coordinate efforts to complete the regional transportation system within the MTC's constrained funding scenario, advancing those projects deemed most beneficial to maintain regional traffic service goals. However, the Bypass Authority lacks the authority to insure that this occurs.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact V.B.10: Cumulative impacts of the Mid-State Toll Road, with or without the East County Corridor (including the Bypass Project segment), and with other roadway improvements and additional development, could occur under the following scenarios: (1) Entire Mid-State Toll Road Built, (2) Only I-580/I-680 Bypass Built, or (3) Only Brentwood-Tracy Portion Built. However, even with these improvements, the overall effect of cumulative development would be that peak period travel demand would exceed the capacity of most regional routes in eastern Contra Costa and Alameda County. This would be a significant impact.

Mitigation Adopted by the Authority

V.B.10. The only means available to prevent the chronic congestion forecasted for the regional roadways in eastern Contra Costa and Alameda Counties will be to limit not yet approved development, allowing it to occur based on forecasted residual transportation capacity on the transportation network. However, this will require a high degree of inter-regional cooperation; the Bypass Authority lacks the authority to insure that this occurs over time.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact V.B.11: Development of the Bypass project, in combination with the southern segment of the East County Corridor and/or Mid-State Toll Road, would result in a significant cumulative increase in noise levels between Lone Tree Way and Interstate 580 due to redistributing traffic in the East County subregion. This would be a significant, cumulative impact.

Mitigation Adopted by the Authority

V.B.11. Development of either the Corridor or Mid-State Toll Road would occur only after subsequent environmental review. Additional berms, walls, or increased heights to barriers developed as a part of the project may be required to meet FHWA/Caltrans Noise Abatement criteria. However, even assuming that FHWA/Caltrans Noise Abatement criteria are met, significant cumulative noise increases would still occur, particularly in the north Livermore area.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact V.B.12: Assuming that commuter service from Oakland to Brentwood would use the Southern Pacific rail line just east of the northern-most portion of the proposed Bypass, there could be more extensive noise impacts than those described for the project for residences near the proposed State Route 4/Bypass Interchange in the vicinity of Frandoras Circle. This is because increased rail noise would add cumulatively to the noise level that would increase due

to higher future traffic volumes on the proposed Bypass, State Route 4, and the proposed extension of Sunset Drive. This could result in a significant cumulative impact.

Mitigation Adopted by the Authority

V.B.12. Commuter rail service from Oakland to Brentwood would also occur only after subsequent environmental review; such review would probably provide the basis for additional noise mitigation along the rail line consistent with Federal Transit Administration (FTA) standards and regulations. Additional mitigation could include additional walls and berms, or improved track but it would be speculative to conclude whether future FTA noise abatement standards and regulations would reduce the cumulative impact to less-than-significant.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because subsequent environmental review would incorporate noise mitigation measures.

(FEIR, page II-222.)

D. Air Quality Impacts

Significant Impact V.B.13: Reasonably foreseeable secondary land use development includes development envisioned by general and area plans (short-term), and specific projects--Mountain House, Discovery Bay West, and Cowell Ranch (long-term). Cumulative development, particularly the East County Corridor and Mid-State Toll Road in conjunction with the 2010(+) scenario, would result in additional vehicle trips and/or vehicle miles-traveled (VMT) through diversion of person-trips from other routes and other forms of transportation, increasing vehicle trip lengths, and secondary land use development pressures along affected roadways in Contra Costa and Alameda Counties. Under both scenarios, new and/or longer trips would result in additional emissions of ozone precursors [i.e. hydrocarbons (HC) and nitrogen oxides (NO_x)] and respirable particulate matter (PM₁₀). This would be a significant impact.

Mitigation Adopted by the Authority

V.B.13. Since significant cumulative air quality impacts are regional in nature and apply to two regions, the San Francisco Bay Area and San Joaquin Valley, the most reasonable approach to mitigation would involve coordinating the activities and decisions of all relevant agencies that affect transportation infrastructure, air quality management, and land use development. These agencies include, among others, the Metropolitan Transportation

Commission, Contra Costa Transportation Agency, State Route 4 Bypass Authority, San Joaquin counties' regional transportation agencies, air quality regulatory agencies (Bay Area Air Quality Management District and San Joaquin Valley Air Pollution Control District), and local cities and counties. Effective, long-term mitigation for cumulative air quality impacts would involve a greater degree of emphasis on air quality concerns from local and county jurisdictions in their land use decisions which, historically has been difficult to do given that the benefits (e.g. increased tax revenue and political power) of development are local and the adverse effects are spread over two wide regions.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

E. Geology, Seismicity, and Soils Impacts

Significant Impact V.B.15: Urban development envisioned by general plans and specific development projects not yet included in general plans, in combination with the Bypass project, would increase residential and employment populations and traffic throughout previously undeveloped areas of Contra Costa County, thus increasing the number of people exposed to earthquake-related risks. Transportation projects considered in the long-term cumulative scenario would exacerbate this increase by removing obstacles to development. In the aggregate, this would be a significant impact.

Mitigation Adopted by the Authority

V.B.15. Project-level environmental review for each project analyzed as part of this cumulative development scenario would review the hazards (impacts) associated with geology, seismicity and soils and propose mitigation measures. Mitigation for earthquake-related risks such as avoidance of known fault lines and areas of liquefaction could reduce

the magnitude of seismic impacts, but not below the threshold of significance.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact V.B.16: Cumulative development would also result in removal of vegetation and alterations to drainage and slopes in varying degree. In addition, alteration of existing geologic features and development in areas of high shrink-swell characteristics would continue. This would be a significant impact. Development of the southern segment of the corridor would extend these secondary geologic-related significant impacts of growth south to I-580, and development of the Toll Road would extend them south of I-580 to Sunol.

Mitigation Adopted by the Authority

V.B.16. Project-level mitigation for soil-related impacts such as revegetation, replacement of high shrink-swell potential soils with engineered fill and construction standards to avoid soil erosion could reduce project-related and thus cumulative impacts to a less-than-significant level. However, because the Bypass Authority will not have control over environmental review of future projects, this remains a significant unavoidable cumulative impact.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse

environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

F. Hydrology and Drainage Impacts

Significant Impact V.B.17: Cumulative land development allowed under general plans plus residential and commercial projects assumed in this cumulative analysis, in conjunction with induced growth resulting from the Bypass and other transportation projects, would result in the further alteration of floodplains and flood routing. This would increase the number of people exposed to flood-related hazards, including dam failure. This would be a significant impact.

Mitigation Adopted by the Authority

V.B.17. Mitigation for flood-related risks such as avoidance of high flood areas, designing structure and roadways to withstand 100-year floods and inundation from dam failure, and implementation of flood control measures such as new channels or storm water detention basin could, for individual projects, generally reduce the magnitude of flooding impacts to a less-than-significant level. However, because the Bypass Authority does not have control over environmental review of future projects, this impact remains significant and unavoidable.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or

eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact V.B.18: Construction near existing waterways would contribute to the alteration of existing stream patterns and development in general would alter existing flow patterns of rainfall runoff resulting in significant impacts. Development of the southern Corridor segment would extend cumulative impacts to hydrologic resources south to I-580, and development of the Toll Road would extend them further south to Sunol.

Mitigation Adopted by the Authority

V.B.18. Alteration of existing stream or runoff flow patterns would require permitted approval from the U.S. Army Corps of Engineers and the California Department of Fish and Game on a project-by-project basis. Permits from these agencies generally are not approved without mitigation measures than for CEQA purposes, would reduce both individual and cumulative impacts to less-than-significant level. However, because the Authority will not have control over individual permits, this impact remains significant and unavoidable.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

G. Biological Resources and Wetlands Impacts

Significant Impact V.B.19: Direct cumulative impacts to sensitive biological resources would occur from the Bypass project, in combination with cumulative land development, because biological resources within the Bypass right-of-way would be removed. Future development induced by the Project, in combination with build-out assumed under general plan, would result in secondary impacts to significant natural communities and special-status plant and wildlife

species within the right-of-way and on lands subject to development and increased barriers to wildlife movement corridors. The Contra Costa County General Plan EIR (December 1991) discusses cumulative impacts to vegetation from buildout of plans in the Bypass project area. This cumulative discussion is incorporated here by reference.

Mitigation Adopted by the Authority

V.B.19. Environmental review for specific development projects would identify site specific impacts to biological resources and would propose mitigation. If conditional approval is required for any development project in the State Route 4 Bypass area, whether by the County of Contra Costa or the Cities of Antioch or Brentwood, upon provision of mitigation measures to reduce identified project-related biological resource impacts to below the level of significance, then the cumulative impact would be reduced to a less-than-significant level. However, since the Bypass Authority does not have direct control over the environmental review of future development projects, the cumulative impacts cited above would be significant and unavoidable.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

Significant Impact V.B.20: Future development induced by the Project, in combination with build-out of specific long-term development projects (Mountain House, Discovery Bay West, and Cowell Ranch) would result in secondary impacts to significant natural communities and special-status plan and wildlife species in eastern Contra Costa and western San Joaquin Counties. The resources in eastern Contra Costa County are described in Chapters III.J. of the DEIR, Volumes 2 and 3. Expansion of the Byron Airport would contribute marginally to this cumulative impact. This would be a significant, cumulative impact.

Mitigation Adopted by the Authority

V.B.20. Environmental review for specific development projects would identify site specific impacts to biological resources and would propose mitigation. If conditional approval is required for any development project in the State Route 4 Bypass area, whether by the County of Contra Costa or the Cities of Antioch or Brentwood, upon provision of mitigation measures to reduce identified project-related biological resource impacts to below the level of significance, then the cumulative impact would be reduced to a less-than-significant level. However, since the Bypass Authority does not have direct control over the environmental review of future development projects, the cumulative impacts cited above would be significant and unavoidable.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

H. Cultural Resources Impacts

The identified cultural resources impacts that are significant or potentially significant without mitigation, the adopted mitigation measures and findings of the Authority regarding those impacts with the adopted mitigation, are as follows:

***Significant Impact V.B.21:** Development in this area could have a significant impact on potential archaeological and cultural resource sites. Development of the southern Corridor segment would extend cumulative impacts to cultural resources south to I-580. Development of the Toll Road would also extend cumulative impacts to cultural resources south of I-580 to Sunol. While development has the potential to increase knowledge of prehistoric and historic activities from archaeological findings and associated mitigation measures, some resources are unique and could be affected by increase population density and resulting increased access to the sites. This would be a significant impact.*

Mitigation Adopted by the Authority

V.B.21. Environmental review for specific development project would identify site specific impacts to cultural resources and propose mitigation. If conditional approval of any development project in the State Route 4 Bypass area requires, whether by the County of Contra Costa or the Cities of Antioch or Brentwood, provision of mitigation measures to reduce identified project-related cultural resource impacts to below the level of significance, then the cumulative impact would be reduced to a less-than-significant level. However, since the Bypass Authority does not have control of environmental review or permitting of future projects, the impact remains significant and unavoidable.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

I. Energy Impacts

Significant Impact V.B.22: Cumulative development would add to the significant impact of increased consumption of non-renewable energy sources. Proposed new development under existing general plans and other development projects in the Bypass area increase consumption of non-renewable energy sources by generating more vehicular traffic. Development of the southern segment of the Corridor or the Mid-State Toll Road would result in an even greater impact on energy consumption of non-renewable energy than that described for the Project due to the overall increase in construction energy consumption and the increase in VMT (associated gallons of gasoline and diesel fuel). Extension of BART to Hillcrest Road and establishment of Commuter Rail service from Oakland to Brentwood would offset some of the increase in energy consumption related to roadway development, provided that future roadway projects would not in themselves reduce the attractiveness of these alternate transportation modes. However, the level of congestion forecasted in the cumulative scenario may increase the attractiveness of transit options. Nonetheless, in combination with impacts of the Bypass project, this would be a significant cumulative impact.

Mitigation Adopted by the Authority

V.B.22. Effective, long-term mitigation for cumulative energy impacts would involve a greater emphasis on minimizing transportation-related energy expenditures by local and county jurisdictions in their land use decisions. This would necessitate local agencies cooperating with the California Air Resources Board and planning new development along existing or future transit corridors (i.e., along BART extension to Hillcrest Road.) However, since the Bypass Authority does not have control of environmental review or permitting of future project, the impact remains significant and unavoidable. In addition, new roadway projects by definition would cause significant, unavoidable energy impacts from increased vehicular traffic.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

J. Utilities Impacts

Significant Impact V.B.23: Future urban development assumed in this cumulative analysis, in combination with development induced by the Bypass project, would cumulatively contribute to impacts to utilities. Development of residential and commercial projects would create the demand for new facilities and infrastructure, while transportation projects would provide or improve access to areas of the not readily accessible and could result in induced growth, causing additional demand for public utilities. In combination with impacts of the Bypass project, this would be a significant impact.

Mitigation Adopted by the Authority

V.B.23. Environmental review for specific development projects would identify impacts to public utilities and propose mitigation. Development projects in Contra Costa County must provide adequate utility services to receive project approval. This condition of

approval is consistent with the Growth Management Element of the Contra Costa County General Plan, which states that the County shall require new development to demonstrate that adequate water quantity and quality and adequate sewer quantity and quality can be provided. The Growth Management Element also states that the County will adopt a development mitigation program to ensure that new development pay its fair share of the cost of various utilities and public services. Public utility services are generally handled on a fee-for-service basis, so increased demand would not likely create impacts. After mitigation, the impact to public utilities would be reduced to a less-than-significant level.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Project. The Authority further finds that this mitigation measure is appropriate and feasible and will substantially lessen or avoid the above-described potential adverse environmental effect because subsequent environmental review will incorporate mitigation to reduce impacts to utilities.

(FEIR, page II-228.)

K. Public Services Impacts

Significant Impact V.B.24: Future development assumed in this cumulative analysis would contribute to impacts to public services. Development of residential and commercial projects would create the demand for expanded public services, while transportation projects would provide or improve access to areas of the counties not currently readily accessible and could result in induced growth, causing additional impacts to public services. This would be significant.

Mitigation Adopted by the Authority

V.B.24. Environmental review for specific development project would identify impacts to public services and propose mitigation. Development projects in Alameda and Contra Costa Counties must provide adequate public service to receive project approval. In Contra Costa County, this condition of approval is consistent with the Growth Management Element of the Contra Costa County General Plan, which states that the County will adopt a development mitigation program to ensure that new development pay its fair share of the additional costs to public services and utilities. However, developer fees to fund public services, especially new schools, are not guaranteed. Also, the Bypass Authority has no control over payment of developer fees to local jurisdictions for other cumulative projects considered. Therefore, the impact to public services would remain significant and unavoidable.

Findings Concerning Adopted Mitigation Measures

Significance With Mitigation

The Authority finds that the above-stated mitigation measure is incorporated in the proposed Bypass Project. The Authority further finds that this mitigation measure is feasible and will lessen, but not necessarily eliminate the potential adverse environmental effect associated with the Bypass Project. Thus, this impact is significant and unavoidable.

The Authority finds that there are no other feasible mitigation measures or alternatives the Authority can adopt at this time, which would reduce the impact to less than significant. To the extent that this adverse impact will not be substantially lessened or eliminated, the Authority finds that specific, economic, legal, social, technological, or other considerations identified in the Statement of Overriding Considerations support approval of the Bypass Project.

ENVIRONMENTAL IMPACT REPORT

STATE ROUTE 4 BYPASS PROJECT



**EXHIBIT B: FINDINGS CONCERNING REJECTION OF
PROJECT ALTERNATIVES**

STATE ROUTE 4 BYPASS AUTHORITY

DECEMBER 13, 1994

EXHIBIT B: FINDINGS ON STATE ROUTE 4 BYPASS PROJECT ALTERNATIVES

SECTION A: PROJECT ALTERNATIVES

In order to evaluate the possible environmental impacts resulting from a range of reasonable alternatives which could feasibility attain the basic objectives of the Project, the seven State Route 4 Bypass Project alternatives considered in the Draft Environmental Impact Report (DEIR) were:

- (1) No Project alternative
- (2) Arterial Upgrade Alternative
- (3) Transit Alternative
- (4) Toll Road Alternative
- (5) Short Route Alternative
- (6) Cowell Alternative
- (7) The Nunn Alternative

During the environmental review process, federal and state resource agencies indicated that the tributary to Kellogg Creek is considered a high quality wetland in the area west of the Domegine Sandstone rock outcrop. Accordingly, the project alignment for three alternatives considered in the DEIR were modified, and used in the analysis in the Addenda to the Draft EIR. (FEIR, page II-2 through II-38.) The three revised alternatives considered were:

- (1) Project "Mitigated" Alternative
- (2) Cowell "Mitigated" Alternative
- (3) Nunn "Mitigated" Alternative

These revised alignments are essentially the same as the initial alignments in the DEIR except for the modifications related to the Kellogg Creek tributary and Domegine Sandstone outcrop. Accordingly, they were used in the final analysis of alternatives. The "Cowell Alternative" is now the "Cowell Mitigated Alternative" and the "Nunn Alternative" is now the "Nunn Mitigated Alternative." Where the "Project" is used, it is now the "Project Mitigated Alternative."

For the east/west portion of the State Route 4 Bypass Project, Marsh Creek Road was considered as the connector for the proposed Project. In addition, three alternative connector alignments considered in the DEIR in addition to the Marsh Creek Road were the:

- (1) Balfour Road Connector
- (2) East Contra Costa Irrigation District Canal Connector
- (3) Payne Avenue Connector

During the DEIR comment period, members of the public suggested an additional four alignment alternatives for the east/west connector, as follows:

- (1) Taylor Lane/Borden Junction Alternative
- (2) Hoffman Lane/CCWD Alignment Alternative
- (3) Armstrong Road/Byron Airport Alternative
- (4) Camino Diablo Alternative

These alternatives were examined in the Addenda to the DEIR (FEIR, pages II-3 through II-20), and the reasons for their rejection are described below.

SECTION B: PROJECT ALTERNATIVES CONSIDERED AND REJECTED

The formulation of the alternatives to the State Route 4 Bypass Project considered three factors:

- (a) The ability of each alternative to provide an effective bypass to direct traffic off of existing State Route 4 between Antioch and Brentwood, and to take regional traffic out of Oakley, Brentwood, and Antioch;
- (b) The reasonability and feasibility of each alternative; and
- (c) The ability of each alternative to reduce the environmental impacts identified in the State Route 4 Bypass Project. (FEIR, page II-2).

The Bypass Authority has selected road alignments for the Bypass and the East-West Connector based on the following criteria: avoid relocation of existing residents, avoid permanent land uses, avoid agricultural core lands, avoid severance of land parcels, protect archeological sites, protect habitats of endangered species, protect wetlands and riparian habitat, coordinate with existing and proposed utilities, and minimize project costs. Each criteria generally has equal priority and the goal is to obtain a proper balance between all of the various criteria, with the primary goal having an alignment that achieves the primary goals.

1. No Project Alternative

a. Description of Alternative

The No Project Alternative offers the Authority the opportunity to compare the impacts of the proposed project with the impacts that could occur if the State Route 4 Bypass Project is not constructed. Other approved future roadway improvements, such as the Vasco Road relocation project, would be implemented. The projected growth allowed under the County and cities general plans would still be expected to occur under the No Project Alternative. As a result, there would be an increase in traffic along existing traffic transportation facilities, which would impact air quality emissions. The level of air quality impacts would not substantially differ from those resulting from the proposed Project. The No Project Alternative would generate fewer vehicle miles traveled than the Phase I and Phase II Project for the comparison years studied, and the average speed under the No Project Alternative would be comparable to the Project.

b. Rejection of the No Project Alternative

The authority finds the No Project Alternative is rejected because it would not feasibly attain most of the basic objectives of the Project. The purpose of the Project is to provide a new route for State Route 4 that bypasses the communities of Antioch, Oakley and Brentwood to alleviate traffic-related noise and congestion on local streets, pursuant to the approved general plans for Antioch, Brentwood, and Contra Costa County and the Caltrans adopted Route Concept

Report for State Route 4. (Draft EIR, page II.39.)

Because growth allowed under the County and cities General Plans would still be expected to occur under this alternative, congestion along local roadways in the project area would increase. This would result in a worsening of volume to capacity (V/C) ratios than would be expected to occur under the Phase I and Phase II Project, which means the roadways would be more overloaded than under the Project. (DEIR, page IV.9.)

The No Project Alternative also fails to provide a new route to alleviate the regional traffic through the communities of Antioch, Oakley and Brentwood, one of the basic purposes of the project. (DEIR, page II-39.) It would also not be consistent with the programs and policies in the general plans for Antioch, Brentwood, and Contra Costa County. Each of these general plans includes a bypass project, sometimes referred to as the Delta Expressway. In particular, Contra Costa County's general plan includes an alignment for the project and calls for the State to incorporate the State Route 4 Bypass Project into the state highway system and to upgrade the facility to a freeway. (County General Plan, Goal 3-51.) The State Route 4 Bypass Project (Delta Expressway) is also a central tenet of Brentwood's circulation plan. (Brentwood General Plan, Chapter III.)

In addition, one of the primary goals of the Transportation and Circulation element of the Contra Costa County General Plan is to reduce cumulative regional traffic impacts of development through participation and cooperation in multi-jurisdictional planning processes and forums such as the State Route 4 Bypass Project, and to ensure the compatibility of land uses adjacent to major transportation facilities. (Goals 5-F, 5-H.)

The County General Plan also includes a policy that transportation rights-of-way be preserved to meet requirements of the Circulation Element and to serve future urban areas indicated in the Land Use Element. In addition, the development of a secondary road system of expressways shall be considered as part of a solution to congested freeways. (Policies 5-5, 5-9.)

The County General Plan also includes implementation measures such as 5-i with which the No Project Alternative is inconsistent. Measure 5-i requires the County to establish precise alignment plans for new or expanded arterials, expressways, and freeways in order to reserve adequate rights-of-way for alternate road system improvements indicated in the Road Network Plan. (e.g., Delta Expressway; State Route 4 Bypass Project, SR 4, etc.)

The No Project Alternative would be inconsistent with East County Area policies which propose restriction of access on State Route 4, encourage development of a bypass to State Route 4, and propose coordination with Caltrans and the cities in developing plans for State Route 4. More specifically, the No Project Alternative would be inconsistent with County General Plan goals 5-E, 5-F, policies 3-50, 3-51, 5-5, 5-9, and implementation measures 5-I, and 5-L.

The City of Antioch General Plan also identifies a proposed freeway or expressway extending south from State Route 4 on the eastern portion of Antioch. Antioch's General Plan Circulation Element policies include the coordination of circulation plans and elements with other jurisdictions in the east county, in particular, the planning, funding, and construction of the Delta Expressway (State Route 4 Bypass Project). The No Project Alternative would be inconsistent with the City of Antioch's policies for this proposed freeway or expressway. Although Antioch's General Plan identifies the proposed State Route 4 Bypass project as a 2-lane expressway, one of the mitigation measures for the project includes the amendment of the Antioch General Plan to provide for a 4-lane expressway.

The City of Brentwood's General Plan includes as a central planning assumption a proposed expressway along the western portion of the Brentwood planning area. In the City of Brentwood's General Plan, it is called the Delta Expressway, and is assumed that it will be a 4-lane freeway. The No Project Alternative would be inconsistent with these policies, including Transportation Goals 2 and 5. (Goal 2: Provide adequate connections between Brentwood, neighboring communities, and the region; Goal 5: Lessen through traffic on Highway 4 through downtown.) The No Project Alternative would also be inconsistent with Transportation Policies 2.1.3, 2.5.3, 2.1.4, 5.1, 5.1.1, 5.1.2, and 5.1.3. (DEIR, Page II.A.10 through II.A.14.)

The No Project Alternative also fails to provide a means of addressing inevitable growth identified in the County, Antioch and Brentwood general plans, and conflicts with the policies which direct orderly growth and mandate an adequate level of services. (See, e.g., Contra Costa County General Plan, Chapter 2; Goals 3-A, 3-H; and Policies 3-5, 3-6, and 3-7.) The Antioch and Brentwood general plans each include a Growth Management Element as required by Contra Costa County Measure C (1988). Both growth management elements include performance standards for public facilities and the local transportation network. The transportation standards apply to so-called "Basic Routes" and "Routes of Regional Significance," and require maintenance of a certain level of service for intersection operations. In the eastern Antioch and Brentwood areas, these Routes of Regional Significance include SR 4 and the proposed SR 4 Bypass. If the Bypass is not constructed and the requirements of Measure C are not met, it may deprive Antioch, Brentwood, and the County of sales tax revenue for roadway construction. (FEIR, Response to Comments C-4, page IV-24.)

For the reasons stated throughout these findings and particularly as stated in the Statement of Overriding Considerations, the Authority finds that the No Project Alternative is not appropriate and is therefore rejected for each of these reasons.

2. Arterial Upgrade Alternative

a. Description of Alternative

This alternative would upgrade the existing arterial network to accommodate the increase in the volume of traffic. Under this alternative, the additional north-south capacity along the arterials would provide the same overall level of service as the Phase I State Route 4 Bypass Project (year 2000.) For example, Lone Tree Way and Hillcrest Avenue would be in excess of 8 lanes. This alternative is described in more detail in the Draft EIR, Volume 3, page IV.14.

b. Rejection of the Short Route Alternative

Because the Arterial Short Route would avoid the most significant impacts associated with development of the Project right of way, it is the environmentally superior alternative. However, for the reasons discussed below, the Authority finds that this alternative is infeasible and would not meet one of the principle Project objectives of discouraging regional traffic from using local streets.

The Contra Costa County General Plan and the cities of Antioch and Brentwood's General Plans all indicate an alignment for the State Route 4 Bypass project, formerly called the Delta Expressway on the Land Use and Circulation Maps. Under the Arterial Upgrade Alternative, land designated for this future transportation project could be developed in other uses, which would conflict with the general plans. This alternative would also conflict with policies in each of these plans that encourage development of a bypass to State Route 4 and specifically reference

the Delta Expressway. This alternative would also be inconsistent with the objectives of moving regional traffic, particularly trucks, off local streets.

The Arterial Upgrade Alternative would require the relocation of existing residences and commercial properties adjacent to recently constructed roads and development, and would require reconstruction of those roads. It would also require relocation of utilities aligned with the current roadways. The widening of arterials in lieu of the State Route 4 Bypass would require the reconstruction of intersections and would still result in congested arterials, streets, and intersections throughout Brentwood and Oakley, and would therefore not accomplish one of the principle Project objectives of discouraging regional traffic from using local streets. This alternative was also rejected because it would have a significant impact on noise levels on residential and commercial land uses along the upgraded arterials designated as a truck route. (DEIR, pages IV.9 through IV.18.)

For the reasons stated throughout these findings and particularly as stated in the Statement of Overriding Considerations, the Authority finds that the Arterial Upgrade Alternative is not appropriate and is therefore rejected for each of these reasons.

3. Transit Alternative

a. Description of Transit Alternative

The Transit Alternative would apply the cost of the State Route 4 Bypass Project, approximately \$175 million, to purchase equipment and pay operating expenses for these services. The Project would not be constructed; rather the buses would operate on existing roads and designated transit routes. It is estimated that approximately 52 buses could be purchased. (DEIR, page IV-19.)

b. Rejection of Transit Alternative

The Contra Costa County General Plan and the cities of Antioch and Brentwood General Plans indicate an alignment for the State Route Bypass Project on their land use and circulation maps. Under the Transit Alternative, lands designated for this future transportation project could be developed in other uses instead of the Bypass, which would conflict with the general plans. The Transit Alternative would also conflict with the policies in each of these plans that encourage development of a bypass to State Route 4 and specifically reference the Bypass Project (as the Delta Expressway).

The Antioch and Brentwood general plans each include a Growth Management Element as required by Contra Costa County Measure C (1988). Both growth management elements include performance standards for public facilities and the local transportation network. The transportation standards apply to so-called "Basic Routes" and "Routes of Regional Significance," and require maintenance of a certain level of service for intersection operations. In the eastern Antioch and Brentwood areas, these Routes of Regional Significance include SR 4 and the proposed SR 4 Bypass. If the Bypass is not constructed and the requirements of Measure C are not met, it may deprive Antioch, Brentwood, and the County of sales tax revenue for roadway construction. (FEIR, Response to Comments C-4, page IV-24.)

Under this alternative, county-wide growth anticipated by the general plans of each jurisdiction would occur, resulting in an increase in traffic on the local transportation network. As a result, congestion along local roadways and the project area would increase substantially. The East County model estimates that the increase in transit use would represent 1,200 passengers, or about twenty-four percent (24%) of the peak-direction, peak-hour demand for the Phase II expressway. (Contra Costa County Transportation Authority East County Model.) These 1,200 passengers would provide some measure of congestion relief in the Project area, although not as high as the proposed expressway, and therefore significant traffic impacts will result from this alternative. In addition, the Transit Alternative would not provide a highway bypass for trucks through Oakley and Brentwood, one of the primary objectives of the State Route 4 Bypass Project. Traffic impacts, therefore, would be greater than under the project and would not shift trucks off existing Highway 4.

For the reasons stated throughout these findings and particularly as stated in the Statement of Overriding Considerations, the Authority finds that the Transit Alternative is not appropriate and is therefore rejected for each of these reasons.

4. Toll Road Alternative

a. Description of Toll Road Alternative

Under the Toll Road Alternative, it is assumed that the 9.3 mile-long State Route 4 Bypass Project is established as a Toll Road using the same right-of-way as the Project. The Toll Road would extend from Antioch to the Project's connection with the relocated Vasco Road, south of Camino Diablo.

b. Rejection of Toll Road Alternative

The Toll Road Alternative would require improvements in the local circulation systems to accommodate the Toll Road design requiring 1 mile interchange spacing, i.e., longer distances between interchanges than for the Bypass. This would result in some short-haul trips avoiding the Toll Road and using the local streets instead. (FEIR, page IV-23, Response to Comments C-1.) As a result, the effect of the Toll Road would be to divert shorter trips off the Toll Road to local roads, thereby increasing the traffic impacts on local roads. This would be in conflict with one of the basic objectives of the Project, i.e., to avoid regional through traffic using local streets in Oakley and Brentwood.

In addition, to the extent that the development would compete with the Mid-State Toll Road, it may not be permitted by Caltrans. The Development Franchise Agreement for a Privatized Transportation Project by and between California Toll Road Company and the State of California's Department of Transportation, January 4, 1991, prohibits Caltrans from issuing permits to facilities that will compete with the Mid-State Toll Road. (FEIR, page IV-56, Comment I.6.) Moreover, the California Toll Road Company has a state franchise for a mid-state tollway, which would include the State Route 4 Bypass, until the year 2004. Consequently, the Authority would not have authority to operate a toll way until after the 2004.

The Toll Road Alternative would also require additional improvements to collect tolls, which would not otherwise be needed, such toll collection barriers and booths.

For the reasons stated throughout these findings and particularly as stated in the Statement of Overriding Considerations, the Authority finds that the Toll Road Alternative is not appropriate and is therefore rejected for each of these reasons.

5. Short Route Alternative

a. Description of Alternative

The Short Route Alternative would provide a bypass of Hillcrest Avenue and existing State Route 4 through Oakley, the portion of the roadway network anticipated to have the highest congestion levels. It would include a partial interchange at SR 4/SR 160 (to and from the west), and at-grade intersections at Laurel and Lone Tree Way. Lone Tree Way would be upgraded to an expressway east to SR 4, and extended east to Sellers Avenue as an expressway. The bypass of downtown Brentwood would be accomplished on the east, rather than the west of the city, via the extension of Lone Tree Way and upgrading of Sellers Avenue.

The Short Route Alternative would avoid the most significant impacts associated with the development of the project right-of-way, and is therefore the environmentally superior alternative. (DEIR, page IV-2.)

b. Rejection of Short Route Alternative

The Contra Costa County General Plan and the Cities of Antioch and Brentwood General Plans indicate an alignment for the State Route Bypass Project (formerly called the Delta Expressway) under land use and circulation maps. This alignment extends from Antioch to south of Brentwood, on the west side of the City of Brentwood. Since the Short Route Alternative would be on the east side, it would also conflict with these plans. There is considerable existing development and planned growth on the east side of Brentwood. Construction of the Bypass on the east side would significantly impact the existing residences and conflict with planned infrastructure and residential and commercial development on the east side.

Under the Short Route Alternative, since only a portion of the project would be constructed, lands designated for this future transportation project could be developed in other uses, which would also conflict with the general plans. The Short Route Alternative would also conflict with policies in each jurisdiction's general plan, which provide for development of a bypass to State Route 4, and specifically reference the State Route 4 Bypass Project (as the Delta Expressway). (DEIR, pages IV.28 through IV.30.)

For the reasons stated throughout these findings and particularly as stated in the Statement of Overriding Considerations, the Authority finds that the Short Route Alternative is not appropriate and is therefore rejected for each of these reasons.

6. Cowell "Mitigated" Alternative

a. Description of Alternative

This alternative would relocate the southern section of the Bypass between Marsh Creek Road and the connection with the relocated Vasco Road to the east as indicated on Figure IV.5 of the DEIR. (Page IV-31.) The roadway improvements and right-of-way width would be the same as under the Project. Based on consultations with state and federal resource agencies, this alternative was revised to avoid the tributary to Kellogg Creek and the area west of the Domegine Sandstone rock outcrop. Because this revised alternative is essentially the same as the Cowell Alternative with this mitigation incorporated, it is described as the Cowell "Mitigated" Alternative for purposes of this analysis.

b. **Definition of Primary/Secondary Impact as Used in the Final EIR and The State Route 4 Bypass Alternative Alignment Study**

Definitions of direct impact and secondary impact used in the Final EIR is somewhat different from the definition used in the State Route 4 Bypass Alternative Alignment Study, dated November 21, 1994. However, although the definition and methodology of assessing the Agricultural Core impact differs slightly, the result of the analysis in both cases leads to similar results in terms of the total amount of Agricultural Core acreage which will be significantly impacted by the Bypass Project. The basis for these different definitions as used in each is discussed above, in Section 6.b. "Direct impact" is defined in the Final EIR as the direct physical intrusion due to Bypass right-of-way and any parcels which would not be farmable (or be able to sustain a substantial decrease in agricultural utility) as a result of the alignment eliminating access to Marsh Creek Road. Also included in the definition of impact is the ability to use the acreage for agricultural purposes after the location of utility lines in conjunction with the roadway.

"Secondary impact" is defined in the Final EIR as the acreage separated by the Bypass project from the main Agricultural Core lands, thus reducing the agricultural usefulness of that separated portion. The DEIR suggests that the area split from the core may eventually be rezoned to an urban use.

In the FEIR, the Nunn "Mitigated" and Project "Mitigated" Alternatives have only direct impacts. The secondary impact attributed to the Cowell "Mitigated" Alignment is based on the separation from the Agricultural Core lands. The EIR states that the degree of this impact is unknown and that the Bypass Authority may consider further investigation to clearly define "secondary impact."

In the State Route 4 Bypass Alternative Alignment Study, direct impact is defined as land used only for the Bypass right-of-way. Secondary impact is defined as area separated from the main agricultural core. It is assumed in this analysis that if a parcel has had its access to Marsh Creek Road eliminated, that an alternate access would be found. It also assumes that an agricultural use that would be considered acceptable by the Water District in the area of the Los Vaqueros Pipeline would be found so that these parcels could maintain their agricultural usefulness.

c. **Rejection of Cowell "Mitigated" Alternative**

The Cowell Mitigated Alternative would directly impact approximately 57.8 acres of Agricultural Core land by using that land for the Bypass construction. This acreage includes the area located within the limits of the Bypass right-of-way and the southern remainder of the Lindsey property since the size of the parcel would have decreased utility for agricultural production. A secondary impact to the Agricultural Core is the approximately 59 acres of agricultural land which will be separated from the main Agricultural Core, for a total of impacts to almost 120 acres of Agricultural Core lands. As a result of the severance, this property will have less utility as farm land. (FEIR, page II-31.)

The Cowell Mitigated Alternative also requires the acquisition and/or relocation of a commercial site. In the Final EIR, the alignment analyzed had not accounted for the mitigation at the south end approximately at or near the Domegine Sandstone deposit. As a result, the analysis indicated that the alignment avoided both relocating the residence and the business. Once this mitigation was applied to the Cowell alignment, the business again required relocation, as stated in the State Route 4 Bypass Alternative Alignment Study. As a result, the

socioeconomic impacts are undesirable.

The impacts to the Kellogg Creek tributary and Domegine Sandstone deposit are similar to those in the Nunn Mitigated and Project Mitigated alternatives. However, the Cowell Mitigated Alternative will have slightly greater noise impacts than either the Project "Mitigated" or the Nunn "Mitigated" alternatives on residences within the 60 dBA contour. (FEIR, page II-28.)

For the reasons stated throughout these findings and particularly as stated in the Statement of Overriding Considerations, the Authority finds that the Cowell Alternative is not appropriate and is therefore rejected for each of these reasons.

7. The Project "Mitigated" Alternative

a. Description of Project "Mitigated" Alternative

The "Project" is defined in the DEIR, page II.2, and described in the first portion of these Findings of Fact, Exhibit A to the Authority's Resolution. As a result of consultations with state and federal resource agencies, the Project described in the Draft EIR was modified to avoid the tributary to Kellogg Creek in the wetland area west of the Domegine Sandstone rock outcrop. The revised Project alignment is referred to as the Project "Mitigated" Alternative and is more specifically described in the Addenda to the Draft EIR in Figure II.A-7 (FEIR, page II-24).

b. Rejection of Project "Mitigated" Alternative

The direct impact of the Project "Mitigated" Alternative on the Agricultural Core lands would be approximately 66.2 acres. (FEIR, page II-26.) This is greater than the impact on the Agricultural Core lands from the "Nunn Mitigated" Alternative and is inconsistent with agricultural land preservation policies of the County of Contra Costa and cities of Brentwood and Antioch.

Definitions of direct impact and secondary impact used in the Final EIR is somewhat different from the definition used in the State Route 4 Bypass Alternative Alignment Study, dated November 21, 1994. However, although the definition and methodology of assessing the Agricultural Core impact differs slightly, the result of the analysis in both cases leads to similar results in terms of the total acreage of Agricultural Core land which will be significantly impacted by the Bypass Project. In order to explain the basis for these different definitions as used in each is discussed above, in Section 6.b.

The Project Mitigated Alternative alignment also has a significant effect on two houses because they are located within the 60 dBA noise contours for this alternative. (FEIR, page II-25.)

For the reasons stated throughout these findings and particularly as stated in the Statement of Overriding Considerations, the Authority finds that the Project "Mitigated" Alternative is not appropriate and is therefore rejected for each of these reasons.

SECTION C: ALTERNATIVE EAST/WEST CONNECTOR ALIGNMENTS

As part of its evaluation of the SR 4 Bypass Project, the State Route 4 Bypass Authority considered alternatives for the portion of the project described as the east/west connection

between the roadway alternatives and SR 4. The Bypass Authority staff determined that Marsh Creek Road would be the preferred east/west connector to SR 4, and the impacts that alignment are therefore considered as part of the Project in the DEIR. The proposed improvements to Marsh Creek Road would include upgrading the two-lane road to state highway standards, which would include the provision of 10-foot shoulders along the alignment, signalized intersections, and protected turning movements. While Marsh Creek Road would remain a two-lane road, the Bypass Authority would protect a 110-foot right-of-way as requested by Caltrans to allow for the option of future improvements. For the east/west portion of the Bypass Project, three connectors in addition to Marsh Creek Road were considered during preliminary analysis. During the DEIR Comment period, members of the public suggested an additional four alignment alternatives for the east/west connector. A description of those alternatives, and the reasons for rejection of these alternatives, are provided below.

The Marsh Creek Road Connector Alternative, which is included in the Project, proposes to improve Marsh Creek Road with wider shoulders and turn-lane intersections and to preserve additional right-of-way. Because this alternative will have the least impact (as well as the least cost) it is recommended by the State Route 4 Bypass Authority staff.

1. **Balfour Road Connector**

a. **Description of Alternative**

This connector would travel east from the Bypass to existing State Route 4 along Balfour Road for approximately 2.3 miles. The existing alignment is very flat and straight. Since this is an existing roadway, grading would be minimal. (DEIR, page IV, 36 through 39.)

b. **Rejection of the Balfour Road Connector**

This alternative is rejected because it does not fulfill one of the primary Bypass Project objectives, which is to route regional traffic around the community of Brentwood. In addition, Balfour Road between the Bypass and downtown Brentwood is fronted by numerous residences. The Brentwood General Plan indicates considerable development planned at the interchange area, as well as at the intersection with SR 4. Future widening would therefore impact a large number of residences and development. In addition, this connector would have to carry regional traffic as well as local traffic if it is the selected route and its regional traffic would pass through residential areas. This would conflict with one of the primary Project objectives. (DEIR, page IV-38, FEIR, page II-3.)

For the reasons stated throughout these findings and particularly as stated in the Statement of Overriding Considerations, the Authority finds that the Balfour Road Connector Alternative is not appropriate and is therefore rejected for each of these reasons.

2. **East Contra Costa Irrigation District Canal Connector**

a. **Description of Alternative**

This connector would extend to the east from the Bypass to State Route 4 at a point approximately .5 miles south of Balfour Road. This connector would be approximately 2.6 miles in length, and would be very flat with some minor curvature at the west end of the alignment.

b. Rejection of the East Contra Costa Irrigation District Canal Connector

This alternative was rejected because access from the Bypass would be via the Balfour Road interchange, which would not provide a direct connection to the Project. In addition, the connection to SR 4 would be adjacent to the Southern Pacific Railroad, which would result in a very expensive and complex connection. The vertical clearance required for the road would be approximately 23 feet; therefore, the east/west connector must be elevated at least 25 feet in the air. The proposed connection with SR 4 is adjacent to the railroad, and these limited distance between the overpass over the railroad and the connection to SR 4 would make it impossible to descend to the current elevation at the SR 4 interchange. In addition, the crossing at Marsh Creek could impact the riparian habitat.

For the reasons stated throughout these findings and particularly as stated in the Statement of Overriding Considerations, the Authority finds that the East Contra Costa Irrigation District Canal Connector Alternative is not appropriate and is therefore rejected for each of these reasons.

3. Payne Avenue Connector

a. Description of Alternative

This 2.6 mile-long connector would extend east from the Bypass to State Route 4 at a point approximately 1 mile south of Balfour Road, partially along existing Payne Avenue alignment and partially on a new alignment (Extension of Payne Avenue to the west.) The alignment would be very flat and straight, and would cross Marsh Creek on the portion that would be new construction. The Marsh Creek crossing would be a culvert and low bridge installation. (DEIR, page IV-38; FEIR, page II-4.)

b. Rejection of Payne Avenue Connector

This alternative to the State Route 4 Bypass would not be a direct connection, because a direct connection would violate the minimum 1 mile space in between interchanges/intersections for the Bypass required by design standards. To connect to the Bypass would require a connection to the Balfour interchange or the Marsh Creek Road intersection and connecting roads. The connector would require substantial improvements to most of the alignments and new construction to the west. It would also require substantial improvements at its intersection with SR 4 because of the proximity of the Southern Pacific Railroad. In addition, it would require a new crossing of Marsh Creek. These involve substantial construction and related environmental impacts not required for the Marsh Creek Road alignment because it utilizes an existing road. (DEIR, page IV-38, 39.)

For the reasons stated throughout these findings and particularly as stated in the Statement of Overriding Considerations, the Authority finds that the Payne Avenue Connector Alternative is not appropriate and is therefore rejected for each of these reasons.

4. Taylor Lane/Borden Junction Alternative

a. Description of Alternative

This alignment would begin at the new Vasco Road just southeast of Walnut Boulevard and extend due east to join with SR 4 at Borden Junction. This would be a 3.1 mile route, and would be entirely new roadway construction. (Addenda to Draft EIR, II-4, II-5.)

Of the 3.1 miles, 2.6 miles of the proposed new road would be through open space. The remaining .5 miles would be along the existing Taylor Lane alignment; however this would be complete by new pavement reconstruction since the existing pavement is not adequate. (FEIR, page II-4; State Route 4 Bypass East-West Connector Alternatives Study, page 8.)

b. Rejection of Taylor Lane/Borden Junction

This connector would include more than 2.5 miles of the route in Agricultural Core land, which is in conflict with the polices and general plans of Contra Costa County, Brentwood, and Antioch. The proximity of the ultimate Walnut Boulevard interchange and intersection of the alternative connector to the new Vasco Road causes a problem because the distance between the interchange and intersection does not provide the 1-mile separation required by the design standards.

This project is also rejected because of the environmental impacts associated with it. The 2.6 miles of new road pavement through existing open space and agricultural land is a significant environmental impact. The direct impact to Agricultural Core land is approximately 35 to 40 acres, and this conflicts with one of the project criteria as well as the communities' general plans. In addition, portions of the area are considered potential San Joaquin kit fox habitat. The San Joaquin kit fox is a federal endangered species and a state-listed threatened species. In addition, this alternative would impact 19 homes and 2 businesses and would split several ranches.

Because this alternative includes the construction of a new Southern Pacific Railroad Crossing, a grade separation would be required. In contrast, Marsh Creek Road is an existing road so the current at-grade railroad crossing would remain. For the reasons stated throughout these findings and particularly as stated in the Statement of Overriding Considerations, the Authority finds that the Taylor Lane/Borden Junction Alternative is not appropriate and is therefore rejected for each of these reasons.

4. Hoffman Lane/CCWD Alignment Alternative

a. Description of Alternative

This connector alignment would begin at the new Vasco Road almost one mile southeast of Walnut Boulevard and extend due east 3.1 miles following the CCWD Old River Pipeline Alignment to join with Byron Highway in the vicinity of existing Hoffman Lane. The road would then continue, joining SR 4 east of Gordon Junction. The entire east/west connector would be a 3.6 mile route with 3.1 miles of proposed new roadway through agricultural land and open space. A remaining .5 miles would be along the existing Hoffman Lane alignment; however, this would be complete pavement reconstruction since the existing pavement is not adequate. (FEIR, page II-4, State Route 4 Bypass East-West Connector Alternatives Study, page 10-11.)

b. Rejection of Hoffman Lane/CCWD Alignment Alternative

The direct impact to Agricultural Core land is approximately 40-42 acres, which conflicts with the Project selection criteria and the three communities general plans. A portion of this area is considered kit fox habitat, which could make construction difficult or impossible because of the protected status of the San Joaquin kit fox. (FEIR, page II-74.) The San Joaquin kit fox is listed by the federal government as endangered and by the State of California as a threatened species. This alternative also would include two crossings of Kellogg Creek.

In addition, since the Hoffman Lane Alternative includes the construction of a new Southern Pacific Railroad Crossing, a grade separation would be required. In contrast, Marsh Creek Road Alternative would not require this improvement since Marsh Creek Road has an existing at-grade railroad crossing.

For the reasons stated throughout these findings and particularly as stated in the Statement of Overriding Considerations, the Authority finds that the the Hoffman Lane/CCWD Alignment Alternative is not appropriate and is therefore rejected for each of these reasons.

6. **Armstrong Road-Byron Airport Alternative**
a. **Description of Alternative**

The existing Armstrong Road would be extended to the west to join with new Vasco Road and also extend to the east to join with Byron Highway in the vicinity of the Byron Airport. This alternative would be 2.3 miles with .7 miles of new roadway. (FEIR, II-4, II-5.)

b. **Rejection of Armstrong Road Connector Alternative**

This alternative is rejected primarily because it would not significantly reduce traffic occurring on Marsh Creek Road. This is a logical result from the traffic model since Armstrong Road is located 3.5 miles south of Borden Junction. Marsh Creek Road would therefore continue to carry SR 4 traffic traveling to Discovery Bay or the Central Valley and would operate as a defacto connector.

For the reasons stated throughout these findings and particularly as stated in the Statement of Overriding Considerations, the Authority finds that the Armstrong Road-Byron Airport Alternative is not appropriate and is therefore rejected for each of these reasons.

7. **Camino Diablo Connector Alternative**

a. **Description of Alternative**

Camino Diablo currently extends approximately 1.5 miles from the proposed crossing with the new Vasco Road to Byron Highway. To connect back to SR 4, traffic must utilize 1.3 miles of Byron Highway to reach SR 4 at Borden Junction as well as 1,000 feet of Holway Drive. This segment of Byron Highway (1.3 miles) would need to be improved in order to meet State Highway Standards. It is anticipated that .5 miles of Camino Diablo would require horizontal and vertical realignment and road reconstruction in order to meet State Highway Standards. The remaining mile of Camino Diablo and the entire portion of Holway Drive would be improved by partial overlay and partial pavement reconstruction.

b. **Rejection of Camino Diablo Connector Alternative**

This alternative is rejected primarily because it will not have a significant benefit to Marsh Creek Road, because it is not a direct route between SR 4 and the Bypass. Marsh Creek Road will continue to be used as a de facto connector. Marsh Creek Road would have significant traffic impacts.

In addition, approximately 50 to 60 homes would be impacted by this alternative and maybe an associated negative economic impact to the community of Byron. It is the intent of the Bypass project to route regional traffic away from town centers in order to improve safety and improve the character of these communities. This alternative would conflict with this

objective of the Project. (Insert: Because it is not a direct route between SR 4 and the Bypass.)

This alternative would cross the Southern Pacific right-of-way adjacent to Byron Highway, which would require grade separation and could disrupt local circulation and land uses.

For the reasons stated throughout these findings and particularly as stated in the Statement of Overriding Considerations, the Authority finds that the Camino Diablo Connector Alternative is not appropriate and is therefore rejected for each of these reasons.



ENVIRONMENTAL IMPACT REPORT

STATE ROUTE 4 BYPASS PROJECT



EXHIBIT C: STATEMENT OF OVERRIDING CONSIDERATIONS

STATE ROUTE 4 BYPASS AUTHORITY

DECEMBER 13, 1994

EXHIBIT C: STATEMENT OF OVERRIDING CONSIDERATIONS

SECTION A: GENERAL INTRODUCTION

In approving the State Route 4 Bypass Project (the "Project") which is the subject of the Final Environmental Impact Report ("FEIR"), the Authority makes the following Statement of Overriding Considerations in support of its findings on the FEIR. The Authority has considered the information contained in the FEIR, and has fully reviewed and considered the public testimony and record in this proceeding.

The Authority has carefully balanced the benefits of the proposed Project against the unavoidable adverse impacts identified in the FEIR. Notwithstanding the disclosure of impacts identified in the FEIR as significant and potentially significant, and which have not been eliminated or mitigated to a level of insignificance, the Authority, acting pursuant to section 15093 of the State CEQA Guidelines, hereby determines that the benefits of the Project outweigh the significant unmitigated adverse environmental impacts.

The FEIR identifies each of the potential adverse impacts which cannot be mitigated to a level of insignificance if the project is implemented with adopted mitigation measures. These impacts are listed below by impact number:

III.A.3, III.A.4, III.B.1, III.B.2, III.B.4, III.C.1, III.C.2, III.D.1, III.D.2, III.E.3, III.F.2, III.G.2, III.G.5, III.H.4, III.H.5, III.J.9-II, III.J.10, III.J.11, III.K.2, III.L.1, III.M.8, III.N.9, V.A.1, V.B.1, V.B.2, V.B.3, V.B.4, V.B.5, V.B.6, V.B.7, V.B.8, V.B.9, V.B.10, V.B.11, V.B.13, V.B.15, V.B.16, V.B.17, V.B.18, V.B.19, V.B.20, V.B.21, V.B.22, and V.B.24

Although the Authority believes that many of the unavoidable and irreversible environmental effects identified in the FEIR, as well as many of the environmental effects which have not been mitigated to a point of insignificance will be substantially lessened by the mitigation measures incorporated into the proposed Project, it recognizes that implementation of the Project introduces certain unavoidable and irreversible environmental impacts.

SECTION B: SPECIFIC FINDINGS

1. Project Benefits Outweigh Unavoidable Impacts

The remaining unavoidable and irreversible impacts of the Project are acceptable in light of the economic, fiscal, social, planning, land use and other considerations set forth herein because the benefits of the Project outweigh any significant and unavoidable or irreversible adverse environmental impacts of the Project.

2. Balance of Competing Goals

The Authority finds it is imperative to balance competing goals in approving the Project and the environmental documentation for the Project. Not every policy or environmental concern has been fully satisfied because of the need to satisfy competing concerns to a certain extent. Accordingly, in some instances the Authority has chosen to accept certain environmental impacts because to eliminate them would unduly compromise some other important economic, social or other goals. The Authority finds and determines that the text of the Project and the supporting environmental documentation provide for a positive balance of the competing goals and that the economic, fiscal, social, planning, land use and other benefits to be obtained by the Project outweigh the environmental and related potential detriment of the Project.

SECTION C: OVERRIDING CONSIDERATIONS

The Authority specifically finds that to the extent the identified adverse or potentially adverse impacts have not been mitigated to less than significant levels, there are specific economic, social, planning, land use and other considerations which support approval of the proposed Project, as follows. Moreover, the Authority finds that where more than one reason exists for any finding, the Authority finds that each reason independently supports these findings.

1. Economic Considerations

Substantial evidence is included in the record of these proceedings and in the relevant jurisdictional planning documents for the region, demonstrating the economic benefits which would result from the implementation of the proposed Project. The Authority has balanced these economic considerations against the unavoidable and irreversible environmental risks identified in the FEIR and has concluded that those impacts are outweighed by the economic and other benefits. They are addressed in the Authority's Findings of Fact. In particular, the Authority considered those impacts relating to existing plans and policies, land use, transportation/circulation, air quality, noise, visual and aesthetic resources, biological resources, soils, geology and seismicity, hydrology, flooding, and drainage, public services, utilities, hazardous materials, public health and safety, energy, and cultural resources. Upon balancing the environmental risks and countervailing benefits, the Authority concludes that the economic benefits which will result from the implementation of the Project outweigh those environmental risks.

(a) Balance of Land Uses

One of the fastest growing commutes in the Bay Area is from East Contra Costa County across the Diablo Range into and through the Central County. The primary route through this commute is Highway 4, a four-lane freeway from Central County across Willow Pass to Antioch, and a 2-lane highway from Antioch through Brentwood to San Joaquin County. To achieve the planned and approved development in East County, especially in the east Antioch, Oakley, and

Brentwood areas, additional transportation capacity will be needed. Officials in the East County rank a bypass to Highway 4 from Antioch past Brentwood as one of two facilities having the highest transportation priority in the area. (Preliminary Draft, Contra Costa County Comprehensive Transportation Plan, July 20, 1994).

Although the jurisdictions in East County plan for significant job growth, significantly more housing growth is forecast. The area already contains substantially more houses than jobs with the result that many workers commute to jobs outside of East County. Many of these jobs are located in Central County, the Tri-Valley, other parts of Alameda County and even Santa Clara and San Francisco. The recently-adopted Brentwood General Plan would allow a five-fold increase to about 60,000 persons over the next 20 years. The City of Antioch has approved development agreements and tentative maps for around 12,000 new housing units. In total, East County jurisdictions have approved about 23,000 new housing units. Proposed developments in unincorporated Contra Costa County such as the Cowell Ranch would, if approved, add more development, including both jobs and housing. East County jurisdictions have relied on additional transportation improvements in their planning, and these improvements will be needed to support forecasted development. (Preliminary Draft, Contra Costa Countywide Comprehensive Transportation Plan, July 1994.)

Travel conditions in Contra Costa County are greatly influenced by its location on the eastern side of the San Francisco Bay Metropolitan Region. Commute patterns are especially affected by the employment centers in San Francisco and Alameda County and the residential areas of Solano County. Over eighteen percent (18%) of all trips and forty-six percent (46%) of work trips originating in Contra Costa County are destined for another Bay Area county (Contra Costa County General Plan ("G.P.") 1991, page 5-4.) Such inter-County patterns are recognized not only in the Contra Costa County General Plan, but also in the General Plans of Antioch and the City of Brentwood.

In attempting to provide for the travel demand forecasts, certain goals and policies were identified in individual general plans to guide the County, and the Cities of Antioch and Brentwood in their future facilities construction. Among those various goals and policies has been the identified need to provide for transportation improvements to accommodate the estimated 1.5 million person trips generated each weekday by the year 2005. (Contra Costa G.P., page 5-10.)

Although transportation design is only one component of a development, conservation, and economic blueprint for a local jurisdiction, a well-balanced and planned transportation network provides for and accommodates anticipated employment and residential growth and helps to relieve existing congested roadways. State Route 4 has been recognized in all of the regions general plans as part of a refined transportation network, which gives public and private interests a vision of needed improvements and an opportunity to assess costs and develop funding programs well in advance of actual growth.

The existing State Route 4 is an at-grade limited-capacity highway with direct access

to the roadway from adjacent schools, shopping centers, and residences. Under this existing situation regional traffic (particularly truck traffic) is mixed with local traffic. Because of low speeds on local roads and heavy cross traffic, lane capacity on existing State Route 4 is limited and opportunities to improve capacity are limited due to the proximity of the existing adjacent land uses. Major disruptions and relocations would result if the existing State Route 4 were improved and the increase to capacity would not be adequate to serve both local and regional traffic.

The Project will balance land uses by providing a new route for State Route 4 that bypasses the communities of Antioch, Oakley, and Brentwood in order to alleviate traffic-related noise and congestion on local streets pursuant to the adopted general plans for Antioch, Brentwood, and Contra Costa County, and Caltrans adopted Route Concept Report for State Route 4 (DEIR, Volume 3, II.39.)

Land Use and Transportation Policies in the Contra Costa County General Plan which support the establishment of the Bypass Project include Policies 3-50, 3-51, 3-66, 3-67, Goal goals 5.E, 5.F, 5.H, and 5.R. Also relevant are Circulation Phasing and Coordination Policies 5.1, 5-3, and 5-5. Moreover, Policies 5-9 and 5-10 encourage development of a secondary road system to minimize use of freeways for community circulation. The Project will fulfill these goals reducing cumulative regional traffic impacts of development through participation and cooperative multi-jurisdictional planning processes which designate State Route 4 as an identified transit way.

Buildout of the Brentwood General Plan will result in an estimated population of 79,000 and employment of nearly 28,000. This growth will result in daily travel in Brentwood growing to approximately 316,700 trips by buildout. The new State Route 4 is identified in the City of Brentwood's Roadway Circulation Plan. (Page 3.3-4.) Moreover, Policies 2.1.1 through 2.1.6 encourage mitigation of regional traffic impacts and direct the City to continue to participate with the State Route 4 Bypass Authority to improve regional circulation.

Finally, the Project will implement Antioch's goals for the location of a transportation corridor extending south from State Route 4 in the eastern portion of Antioch, and will fulfill circulation Policies 1, 3, and 4 accommodating projected future traffic levels in coordination with other local jurisdictions.

In sum, the Project is directly tied to the balance of land use patterns that have been approved and continue to evolve in the County of Contra Costa and the Cities of Brentwood and Antioch. These in turn, provide the necessary infrastructure to accommodate transportation needs for commercial and residential land uses and associated employment opportunities in the region.

(b) Positive Fiscal Impacts

The Project provides for economic development in that it provides access to lands designated in the General Plans for commercial and office uses. This provides a balance for a significant number of homes already allowed under the general plans and eliminates or reduces out-commuting in some areas. (Antioch, Brentwood, and Contra Costa County General Plans.)

For example, the Brentwood General Plan recognizes that employment centers along the project are anticipated to provide for more employment and regional retail opportunities. Moreover, Brentwood anticipates that the proposed Project will function as a window to the community and that uses along its alignment should reflect the community's high quality development standards. The Project supports Brentwood's Land Use, Goal 3, Policy 3.2.1, Goal 4, and Policies 4.3.1 and 4.3.2. (Brentwood General Plan, II.1.5.)

Likewise, the City of Antioch has provided for economic growth in Future Urbanization Area Nos. 1 and 2 which envision residential uses supported by nonresidential uses including employment, commercial, retail special use, open space, and schools with a strong focus on the inclusion of employment generating land uses in area No. 2 (Antioch G.P. 1988, and Antioch Infrastructure Plan, 1992.) The Project is specifically assumed as part of area No. 2 to facilitate transit for the proposed employment opportunities.

Implementation of the Project will ensure that the economic growth is realized, thereby resulting in positive fiscal impacts to the region.

(c) Economic Benefits from Construction

There are several economic benefits that will come from the construction of the Project. These benefits will accrue to the Project region and will last throughout the buildout of the Project. The costs of Project construction, combined with costs of construction of associated proposed or assumed new development, will contribute construction income to the region by creating temporary construction jobs and permanent maintenance jobs.

As proposed, the Project would be implemented in two phases: Phase I would be completed in the year 2000, and Phase II would be completed by the year 2010. The Project will create construction jobs as well as call for the purchase of materials from local suppliers. The estimated cost for the project is \$175,000,000.00 assuming right-of-way dedication, and 195,000,000.00 assuming right-of-way acquisition. (Technical Advisory Committee Staff Report, January 26, 1993; DEIR, Volume III, page I.2; and Draft 1993 Contra Costa Congestion Management Program, page E.1.).

(d) **Economic Growth Through Retail Commercial and Industrial Development**

The Project fulfills the goals of the County of Contra Costa and Cities of Antioch and Brentwood by enabling balanced land uses resulting in economic growth. The Project provides regional access to commercial, retail, and industrial sites consistent with the Brentwood General Plan Policy 3.2 to establish a regional commercial center in Brentwood, concentrating regional commercial development in the Project at Land Creek Road. Brentwood's goal for economic development which are fulfilled by the Project include Goals 1, 2, 3, 4, and 5, and Policies 1.4.4, 1.4.6, 2.1.2, 3.2.2, 3.3.1, and 3.3.2.

In Antioch, Future Urbanization Area No.2, which assumes the Project as a component of that area, promotes the inclusion of employment generating commercial, retail, and industrial land uses as well. (Antioch G.P. 1988.)

Similarly, the Contra Costa County General Plan mandates concentrations of commercial and industrial development near major transportation corridors and facilities (Policy 3-41). It also envisions business and employment opportunities via retail commercial and industrial development coupled with transportation policies to facilitate this growth, which policies specifically incorporate the Project (Contra Costa G.P. Policies 3-49, 3-50, 3-54, and 3-52.)

2. Social Considerations

These proceedings contain substantial evidence that the implementation of the proposed Project provides a mechanism to further social goals that have been adopted by the Authority. In an attempt to retain and enhance the region's quality of life, while comprehensively addressing future development issues on the basis of region-wide needs, the proposed Project provides various social benefits including but not limited to the following:

The project will provide access to an area that provides lower cost housing (Contra Costa County General Plan).

(a) **Permanent Job Creation**

The Project will ensure that the necessary transportation facilities will be available to job creating businesses.

The Project will provide access to facilitate the creation of an employment base in the region. As discussed above, the need for job creation was heralded by the Antioch, Brentwood, and Contra Costa County General Plans and will be implemented by the identified goals and policies. One way the Project accomplishes this is by eliminating regional traffic from downtown areas of Brentwood and Oakley to allow for development of local businesses and redevelopment. (County and Brentwood General Plans - Oakley Redevelopment Plans.

The Authority finds that adoption and implementation of the proposed Project will best promote the transportation needs of the region in the face of growth pressures. For example, while the east Contra Costa County area was a fast-growing residential area, the number of jobs created there have lagged far behind housing construction. (Contra Costa County G.P. Appendix, page 13.)

(b) Planning and Land Use Consideration

It has become increasingly apparent that regional growth influences have required the Authority to take affirmative planning steps that will handle increased traffic and limited capacity of the existing State Route 4, by enhancing transportation capabilities to provide for future development. The Project reaffirms this pre-existing accommodation policy and, with mitigation, establishes detailed implementation programs that will both preserve and promote the balance of community interests addressed in the General Plans.

The Project is a fundamental local transportation improvement necessary for accommodating local and regional growth and it would implement important local and regional development plans and circulation policies. For example, in the City of Antioch an extension of Wildhorse Road from the Nelson Ranch subdivision limits, a proposed frontage road called Sunset Drive, and an extension of Laurel Road to connect with Hillcrest Avenue, are anticipated and compatible projects. (DEIR, Volume 3, page 2-13 and 2-14.)

Moreover, the Project would be located along the eastern boundary of a development of 300 single-family homes on approximately 100 acres located west of the City of Brentwood. Also, near the City of Brentwood is the Hancock project specific plan, a 920 six-unit single-family residential project clustered around an 18-hole golf course. It would include an on-site neighborhood shopping center and neighborhood parks would also be included in the proposed development. Access to the development would be facilitated by the Project, which would extend along the edge of the Hancock project (DEIR, Volume 3, page II.18.) The Project would also extend along the eastern edge of the development site of the A. G. Spanos Brentwood Hills Country Club, a proposed development to construct 1622 single-family residences clustered around an 18-hole golf course on a 751 acre site located immediately southwest of Brentwood. An on-site neighborhood shopping center and employment center, 600-student elementary school, 40-student daycare facility, and on-site parks would also serve the residents (DEIR, Volume 3, page II.20.)

An easement for the Project is specifically indicated on the preliminary site plans for the Lake project and the Country Club project on an approximately 1,000 acre site located in the southwestern portion of the City of Brentwood. (DEIR, Volume 3, page II.20.) The Project will accommodate the increased capacity needed as a result of these as well as other projects.

The Project is consistent with policy 5-32 of the Contra Costa County General Plan which requires appropriate buffers adjacent to noise sensitive land uses located along major transportation facilities. The Project is explicitly compatible with the Contra Costa County General Plan as it is indicated on the Contra Costa County Roadwork Network Plan and Scenic Routes Plan. Finally, it is consistent with the Roadway and Transit Network Plans developed in the County General Plan since it was assumed in all three planning scenarios.

The Project comports with East County Area Policies which propose restrictions to access on State Route 4, encourage development of a bypass to State Route 4, and propose coordination with Caltrans and the Cities of Brentwood and Antioch in developing State Route 4. The Project is consistent with transportation and circulation policies and overall implementation measures that establish a framework for implementation of a regional roadway network. (Contra Costa County General Plan, Policies 5-40, 5-42, 5-B, 5-F, 5-G, 5-I, 5-1, 5-S, 5-AD, 5-AL.)

The enhancement of transportation facilities as furthered by the Project is consistent with the Antioch General Plan Circulation Policies 1, 3, and 4. The Project is compatible with the Antioch General Plan in that a transportation corridor has been approved on the General Plan's Land Use Map and identified as a proposed freeway or expressway.

The Project recognizes a growing number of truck and other traffic generated by the existing State Route 4, and is of great concern to the City of Brentwood. The Project mitigates this concern by proposing a circulation system to accommodate traffic generated by development within the region. (Brentwood General Plan, Goals 1, 2, 3, 4, and 5.)

The Authority has carefully considered the evidence received in the lengthy planning process in arriving at its decision to adopt the proposed Project. The Authority has concluded that such a decision renews, revitalizes, and takes affirmative steps to implement efforts to control and plan for urban development and the resulting increases in traffic. Furthermore, the Authority has concluded that adoption of the Project is the most logical and most feasible method of assuring that adequate transportation facilities in the region will be provided.

The Authority believes that existing natural resources and community attributes can only be protected and enhanced by recognizing the inadequacy of the existing State Route 4 in handling existing and projected transportation. Approval of the Project avoids a piece-meal approach to transportation planning for the region. The adoption and implementation of the Project with mitigation will result in implementation of the goals and policies for the development of facilities within the region. The result will be an identification of the transportation facilities and the means to finance such improvements in a timely fashion to meet the demand for such facilities.

The most significant "unavoidable" and "irreversible" environmental impacts identified in the FEIR relate to traffic/circulation, open space, air quality, biological resources, and visual impacts. The Authority has considered these environmental impacts identified in the FEIR as unavoidable and irreversible as well as those impacts that may only be lessened or substantially lessened. It has concluded that with all environmental trade-offs of the Project taken into account, the net positive fiscal impacts, and achievement of balanced orderly growth and transportation network which will result from implementation of the Project, outweigh the irreversible impacts resulting from the implementation of the Project.

The Authority believes that the above-described social benefits which will be derived from implementation of the Project with mitigation, when weighed against the inherent uncertainties affecting the future growth without the Project, override the significant, unavoidable and irreversible environmental impacts of the proposed Project as identified above.

The Authority has balanced these social considerations against the unavoidable environmental risk identified in the Project, particularly those relating to open space, visual quality, air quality and biological impacts and the Authority has concluded that the social benefits which will be derived from the implementation of the proposed Project outweigh those unavoidable environmental risks.

SECTION D. CONCLUSION

In conclusion, the Authority has determined that any remaining effects on the environment attributable to the proposed Project which are found to be unavoidable in the preceding Findings of Fact are acceptable due to the overriding concerns set forth in Section B of this Statement of Overriding Considerations. The Authority has concluded that with all environmental trade-offs the proposed Project with mitigation should be adopted.

ADDENDUM TO THE ENVIRONMENTAL IMPACT REPORT FOR THE STATE ROUTE 4 BYPASS PROJECT

ADDENDUM #11: SPECIFIC TO SEGMENTS 2/3 – BALFOUR ROAD INTERCHANGE, PHASE 1

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October 2014

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Table of Contents

1 Introduction	1
2 Project Description	2
2.1 <i>Purpose and Need</i>	2
2.2 <i>Previous Environmental Analysis Process</i>	2
2.3 <i>Project Description Modifications</i>	3
3 Impact Analysis.....	6
3.1 <i>Summary of Project Impacts Addressed in the FEIR</i>	6
3.2 <i>Air Quality</i>	6
3.3 <i>Biological Resources</i>	14
3.4 <i>Cultural Resouces</i>	22
3.5 <i>Hazardous Materials</i>	23
3.6 <i>Noise</i>	25
3.7 <i>Traffic</i>	28
3.8 <i>Visual Resources</i>	31
4 Conclusion	32

Figures

Figure 1: Project Site and Vicinity

Figure 2: Proposed Project Improvements

Figure 3: PG&E Relocations

Figure 4: Deer Creek Daylighting Improvements

Figure 5: Off-site Improvements at Sellers Avenue

Figure 6: California Greenhouse Gas Forecast

Appendices

Appendix A: Mitigation Monitoring and Reporting Program

Appendix B: Air Quality Report

Appendix C: Biological Reports

Appendix D: Archaeological Survey and Cultural Resources Assessment

Appendix E: Preliminary Site Investigation Report

Appendix F: Noise Assessment

Appendix G: Traffic Operations Report

1 Introduction

1.1 REASONS FOR THIS ADDENDUM

This document is an Addendum to the Final Environmental Impact Report (FEIR) certified in December 1994 for the State Route 4 (SR-4) Bypass Project located in the cities of Antioch and Brentwood and unincorporated areas of eastern Contra Costa County. The SR-4 Bypass Project is a 3-segment, 12.4 mile combination freeway/expressway/conventional highway which is being constructed in phases.

The SR-4 Bypass FEIR (1994) included the acquisition of sufficient right-of-way at the Balfour Road intersection to accommodate an interchange in the future, however the traffic analysis prepared at that time did not show the need for an interchange at this location until after the horizon year (2010). Current traffic forecasts now demonstrate a need for an interchange at this location.

In 2011, the Bypass Authority prepared Addendum #10 to the FEIR, which evaluated the detailed design elements of an interchange at the Balfour Road location. **Figure 1** shows the general location of the SR-4/Balfour Road Interchange Improvements Project (Project). Addendum #10 provided the analysis necessary under the California Environmental Quality Act (CEQA) to determine if the proposed design of the Balfour Road interchange would result in any potential impacts that were not analyzed in the original 1994 FEIR. The analysis included two phases of construction, Phase 1 and Phase 2. The Phase 2 improvements will not be needed until 4-lanes are constructed between Balfour Road and Marsh Creek Road, which is anticipated to occur beyond the 20-year design period of Phase 1.

Since 2011 and the approval of Addendum #10, several changes to design of the Phase 1 interchange improvements at Balfour Road have occurred. These changes include revised ramp alignments, revised alignment of the existing SR-4 travel lanes approaching the Balfour Road interchange, two clear-spanning bridge structures to avoid work within Deer Creek, two additional retaining walls to avoid right-of-way acquisition from the adjacent properties in the vicinity of the Project area, and off-site improvements necessary to remove an oil pipeline pump station from within the interchange area. **Figure 2** illustrates the SR-4/Balfour Road interchange configuration evaluated in this Addendum #11. The analysis completed in Addendum #10 for the Phase 2 improvements of the SR-4/Balfour Road interchange has not been modified, and is not discussed further in this report.

1.2 CEQA BASIC FOR THIS ADDENDUM

This Addendum was prepared in conformance with CEQA and CEQA Guidelines §15164. State CEQA Guidelines §15164(a) requires that the lead agency or responsible agency prepare an Addendum to a previously certified EIR “if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred”. An Addendum need not be circulated for public review per CEQA Guidelines §15164(c) but can be included or attached to the FEIR or adopted negative declaration.

As analyzed in Section 3 of this document, the Phase 1 improvements for the Balfour Road interchange would not result in any new significant environmental effects or substantial increases in the severity of previously identified significant impacts. Consequently, major revisions to the

previous FEIR are not required, and none of the conditions listed in §15162(a) have occurred. Therefore, the appropriate level of analysis for the proposed Project revision is an Addendum to the FEIR. This conclusion is based on the analysis provided in this document and information in the FEIR.

1.3 INTENDED USES OF THIS ADDENDUM

An Addendum to an FEIR is an informational document used in the planning and decision-making process. The intent of this Addendum to the FEIR is to provide the Bypass Authority with additional information regarding the Project's potential environmental impacts that was not available at the time of the certification of the FEIR.

2 Project Description

This section provides a description of the Project evaluated in the FEIR and the modifications proposed by the SR-4 Bypass Authority.

2.1 PURPOSE AND NEED

The primary purpose of the SR-4 Bypass Project, as described in the FEIR, is to "improve regional circulation through eastern Contra Costa County and provide a more balanced distribution of current and future traffic over the local road network in this area".

2.2 PREVIOUS ENVIRONMENTAL ANALYSIS PROCESS

The SR-4 Bypass Authority (Bypass Authority) has served as the CEQA lead agency for the SR-4 Bypass Project. In October 1993, the Bypass Authority released for public review the SR-4 Bypass Project draft EIR. A 60-day public review period began on November 2, 1993, and closed on January 3, 1994. A Final EIR was prepared in November 1994 and included responses to comments received on the draft EIR. On November 21 and December 8, 1994, the Bypass Authority held public hearings on the Bypass Project and supporting environmental documents. The Bypass Authority approved the Bypass Project and certified the FEIR on December 13, 1994. Since that time ten Addenda and one supplemental EIR have been prepared and adopted by the Bypass Authority, as discussed below.

- December 13, 1994 - An Addendum was prepared to address a proposed modification to the connection from Marsh Creek Road to existing SR-4.
- November, 1997 - A second Addendum was prepared to consider the effects of a variety of long-range area planning projects on the preferred alternative alignment for Segment 3. This Addendum was certified by the Authority in November 1997.
- December, 1998 - A third Addendum was prepared to address the modified construction phasing plan which involved construction of Segment 2 as a first phase.
- January, 2003 - A fourth Addendum was prepared to address modifications to the Lone Tree Way Interchange.
- November, 2003 - A fifth Addendum was prepared to address modifications to Segment 1 of the Bypass.

- October 2004 - A Supplemental EIR was prepared to evaluate proposed refinements to the alignment of Segment 3.
- May 2006 - A sixth Addendum was prepared to evaluate proposed relocations of an existing Chevron pipeline.
- November 2007 - A seventh Addendum was prepared to evaluate the Sand Creek Road Interchange.
- April 2009 – An eighth Addendum was prepared to evaluate the Mokelumne Trail Bicycle/Pedestrian Overcrossing.
- June 2011 – A ninth Addendum was prepared to evaluate the SR-4/SR-160 Freeway Connector
- August 2011 – A tenth Addendum was prepared to evaluate construction of an interchange at Balfour Road consisting of two phases (Phase 1 and Phase 2).¹

The four-volume 1993 draft EIR for the SR-4 Bypass Project, together with the 1994 FEIR volume, the ten Addenda, and the Supplemental EIR now comprise the approved EIR and environmental record for the SR-4 Bypass Project. Once completed, this Addendum will be added to the environmental record.

2.3 PROJECT DESCRIPTION MODIFICATIONS

The Bypass Authority, the California Department of Transportation (Caltrans), and the Contra Costa Transportation Authority (CCTA) jointly propose to widen SR-4 from San Jose Avenue (PM 34.9) to approximately 3,400 feet south of Balfour Road (PM 36.6), and to construct an interchange at Balfour Road in the City of Brentwood in Contra Costa County.

The first phase (Phase 1) of the Project would include the construction of the following:

- Divided four-lane Freeway from San Jose Avenue Undercrossing to 2,000 feet north of Balfour Road. The freeway then transitions to a two-lane expressway south of Balfour Road Interchange.
- Four-lane wide undercrossing bridge structure over Balfour Road to serve bidirectional two-lane freeway traffic and two entrance loop ramps. This structure would serve only eastbound (EB) traffic in future phases.
- Four-lane wide bridge structure over Deer Creek for SR-4 freeway lanes. It would serve bidirectional traffic in Phase 1
- Two-lane bridge structure over Deer Creek for EB loop on-ramp
- EB SR-4 Diagonal off-ramp
- EB SR-4 Loop on-ramp

¹ This report updates the assessment of the Phase 1 interchange improvements at Balfour Road and supersedes the Phase 1 analysis included in Addendum #10. The Phase 2 interchange improvements at Balfour Road are not considered in this updated assessment of the design changes.

- Westbound (WB) SR-4 diagonal on-ramp that will be in an interim location and moved further to the east with Phase 2
- WB SR-4 diagonal off-ramp
- WB SR-4 loop on-ramp
- Widening of Balfour Road to up to six lanes within the interchange area

Other improvements would include two new traffic signals for the ramp intersections, ramp metering, lighting, drainage improvements, and utility relocations.

Relocation of PG&E Towers

A Pacific Gas & Electric (PG&E) overhead transmission line runs along the eastern side of the Bypass. Construction of the interchange will require relocation of two towers from their current locations adjacent to Balfour Road to new locations approximately 250 feet and 120 feet to the north respectively, as shown in **Figure 3**. The 1994 FEIR contemplated the potential relocation of utilities as part of construction of the Bypass and required coordination with public utilities and/or private operators during construction to allow for relocation as needed without disruption to existing service. Impacts associated with the utility relocation were addressed in the 1994 FEIR and are addressed in this Addendum pursuant to California Public Utilities Commission General Order 131-D filing requirements.

Deer Creek Daylighting

Deer Creek is an intermittent stream in its upper reaches but becomes perennial where it is detained in the Contra Costa County Flood Control Basin, approximately $\frac{3}{4}$ -mile west of the SR-4/Balfour Road intersection. From this point Deer Creek flows through an 84-inch concrete pipe toward the SR-4/Balfour Road intersection. A small portion (approximately 306 feet long) north of Balfour Road and west of State Route 4 flows through an open ditch before re-entering an 84-inch non-reinforced concrete pipe and headwall to pass under SR-4. East of SR-4 Deer Creek flows mainly through an open ditch eventually draining to Marsh Creek and on to the San Joaquin River.

Addendum #10 had evaluated extension of the existing 84-inch pipe culverts along Deer Creek with removal of the open ditch portion in the northwest quadrant of the interchange. The revised Phase 1 interchange improvements now include construction of an eastbound SR-4 clear span bridge over Deer Creek and an eastbound SR-4 loop on-ramp bridge in the north/west quadrant of the SR-4/Balfour Road intersection. This loop on-ramp would cross over on a clear span structure over the portion of Deer Creek that flows in an open ditch. The existing daylighted portion of Deer Creek is 306 feet long. In this same area, the portion of Deer Creek that flows in a pipe and through the existing headwall would be removed and replaced with an open ditch configuration, daylighting the creek. Two new headwalls made of rip rap are proposed; one immediately adjacent to the existing headwall, and the other further south where the new daylighted portion of the creek would re-enter an 84-inch reinforced concrete pipe. The total length of the daylighted creek after Project construction would be 511 feet and would be vegetated to maintain consistency with the surrounding natural environment. Some rock slope protection will be needed to prevent channel erosion near the pipe culvert exits into the channel. The remaining portion of the pipe within the interchange limits to the south would be replaced with reinforced concrete pipe and connected to the existing pipeline that flows under Balfour Road (see **Figure 4**).

OFF-SITE IMPROVEMENTS

Removal of the Kinder Morgan Brentwood Pump Station

As part of Phase 1 of the SR-4/Balfour Road interchange, a new eastbound SR-4 off-ramp and on-ramp would be constructed in the northwest quadrant of the SR-4/Balfour Road intersection. Construction of these ramps makes it necessary for Kinder Morgan Energy Partners (Kinder Morgan) to remove an existing oil pipeline pump station (the Brentwood Booster Station) at this location. The 1994 FEIR contemplated the potential relocation of utilities as part of construction of the SR-4 Bypass Project and required coordination with public utilities and/or private operators during construction to allow for relocation, as needed, without disruption to existing service. Addendum #10 evaluated the relocation of the Brentwood Booster Station approximately 400 feet to the west to accommodate the proposed on- and off-ramps associated with the interchange.

Since Addendum #10 was completed, additional evaluation and coordination with Kinder Morgan has occurred, which determined that relocating the Brentwood Booster Station is no longer necessary. Rather, the Phase 1 improvements now include removal of the pump station. To maintain oil pipeline pumping capacity two off-site Kinder Morgan system upgrades are necessary. The first system upgrade would occur at an existing Concord Pump Station, located at Arnold Industrial Way and Solano Way in Concord, California (approximately 20 miles northwest from the Project area). Terminal and substation transformers at the Concord Pump Station would be replaced to allow for increased pumping capacity. No physical expansion of the Concord Pump Station would be needed.

The second off-site Kinder Morgan system upgrade would include the modification of an existing oil pipeline access point between Brentwood Boulevard and Sellers Avenue (approximately 2.8 miles southeast from the Project area) and associated truck access along an East Contra Costa Irrigation District (ECCID) canal (see **Figure 5**). A Drag Reducing Additive (DRA) would be injected approximately once per week into the oil pipeline access point known as the Brentwood Boulevard Junction replacing similar DRA injections at the current Brentwood Booster Station. This would require a truck to either enter the area from Brentwood Boulevard, or to enter from Sellers Avenue, and traverse across the maintenance roadway along the ECCID canal. An asphalt concrete roadway would be constructed replacing the existing unpaved maintenance roadway to support the weekly truck trip delivering the DRA. This would require up to one foot of excavation throughout the maintenance road, including at conforms to paved roadways at each end. Additionally, up to one foot of trenching would occur across the maintenance road to maintain an existing water hook-up for irrigation activities associated with the adjacent farmlands. All work would occur within previously disturbed artificial fill associated with elevated maintenance access and paved roadways. No physical expansion of the valve lot for the Brentwood Boulevard Junction would occur.

3 Impact Analysis

3.1 SUMMARY OF PROJECT IMPACTS ADDRESSED IN THE FEIR

The environmental impacts of building the SR-4/Balfour Road interchange are comparable, if not the same, as the impacts of the SR-4 Bypass Project evaluated in the 1994 FEIR. The level of significance of impacts resulting from this modification would not result in any new impacts that were not previously disclosed, nor has the environmental baseline in the Project area changed since the 1994 FEIR, such that new impacts would be created.

The following environmental categories were specifically examined in the context of the modifications to the design discussed above:

- Air Quality and Climate Change
- Biological Resources
- Cultural Resources
- Hazardous Materials
- Noise
- Traffic
- Visual Resources

For these categories, additional analysis has been conducted and the results are discussed below. All other environmental categories examined in the FEIR have been assessed and found not to have any material change from what has already been presented in the draft and final EIR. All mitigation measures adopted in the 1994 FEIR continue to remain in effect and are incorporated by reference in this Addendum. Modifications to the previously adopted mitigation are required for some environmental resource topics, such as noise and air quality. Refinements pursuant to the adopted East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Planning (HCP/NCCP), which lists specific actions that the U.S. Fish and Wildlife Service (USFWS) and the member cities and county have adopted for all development affecting covered species. A refined Mitigation Monitoring and Reporting Program (MMRP) is included as **Appendix A** of this Addendum.

The off-site improvements at the Concord Pump Station are minor equipment alterations at an existing facility, and do not constitute a change that would affect any of the environmental topics considered under CEQA. As such, the Concord Pump Station improvements are not discussed further in this Addendum.

3.2 AIR QUALITY

3.2.1 PRIOR FEIR ANALYSIS

As discussed in Section G of the 1994 FEIR, federal air quality regulations classified the Bay Area as a non-attainment zone for ozone and carbon monoxide, while state regulations classified the Bay Area as non-attainment for ozone, carbon monoxide, and particulate matter (PM) smaller than 10 microns in size.

The FEIR identified significant unavoidable adverse effects resulting from the SR-4 Bypass Project (which includes this Project). Construction of the SR-4 Bypass Project would result in increased emissions that would exceed Bay Area Air Quality Management District (BAAQMD) criteria. Construction activities would temporarily generate substantial amounts of criteria air pollutants including nitrous oxide and PM smaller than 10 microns in size. Over the long term, the SR-4 Bypass Project would hinder regional efforts to attain transportation performance standards set forth in the California Clean Air Act (CCCA), such as decreasing vehicles miles traveled, increasing ridership per vehicle, and achieving no net increase in vehicle emissions.

Mitigation measures to reduce construction period and long term effects of the SR-4 Bypass Project are discussed in the FEIR. Such measures include dust abatement programs during the construction phase, developing high occupancy vehicle (HOV) lanes, and encouraging mixed-use development. However, the FEIR concluded that impacts related to the formation of ozone in the wider region, and attaining the transportation standards described above would remain significant.

3.2.2 UPDATED ANALYSIS

As part of the efforts to prepare Addendum #10 in 2011, the Bypass Authority conducted an Air Quality analysis to evaluate existing and future emissions associated with the preliminary design elements of the Balfour Road interchange. The air quality analysis concluded that the Project would not result in substantially more severe impacts than those described in the 1994 FEIR (refer to **Appendix B**). The discussion below summarizes the air quality impacts for the updated Project compared to those identified in the FEIR. For the purposes of this current Addendum, the results of the 2011 analysis were evaluated to ensure applicability to today's current conditions and future forecasts.

Increase in Emissions

Impact II.G.2 in the FEIR states "Development of the [SR-4 Bypass] Project would result in an increase in emissions over those expected under the no-project scenario. This increase would exceed BAAQMD significance criteria and would be a significant impact." This impact was based on projections of future motor vehicle traffic in the East County area and resulting emissions in forecast years of 2000 and 2010. It was found that the SR-4 Bypass Project, by diverting some person-trips from transit mode to auto mode and by increasing the lengths of other trips (relative to the no-project case), would result in an increase in vehicle miles traveled.

The described Impact II.G.2 was due to the creation of a new transportation corridor and not dependent on the presence or design of a single interchange within that corridor. The Project would not be anticipated to divert trips nor increase regional trip lengths. The revised Traffic Operations Report (TOR) prepared for the Project by *Fehr & Peers* (August, 2013) found that the Project would have beneficial impacts to traffic levels of service on roadways in the Project area. The 2013 TOR also concluded that traffic congestion without the proposed SR-4/Balfour Road interchange improvements would result in unacceptable levels of service on roadways in the Project area. Based on the projected traffic conditions, the Project would be expected to result in reduced air pollutant emissions through reduced congestion when compared to the no-project condition. The proposed Balfour Road interchange would not result in a substantially more severe impact than that described in the 1994 FEIR.

California Clean Air Act

Impact III.G.5 in the FEIR states “Development of the [SR-4 Bypass] Project would hinder regional efforts to attain the transportation performance standards set forth in the CCCA. This would be a significant impact.” This impact was based on CCCA transportation performance standards. For state ozone non-attainment areas the transportation performance standards were:

- Substantially reduce the rate of increase in passenger vehicle trips and miles traveled;
- Achieve 1.5 average vehicle ridership during the commute period by 1999; and
- Achieve no net increase in vehicle emissions after 1997.

The SR-4 Bypass Project was found to hinder efforts to meet the first two of these performance standards by increasing the number of vehicle trips and vehicle miles traveled over the no-project case and by diverting person trips off transit and onto the road network. It should be noted that the effective dates of the performance standards in question have already passed.

At this time, the Project is included in the Regional Transportation Plan (RTP) for the Bay Area and the 2013 Transportation Improvement Plan (TIP). The current RTP for the Bay Area, known as Plan Bay Area, was adopted by the Metropolitan Transportation Commission (MTC) on July 18, 2013 and was approved by U.S. Department of Transportation (DOT) on August 12, 2013. The 2013 TIP is the most current conforming TIP, which was adopted by MTC on July 18, 2013 and approved by the Federal Transit Administration (FTA), and the Federal Highway Administration (FHWA) on August 12, 2013.

The Project (Project Reference No. 230206) and TIP ID CC-070053 is included in the regional emissions analysis conducted by MTC for Plan Bay Area and the 2013 TIP. This conformity analysis addresses the national 8-hour ozone standard, national carbon monoxide (CO) standard, and the national 24-hour fine PM (PM_{2.5}) standard. This analysis found that the plan and, therefore, the individual projects contained in the plan, are conforming projects, and will have air quality impacts consistent with those identified in the Bay Area State Implementation Plan (SIP) for achieving the National Ambient Air Quality Standards (NAAQS). MTC has used the latest planning assumptions for the purpose of preparing this conformity analysis. Regional on-road motor vehicle emissions for future years are estimated using MTC’s travel demand forecast model (Travel Model One), which estimates vehicle activity in the Bay Area, in conjunction with the Air Resources Board’s (ARB) latest model for determining motor vehicle emissions (EMFAC2011).

The U.S. DOT issued its approval of the conformity determination for the Transportation 2040 Plan on August 12, 2013. The conformity finding means that the total motor vehicle emissions projected for the Plan Bay Area 2040 and 2013 TIP are within the emissions budgets established in the SIP, and that transportation control measures are implemented in a timely fashion. This conformity finding puts the nine-county region in conformity with SIP and all transportation-related federal air quality requirements.

Based on the inclusion of the Project in the RTP and TIP, emissions generated from the operation of the Project would be considered less than significant.

Construction Emissions

Impact III.G.1 in the FEIR states “Construction activities would temporarily generate substantial amounts of criteria pollutants, particularly NO_x and PM₁₀. This would be a significant impact.” Construction emissions of NO_x from the SR-4 Bypass Project were considered likely to be substantial, due to its scale (nine miles of new roadway and over four miles of improved roadway), extensive amounts of equipment and material, and a considerable number of construction workers needed. Similarly, substantial emission of PM₁₀ were considered likely due to the scale of the SR-4 Bypass Project, the extent of earth movement, and the extent of truck traffic over unpaved surfaces.

The nature of construction of the Phase 1 Balfour Road interchange improvements would not result in construction-period emissions being more intense or in closer proximity to receptors than that described in the 1994 FEIR. Since 1994, emission standards for on-road vehicles and off-road construction equipment have become more stringent through state and federal regulation. Current emission rates for vehicles and equipment are substantially below those in 1994. Standard construction practices for dust control that have been established by the regional air district have at the same time become more restrictive. Therefore, the Project would not result in a substantially more severe construction-period impact than that described in the 1994 FEIR.

The 1994 FEIR proposed standard mitigation measures designed to reduce construction-period impacts to a level that is less than significant. Current standard mitigation measures for construction include additional measures not included in the 1994 FEIR.

The BAAQMD CEQA Guidelines provide feasible control measures for construction emissions. Measures to reduce PM₁₀, PM_{2.5}, and diesel PM from construction are recommended to ensure that short-term health impacts to nearby sensitive receptors are avoided. Current standards and practices include the following additional measures, which the Caltrans currently adds to all construction contracts. Although Caltrans is not awarding the construction contract for the SR-4/Balfour Road interchange improvements, CCTA will ensure that the Caltrans standards and practices are included, given that the improvements are on a state highway.

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day;
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered;
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited;
- All vehicle speeds on unpaved roads shall be limited to 15 mph;
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used;
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points;

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator; and
- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours.

Caltrans special provisions and standard specifications will include the requirement to minimize or eliminate dust through application of water or dust palliatives. The following construction dust and equipment exhaust emissions measures are consistent with the BAAQMD CEQA Guidelines for basic and enhanced control measures and shall be implemented when practical, during all phases of construction work:

- AQ-1: The Project will follow Caltrans Standard Specification Sections 14-9.01 and 14-9.02, which address the requirements of the local air pollution control district (BAAQMD) and dust control and dust palliative application, respectively.
- AQ-2: The Project will implement all feasible respirable PM (PM_{10}) control measures required by BAAQMD.

Newer or modified construction emission control measures would be included with the Project to be consistent with current practices. The Project changes would not affect the determinations made in the FEIR, and the impacts would not be more severe than those described in the 1994 FEIR.

Off-site Improvements

The off-site improvements at the Kinder Morgan Brentwood Boulevard Junction would require minor excavation (up to one foot) along the length of the ECCID maintenance road in order to construct an asphalt concrete access road. Approximately once per week, a truck would enter the junction valve lot from Brentwood Boulevard or Seller Avenue, and traverse across the maintenance roadway to inject the DRA into the pipeline. Neither of these activities would result in significant contributions to construction or operational emissions associated with the Project. As such, these minor Project changes would not create any impacts more severe than those described in the 1994 FEIR, and no additional mitigation measures would be required.

3.2.3 POTENTIAL IMPACTS NOT PREVIOUSLY ADDRESSED

The effects of the SR-4 Bypass Project on greenhouse gases (GHG) emissions and climate change were not discussed in the 1994 FEIR. Since that time GHG emissions and climate change have been added as a CEQA topic that needs to be analyzed as part of the Project's environmental clearance.

A project's potential to result in significant impacts is based on standards of significance derived from the CEQA Guidelines Appendix G. As such, a project's global climate change impact is considered significant if it meets the following criteria:

- Generates GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflicts with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operation of the new improvements. Construction GHG emissions include indirect emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement life, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be reduced to some degree by longer intervals between maintenance and rehabilitation events.

With respect to construction-related GHG impacts, BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, as recommended in BAAQMD's CEQA Air Quality Guidelines, GHG emissions that would occur during construction have been quantified (see **Table 1**), and a determination has been made as to the significance of these construction-generated GHG emissions in relation to meeting Assembly Bill 32 (AB 32) GHG reduction goals, as required by the Public Resources Code, Section 21082.2. The Phase 1 interchange improvements once completed would reduce delay and improve traffic flow through the SR-4/Balfour Road intersection, possibly reducing carbon dioxide (CO₂) emissions.

Table 1 Carbon Dioxide (CO₂) Construction Emissions (Metric Tons per Day)

Project Phases	CO ₂ (lbs/day)
Grubbing/Land Clearing	3,980.3
Grading/Excavation	6,171.2
Drainage/Utilities/Sub-Grade	5,747.0
Paving	3,968.2
Maximum (pounds/day)	6,171.2
Total (metric tons/construction project)	625.8

Illingworth & Rodkin, 2014

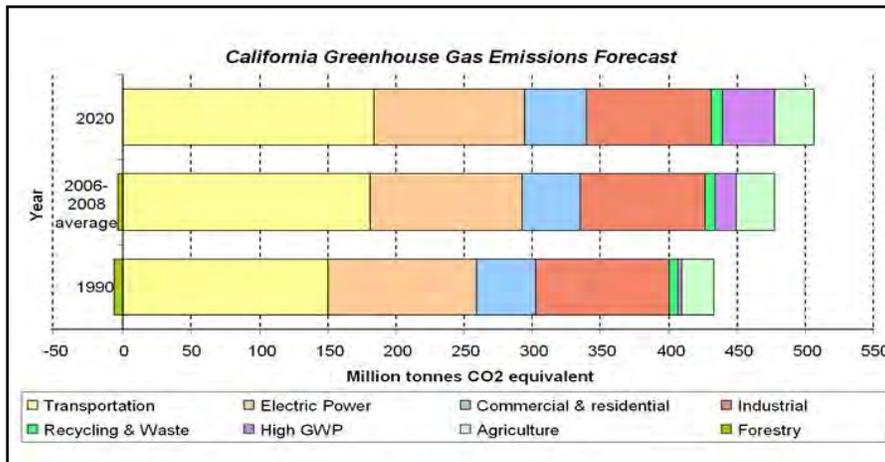
Adverse Contribution to Climate Change

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined

with the contributions of all other sources of GHG.² In assessing cumulative impacts, it must be determined if a project’s incremental effect is “cumulatively considerable” (CEQA Guidelines sections 15064(h)(1) and 15130). To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult, if not impossible, task.

The AB 32 Scoping Plan mandated by AB 32 contains the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, ARB released the GHG inventory for California (see **Figure 6**, forecast last updated: October 28, 2010). The forecast is an estimate of the emissions expected to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

Figure 6. California Greenhouse Gas Forecast



Source: <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>

The Project is included in the 2013 RTP and 2013 TIP, which contain adopted strategies for GHG emissions from transportation sources. Specifically, RTP reference number 230550, “Climate Initiatives Program,” is an adopted 5-year program for the Bay Area region involving outreach and education, promotion of safe routes to school, bike-sharing, and funding for electric vehicles. The adopted TIP also demonstrates that the region will remain below all approved “vehicle emission budgets” through the RTP study year.

Existing (2013), design year (2020), and horizon year (2040) CO₂ emissions were estimated under Project and no-project conditions using the latest CT-EMFAC version 5 model based on

² This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

EMFAC2011 for vehicles in Contra Costa County.³ Traffic volumes and peak commute period speeds were obtained from the 2013 Traffic Operations Report (TOR) prepared for the Project. The speeds and vehicle miles traveled (VMT) used in the emissions model are shown in **Table 2**.

Table 2 shows GHG emissions expressed in metric tons per day of CO₂. GHG emissions are presented with the Pavley and Low Carbon Fuel Standard (LCFS) requirements. With the implementation of the Phase 1 interchange improvements there will be a shift in the VMT from the off-peak period to the peak period and an increase in the average speeds during the peak period.

Table 2 Carbon Dioxide (CO₂) Emissions (Metric Tons per Day)

	Balfour Road		State Route 4		Total Metric Tons	Difference between Existing and Future	Difference between Project and No-Build
	VMT	Average Speed	VMT	Average Speed			
Existing	14,621	30	68,473	40	37.64	--	--
2020 No-Project	20,092	30	78,409	40	35.87	-1.77	--
2020 Project	20,645	45	106,168	65	44.28	6.64	8.41
2040 No-Project	23,104	30	103,820	40	44.68	7.04	--
2040 Project	24,606	45	151,428	65	56.38	18.74	11.70

Source: Illingworth & Rodkin, 2014

These computed CO₂ emissions are only useful for a comparison between alternatives. The numbers are not necessarily an accurate reflection of what the true CO₂ emissions will be because CO₂ emissions are dependent on other factors that are not part of the model, such as the fuel mix (EMFAC2011 model emission rates are only for direct engine-out CO₂ emissions, not full fuel cycle; fuel cycle emission rates can vary dramatically depending on the amount of additives like ethanol and the source of the fuel components), rate of acceleration, and the aerodynamics and efficiency of the vehicles. This analysis does not evaluate the changes in CO₂ emissions translated throughout the entire Bay Area transportation network. That type of analysis was conducted at the regional transportation plan level as previously discussed. The Project was included in the planned network that was evaluated in the regional transportation plan.

If VMT was analyzed over a broader geographic area, there would be very little difference between future conditions with or without the Project. Without the Project, there would be higher traffic volumes on other roads that run roughly parallel to SR-4. Under the Project condition, there are higher volumes on SR-4 itself and lower volumes on those parallel routes. But since the evaluation only looks at SR-4 in isolation, it doesn't see the broader effects of the Project on other routes. If these routes were taken into consideration, it is likely that, because there would be no increase in VMT, there would be lower GHG emissions. The 2013 TOR concludes that

³ The CT-EMFAC version 5 model only projects the emission rates up to the 2035 year. These 2035 emission rates were used to calculate the 2040 emissions.

the Project would have beneficial impacts to traffic levels of service on roadways in the Project area. The 2013 TOR also concludes that traffic congestion at the SR-4/Balfour Road intersection without the Project would operate at unacceptable levels. The Project would therefore be expected to result in reduced GHG emissions through reduced congestion.

With respect to construction-related GHG impacts, BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, as recommended in BAAQMD's CEQA Guidelines, GHG emissions that would occur during construction would be less-than significant when comparing these construction-generated GHG emission impacts in relation to meeting AB 32 GHG reduction goals, as required by the Public Resources Code, Section 21082.2. The Project impacts related to GHG emissions would be less than significant.

3.3 BIOLOGICAL RESOURCES

3.3.1 PRIOR FEIR ANALYSIS

The 1994 FEIR identified possible effects of the SR-4 Bypass Project on habitats, wetlands, and species of concern, and the potential for direct effects on these species relative to harm or harassment resulting from construction activities. The FEIR included 14 significant, unavoidable effects to biological resources that would potentially occur despite implementation of the proposed mitigation measures.

Construction of the SR-4 Bypass Project was found to adversely impact riparian corridors, such as Deer Creek, which runs through the SR-4/Balfour Road interchange area. The potential loss or degradation of the riparian habitats would be significant because of their local and regional scarcity, possible classification as Waters of the U.S., continuing depletion, and increased threats to dependent species of concern. Following the certification of the FEIR in 1994, a Biological Opinion (BO) was issued by the USFWS for construction of a 2-lane expressway through the Segment 2 limits.

A wetland delineation was prepared in 1998 for the entire SR-4 Bypass Project area, and was verified by the U.S. Army Corps of Engineers (USACE) in 1999. The wetland delineation verification was valid for a period of five years, and expired on April 27, 2004. Reverification of the wetland delineation is currently underway for the areas encompassing the SR-4/Balfour Road interchange.

No new plants or wildlife have been recorded in the Project area since the 1999 study. However, one species, the California tiger salamander, was upgraded to a federal listing of threatened in 2004.

The HCP/NCCP for East Contra Costa County was developed in consultation with the USFWS and adopted in July 2007. The HCP/NCCP establishes a coordinated process for permitting and mitigating the incidental take of endangered species identified in the plan. This process creates an alternative to the current project-by-project approach. Rather than individually surveying, negotiating, and securing mitigation and permit coverage, project proponents typically receive an endangered species permit by paying a fee/dedicating land and performing limited surveys and avoidance measures. A Supplemental EIR prepared in 2004 for Segment 3 of the SR-4 Bypass Project included revisions to the MMRP to reflect the HCP/NCCP's new mitigation language for biological resources. Further refinements to the MMRP were made as part of this addendum in order to accurately reflect the HCP/NCCP process, which does not require individual consultation with federal agencies and the issuance of a BO. The refined MMRP is included as **Appendix A**.

3.3.2 UPDATED ANALYSIS

A biological assessment was conducted by RCL Ecology in 2011 as a part of the Addendum #10 efforts of the SR-4/Balfour Road Interchange Project. Since that time, additional botanical and general biological surveys were conducted in April and September 2013, and June 2014 to evaluate existing biological conditions in the interchange area. In June 2014, a biological survey was conducted of the area of the off-site Kinder Morgan improvements. The assessment conducted in 2011 for Addendum #10, in combination with the updated surveys in 2013 and 2014, are being used to support an application for participation in the HCP/NCCP in order to receive an "Incidental Take" permit for federal and State listed species. The assessment and surveys also address biological resources as required by the California Environmental Quality Act (CEQA), and assist in determining if the Project will require permits from other agencies such as the U.S. Army Corps of Engineers (USACE), California Department of Fish Game (CDFG) or the Regional Water Quality Control Board (RWQCB). The biological assessment and updated 2014 surveys are included as **Appendix C**.

The SR-4/Balfour Road interchange area lies in a nearly flat annual grassland surrounded by urban development. Much of the area within the freeway right-of-way has been previously disturbed during construction of the existing Balfour Road intersection, realignment of Concord Avenue, and construction of the Kinder Morgan facilities. The existing daylighted section of Deer Creek in the northwest quadrant of the SR-4/Balfour Road intersection is the only waterway within the Project area. Deer Creek is an intermittent stream originating in the hills west of the Project area. It is intermittent in its upper reaches but becomes perennial where it is detained in the Water Quality ponds approximately ¾-mile west of the Project area. From that point, Deer Creek primarily flows through underground pipe under Balfour Road and State Route 4. East of SR-4 Deer Creek flows to Marsh Creek which flows to the San Joaquin River. Drainage from the Project area flows into Deer Creek through drop structures within engineered bio swales along SR-4. Runoff from Project construction will utilize the existing drainage system, and drainage improvements would include drainage inlets, drainage pipes, bioswales, pipe underdrain, and rock slope protection.

Biological surveys confirmed that breeding habitat exists within the Project area for the western burrowing owl (*Athene cunicularia hypugaea*), San Joaquin kit fox (*Vulpes macrotis mutica*), California red-legged frog (*Rana Draytonii*), California tiger salamander (*Ambystoma californiense*), and the white-tailed kite (*Elanus leucurus*). Potential habitat also occurs for other protected species such as the pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blossevillii*) and state protected birds like the Swainson's hawk (*Buteo swainsoni*) and golden eagle (*Aquila chrysaetos*).

To address potential biological impacts related to the Balfour Road interchange improvements, standard conservation measures included in the HCP/NCCP and the 1994 FEIR will be required, as outlined below. The required mitigation for any incidental take of endangered species will be formalized in the HCP/NCCP permit application.

Wetlands and Water Features

The approximate 306 foot long daylighted section of Deer Creek within the northwestern quadrant of the Project area is a channelized waterway with shallow pools. This section of creek is approximately 55 feet wide at top of bank (TOB) and approximately 25 feet wide at ordinary high water (OHW). Trees consist of saplings and mature Fremont cottonwood (*Populus fremontii*) and red willow (*Salix laevigata*). Shrubs consist of California rose (*Rosa californica*) and blue

elderberry (*Sambucus mexicana*). Herbaceous and wetland species consist of broad-leaved pepperweed (*Lepidium latifolium*), narrow-leaved cattail (*Typha angustifolia*), red-tinge bulrush (*Scirpus macrocarpus*), and purple flat sedge (*Cyperus rotundus*).

Central Valley Fall Run Chinook Salmon (*Oncorhynchus tshawytschai*) are known to spawn in the Marsh Creek system. Salmon have been observed near the Balfour Road crossing of Marsh Creek, over a mile east of the Project area. Fish passage is blocked at the end of the low flow culvert, as well as through a grade control weir structure located approximately ¾ mile from the Project area. Thus, the Project is not expected to have any effect on Central Valley Fall Run Chinook Salmon, or any other special-status fish species.

The two clear span bridges proposed for the new SR-4 mainline and EB loop onramp would cross the daylighted portions of Deer Creek. While this design avoids any direct impacts to the waters, the bridges will require some tree removal and will shade approximately 0.38-acres of riparian cover under the new bridges. The Project would also increase the daylighted portion of Deer Creek from 306 feet to approximately 511 feet. This is anticipated to have a beneficial effect to the area, as the daylighting of the creek would create additional habitat when compared to existing conditions.

Construction of the SR-4/Balfour Road interchange would result in a net increase the amount of impervious paved surfaces in the immediate area. This additional impervious area could prevent runoff from naturally dispersing and infiltrating into the ground, resulting in increased concentrated flow. The additional flow has the potential to transport an increased amount of sediment and pollutants to waterways and water resources, adversely impacting the water quality of Deer Creek.

Construction would involve substantial grading and earth moving activities, stockpiling of soils, and the loading, unloading, and transport of excavated and fill material. Rainfall could carry loose soils into adjacent waterways, resulting in increased sedimentation and adverse effects to water quality. Concentrated flow due to grading in some areas will increase the potential for erosion and for sediment transport into the adjacent areas. Construction equipment debris and fuel could also further degrade the quality of storm water runoff if fueling activity and maintenance products are not handled properly. This contamination could impact nearby waterways, including Deer Creek.

As the Project will directly and indirectly impact portions of Deer Creek—a jurisdictional water feature—the following federal, State and regional permits will be required: Federal USACE 404- (Fill of waters and wetlands); State RWQCB 401 – (Water Quality Certification), State CDFG 1602-Streambed Alteration Agreement, Caltrans' National Pollutant Discharge Elimination System (NPDES) permit and Storm Water Management Plan (SWMP), and the East Contra County Habitat Conservancy (Incidental Take Permit). Conditions stipulated within each of the aforementioned permits would ensure that no adverse impacts to water quality would occur as a result of the Project.

San Joaquin Kit Fox

The San Joaquin kit fox is a federally endangered and state listed threatened species. The San Joaquin kit fox is endemic to California and has known range in Alameda and Contra Costa counties. It is extremely rare and sparsely distributed due to habitat loss and the constriction of

dispersal corridors. Dens are generally located in open areas with grass or grass and scattered brush. San Joaquin kit foxes maintain multiple dens and den use varies for breeding dispersal and temporary shelter.

Although ground squirrel burrows occur within the Project area for the Balfour Road interchange and off-site improvements, none appear to be of suitable size (e.g. 5-inches in diameter or greater) to serve as kit fox dens. However, to ensure that the Project will not affect the species, a kit fox preconstruction survey will be required prior to the start of work.

Preconstruction Surveys

Prior to any ground disturbance related to covered activities, a USFWS/CDFG-approved biologist will conduct a preconstruction survey of the Project area. The survey will establish the presence or absence of San Joaquin kit foxes and/or suitable dens and evaluate use by kit foxes in accordance with USFWS survey guidelines (USFWS, 1999). Preconstruction surveys will be conducted within 30 days of ground disturbance. The biologist will survey the proposed Project disturbance footprint plus a 250-radius from the perimeter of footprint to identify San Joaquin kit foxes and/or suitable dens. The status of all dens will be determined and mapped. Written results of preconstruction surveys will be submitted to USFWS within 5 working days after survey completion and before the start of ground disturbance. If San Joaquin kit foxes and/or suitable dens are identified in the survey area, the avoidance and minimization measures described below will be implemented.

Avoidance and Minimization Measures

If a San Joaquin kit fox is discovered in the proposed Project disturbance footprint, the den will be monitored for 3 days by a USFWS/CDFG-approved biologist using a tracking medium or an infrared beam camera to determine if the den is currently being used. Unoccupied dens will be destroyed immediately to prevent subsequent use.

If a natal den or pupping den is found, USFWS and CDFG will be notified immediately. The den will not be destroyed until the pups and adults have vacated and then only after further consultation with USFWS and CDFG.

If kit fox activity is observed at the den during the initial monitoring period, the den will be monitored for an additional 5 consecutive days from the time of the first observation to allow any resident animals to move to another den while den use is actively discouraged. For dens other than natal or pupping dens, use of the den can be discouraged by partially plugging the entrance with soil such that any resident animal can easily escape. Once the den is determined to be unoccupied, it may be excavated under the direction of the biologist. Alternately, if the animal is still present after 5 or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant (i.e. during the animals' normal foraging activities).

Construction Monitoring

If dens are identified in the survey area outside the proposed Project disturbance footprint, exclusion zones around each den entrance or cluster of entrances will demarcated. The configuration of exclusion zones should be circular, with a radius measured outward from the

den entrance(s). No covered activities will occur within the exclusion zones. Exclusion zone radii for known dens will be at least 100 feet and will be demarcated with staking and flagging that encircles each den or cluster of dens but does not prevent access to the den by kit fox.

California Red-legged Frog (CRLF) and California Tiger Salamander (CTS)

The California red-legged frog (CRLF) is a federally threatened species and a California species of special concern. The California tiger salamander (CTS) is a federally and State listed threatened species.

The existing daylighted section of Deer Creek within the interchange area may serve as a breeding site for both CRLF and CTS and adjacent areas are potential aestivation habitats. While visual surveys at the site were negative for CRLF larvae, adult CTS and larvae, and other amphibians, a large splash was heard at the pool in this section. The splash would indicate the presence of either bullfrog or CRLF. Therefore, the agencies will be notified in advance of construction for potential removal of CRLF per HCP/NCCP protocols.

As required by the HCP/NCCP, proper written notification will be provided to USFWS, CDFG, and the Implementing Entity at least 30 days prior to disturbance of potential habitat in order to provide an opportunity for these agencies to translocate any individuals of these species. The agencies in turn are required to notify the proponent within 14 days of their intent to translocate the species. The agencies will then be allowed 45 days to translocate individuals from the date the first written notification was submitted by the Project proponent (or a longer period agreed to by the Project proponent, USFWS, and CDFG).

Western Burrowing Owl

Western Burrowing owl is designated as California Species of Special Concern. The Western Burrowing owl prefers open, flat, or sloped grasslands and requires burrows for nesting and wintering habitat, but will also nest in artificial structures such as open pipes, concrete rubble piles, and small, dry culverts.

While only one burrowing owl was seen during the planning surveys, they have been routinely observed in the northwest quadrant of the Project area near the Kinder Morgan facility during previous studies of the area (RCL Ecology, 2011). Therefore, passive eviction techniques will be used to clear the area of owls before the start of the nesting season (February 1) so that the Project will have no effect on the western burrowing owl.

Preconstruction Surveys

Prior to any ground disturbance related to covered activities, a USFWS/CDFW-approved biologist will conduct a preconstruction survey in areas identified in the planning surveys as having potential burrowing owl habitat. The surveys will establish the presence or absence of western burrowing owl and /or habitat features and evaluate use by owls in accordance with CDFW survey guidelines (CDFW, 1993).

On the parcel where the activity is proposed, the biologist will survey the proposed disturbance footprint and a 500-foot radius from the perimeter of the proposed footprint to identify burrows and owls. Surveys would take place near sunrise or sunset in accordance with CDFW guidelines. All burrow or burrowing owls will be identified and mapped. Surveys will take place no more than 30 days prior to destruction. During the breeding season (February 1-August 31),

surveys will document whether burrowing owls are nesting in or directly adjacent to disturbance areas. During the nonbreeding season (September 1-January 31), surveys will document whether burrowing owls are using habitat in or directly adjacent to any disturbance area. Survey results will be valid only for the season (breeding or nonbreeding) during which the survey is conducted.

Avoidance and Minimization Measures

If burrowing owls are found during breeding season (February 1-August 31), the Project proponent would avoid all nest sites that could be disturbed by Project construction during the remainder of the breeding season or while the nest is occupied by adults or young. Avoidance would include establishment of a non-disturbance buffer zone (described below).

Construction may occur during the breeding season if a qualified biologist monitors the nest and determines that the birds have not begun egg-lying and incubation or that the juveniles from the occupied burrows have fledged. During the nonbreeding season (September 1-January 31), the Project proponent would avoid the owls and the burrows they are using if possible. Avoidance will include the establishment of a buffer zone.

If occupied burrows are not avoided, passive relocation would be implemented. Owls would be excluded from burrows within a 160-foot buffer zone by installing one-way doors in burrow entrances. These doors would be in place for 48 hours prior to installing one-way doors in burrow entrances and prior to excavation. The Project area will be monitored daily for one week to confirm that the owl(s) have abandoned the burrow. Whenever possible, burrows would be excavated using hand tools and refilled to prevent reoccupation (CDFW, 1995). Plastic tubing or similar structure would be inserted in the tunnels during excavation to maintain an escape route for any owls inside the burrow.

White-Tailed Kite

The white-tailed kite is classified as Fully Protected by the state. White-tailed kites breed in lowland grasslands, agriculture, wetlands, oak-woodland and savannah habitats, and riparian areas associated with open areas. Fremont cottonwoods within the daylighted portion of Deer Creek are large enough to furnish nesting habitat for the white-tailed kite. Therefore, preconstruction nest surveys will be conducted for the white-tailed kite if construction is planned to occur within the nesting season (February 1-August 31).

Preconstruction Surveys

If Project construction is scheduled to start during the breeding season (February 1- August 31), preconstruction surveys should be conducted within the Project area and a 300-foot buffer, by a qualified biologist no more than two weeks prior to equipment or material staging, or surface-disturbing activities. If no active nests are found within the survey area, no further mitigation is necessary.

Avoidance and Minimization Measures

If active nests (i.e. nests in the egg laying, incubating, nestling, or fledgling stages) are found within 300 feet of the Project area, non-disturbance buffers should be established at a distance sufficient to minimize disturbance based on the nest location, topography, cover, the nesting pair's tolerance to disturbance, and duration of potential disturbance. No work should occur

within the non-disturbance buffers until the young have fledged as determined by a qualified biologist, Buffer size should be determined in cooperation with the CDFG and the USFWS. If buffers are established and it is determined that Project activities are resulting in nest disturbance, work should cease immediately, and the CDFG and the USFWS should be contacted for further guidance.

Pallid and Western Red Bat

The pallid and western red bats are listed as CDFW Special Concern species. The pallid bat prefers to roost in buildings, caves and other structures not present in the Project area but may forage in the habitat adjacent to the SR-4/Balfour Road intersection. The red bat is a riparian obligate and may roost and forage along the daylighted section of Deer Creek.

Preconstruction Surveys

Preconstruction surveys of the trees within the riparian area will be conducted in advance of construction to detect bat roosting.

Avoidance and Minimization Measures

If roosting is found protective fencing will be erected to prevent disturbance to the roost site. The fence location will be monitored by the biological monitor to ensure it stays secure for the duration of Project work.

State Protected Birds

Several birds with potential to occur in the Project area are listed on the state watch list, or are of state special concern. These include birds of prey, the merlin, Cooper's hawk, Swainson's hawk, golden eagle, and loggerhead shrike; as well as a songbird – the California horned lark.

Preconstruction Surveys

If Project construction is scheduled to begin during the breeding season (February 1- August 31), preconstruction surveys for special-status bird species will be conducted within the Project area and a 300-foot buffer, by a qualified biologist no more than two weeks prior to equipment or material staging, or surface-disturbing activities. If no active nests are found within the survey area, no further mitigation is necessary.

Avoidance and Minimization Measures

If active nests (i.e. nests in the egg laying, incubating, nestling or fledgling stages) are found within 300 feet of the Project footprint, non-disturbance buffers should be established at a distance sufficient to minimize disturbance based on the nest location, topography, cover, the nesting pair's tolerance to disturbance and duration of potential disturbance. No work should occur within the non-disturbance buffers until the young have fledged as determined by a qualified biologist. Buffer size should be determined in cooperation with the CDFW and the USFWS. If buffers are established and it is determined that Project activities are resulting in nest disturbance, work should cease immediately and CDFW and USFWS should be contacted for further guidance.

General Avoidance and Minimization Measures

In addition to the standard HCP/NCCP conservation measures outlined above, the following general measures shall be followed during Project construction.

- Prior to the start of construction, ESA fence will be installed by the contractor as shown on the plans to protect portions of Deer Creek during construction activity. A biological monitor will inspect the fence to ensure correct depth and placement and monitor the fencing to ensure that it remains during construction activity.
- A biological monitor should be on site during all construction activity near the waters and riparian habitat to ensure implementation of, and compliance with all avoidance measures.
- The biological monitor will conduct Worker Environmental Awareness Training for all construction crews and contractors. The education training should be conducted prior to starting work on the Project and upon the arrival of any new workers. The training should include a review of sensitive areas and avoidance and minimization measures to be employed to protect the covered and no take species. A record of all personnel trained during the Project should be maintained for compliance verification.
- Staging areas and access routes through the Project will be reviewed by the biological monitor to ensure that they do not impact any sensitive areas.

Off-site Improvements

A biological study of the area encompassing the off-site improvements at the Kinder Morgan Brentwood Boulevard Junction was prepared by RCL Ecology in September, 2014. The study included a pedestrian survey of the area conducted on May 23, 2014. The survey consisted of walking the roadsides and adjacent areas out to a distance of approximately 500 feet where possible. The maintenance road lies between a farmed area of irrigated row crops and the ECCID canal. The maintenance road area is essentially composed of bare ground from irrigated row crops to the canal. A few California ground squirrel burrows occur along the concrete edge of the canal and a small area on the north side of the road at its intersection with Sellers Avenue. A small grove of mature eucalyptus trees occurs on the north side of the road near Brentwood Boulevard.

All burrows were closely examined for signs of use by burrowing owls as well as San Joaquin kit fox, and the canal was examined for use by California red-legged frog and California tiger salamander. All trees were surveyed with binoculars for use by tree-nesting birds with specific emphasis on use by protected raptors such as the Swainson's hawk and golden eagle.

No signs of burrowing owls (white-wash, regurgitated pellets, feathers or prey parts) were found. No use by San Joaquin kit fox (scat, tracks) was found, and all burrows were less than the minimum size of 5-inches in circumference in order to be habitat for the kit fox. No amphibians were found in the canal. No nests were found within the eucalyptus trees and no special-status plants occur on the area.

While not present currently, burrowing owls, kit fox and tree nesting birds could move onto the area at a later date. Therefore, preconstruction surveys will be required for these species per agency protocols, as previously described.

3.4 CULTURAL RESOURCES

3.4.1 PRIOR FEIR ANALYSIS

The 1994 FEIR analyzed the potential of the SR-4 Bypass Project to disrupt or adversely affect a prehistoric or historic archaeological site or property of historic or cultural significance. Cultural resources study for the SR-4 Bypass Project consisted of a detailed review of the previously completed archival literature review of the SR-4 Bypass Project right-of-way and an onsite surface archaeological reconnaissance. The supporting cultural reports for the 1994 FEIR did not identify cultural resources in the vicinity of the SR-4 Bypass Project area; however, only the 1992 SR-4 alignment north of Balfour Road was surveyed. South of Balfour Road, the proposed SR-4 alignment was inaccessible at the time of the survey. Because of differences between the 1992 SR-4 and the current SR-4 alignment, the majority of the SR-4 Bypass Project area was not surveyed in 1992 (see Figure 8 of the Archaeological Survey and Cultural Resources Assessment prepared for the Project, included as **Appendix D** of this addendum).

Although no archaeological or subsurface cultural resources of significance or potential significance were observed along the segments of the SR-4 Bypass Project accessible to field surveys conducted for the 1994 FEIR, the document determined that impacts to undiscovered prehistoric resources could occur through implementation of the SR-4 Bypass Project. Mitigation measures to reduce construction period and long term effects of the SR-4 Bypass Project are discussed in the FEIR. Such measures include archaeological monitoring, suspending work in the event archaeological resources are discovered, development of an excavation plan, and the preparation of an historic property and architectural survey reports should any of the adjacent structures qualify for protection under the National Register of Historic Places and be altered, relocated, or demolished by construction of the SR-4 Bypass Project. However, the FEIR concluded that any impacts related to potential historic resources adjacent to the SR-4 Bypass Project would remain significant.

3.4.2 UPDATED ANALYSIS

An Archaeological Survey and Cultural Resources Assessment were conducted for the SR4/Balfour Road interchange area by William Self Associates in 2014. A field survey of the area was conducted, which covered those areas not previously covered as a part of the 1994 FEIR. Pedestrian surveys of the area were conducted on September 4 and 5, 2014. During the course of the surveys, no cultural materials were observed. A search of the California Historic Resources Information System (CHRIS) records for the area was conducted, and indicates that no prehistoric cultural resources have been recorded within 1-mile of the SR-4/Balfour Road interchange area.⁴

One historic cultural resource is reported by the Northwest Information Center (NWIC) within the study area, a mine adit associated with the Brentwood Coal Company. However, detailed mapping of the location of this resource revealed that it is actually outside of the study area. No NRHP-listed or other local, state, or federally listed or recognized properties are known to exist in the study area. Coordination with the Native American Heritage Commission (NAHC) indicated that no Native American cultural resources are present in the PAL.

⁴ The records search covered a one-mile radius surrounding the Project area.

The likelihood of encountering potentially significant cultural resources within the area is low. However, should any previously undiscovered historic or prehistoric resources be found during construction, work would stop, in accordance with CEQA regulations, until such time that the resource can be evaluated by a qualified archaeologist and appropriate mitigative action take as determined necessary by the lead agency. In the event that Native American human remains or funerary objects are discovered, the provisions of California Health and Safety Code Section 7050.5(b) would be followed. Section 5097.98 and 5097.99 of the Public Resources Code also call for “protection to Native American human burials and skeletal remains from vandalism and inadvertent destruction.”

The Project changes would not affect the determinations made in the 1994 FEIR, and the impacts would not be more severe than those described in the 1994 FEIR. No further discussion or mitigation is required as part of this Addendum.

Off-site Improvements

A separate records search was conducted for the off-site improvements, and indicates that no prehistoric cultural resources have been recorded within the off-site Project area. Two historic cultural resources are within ¼ mile of the off-site Project area. Historic railroad tracks run parallel with Brentwood Boulevard west of the off-site Project area. The East Contra Costa Irrigation District Main Canal Complex is located 2.5 miles west of the Project area. This resource includes the main canal itself, a one-mile concrete ditch adjacent to the south side of the off-site Project area, and six pumping stations. The main canal is the only component of this resource in the immediate vicinity of the Project area.

Given that there no work is occurring to the railroad or in the canal, and no modifications to the canal or to associated buildings and utilities would occur, there would be no impact to any known historic resources. Furthermore, all excavation activities associated with the Kinder Morgan off-site improvements would be shallow and within previously disturbed soils, thus the likelihood of encountering unknown cultural resources during the construction is low. Adherence to California Health and Safety Code Section 7050.5(b) would be followed, as previously described. No further discussion or mitigation is required as part of this Addendum.

3.5 HAZARDOUS MATERIALS

3.5.1 PRIOR FEIR ANALYSIS

The 1994 FEIR identified potential locations in the SR-4 Bypass Project area that could contain hazardous wastes left by former property users. At the time, the zoning along the SR-4 Bypass Project right-of-way allowed agricultural uses and well-head activities associated with a small oil field in the Sand Creek Area. The FEIR concluded that there were six locations where hazardous wastes could be present. These included a shooting range, two debris yards, a series of oil wells, a crude oil storage facility, and an electrical transformer site. The FEIR included mitigation measures requiring a comprehensive investigation of soil quality at the sites to be conducted by the County Department of Public Works. The mitigation measures reduced the potential impacts to less-than-significant levels.

The 1994 FEIR also contemplated the potential relocation of utilities as part of construction of the Bypass and required coordination with public utilities and/or private operators during construction to allow for relocation as needed without disruption to existing service.

3.5.2 UPDATED ANALYSIS

None of the six sites listed in the 1994 FEIR are located within the SR-4/Balfour Road interchange area. A Preliminary Site Investigation (PSI) Report was prepared by Geocon, Inc. in June, 2014 (included as **Appendix E**). The PSI found that excavated soils would be classified as non-hazardous based on lead and chromium levels. Pesticides, arsenic, and petroleum hydrocarbons were found at concentrations less than the construction exposure Environmental Screening Levels (ESLs), but near or at residential and industrial/commercial ESLs.

The Kinder Morgan Brentwood Booster Station is located within the interchange area on the northwest corner of the SR-4/Balfour Road Bypass intersection. Kinder Morgan owns and operates a 10-inch-diameter petroleum pipeline and booster pump facility that transports refined petroleum products (i.e., gasoline, diesel, and jet fuels) from the Kinder Morgan Concord Station in Concord, California, to the Kinder Morgan Bradshaw Terminal in Stockton, California.

As previously discussed, the Phase 1 interchange improvements would remove the Brentwood Booster Station. Independent of the interchange improvements, Kinder Morgan is working with the Regional Water Quality Control Board (RWQCB) to address groundwater contamination at the Brentwood Booster Station. During 2010/2011, Kinder Morgan conducted sampling activities to characterize and address groundwater impacts. Kinder Morgan has accepted responsibility for the petroleum hydrocarbon impacts at this site and is working under RWQCB oversight to investigate, and remediate if necessary, impacts to the satisfaction of RWQCB. The sampling, characterization, and remediation activities, including the removal of contaminated soils from the site, are already occurring and will continue under the oversight of the RWQCB (the lead agency), independent of Project construction.

Following removal of the facility, the remediation work will continue until the contamination is addressed to the satisfaction of the RWQCB. The contamination therefore does not present a potential future hazard to the Bypass Authority or to Caltrans (the eventual owner of the interchange facility), as the RWQCB is already directing the remediation pursuant to state laws governing the characterization and remediation of contaminants.

No construction period impacts exist, since the depth to groundwater is beyond the limits of work for the Balfour Road interchange where any construction workers would be potentially affected. Furthermore, pollutant levels in the soils are below the construction exposure ESLs.

The Phase 1 interchange improvements would not affect the determinations made in the 1994 FEIR, and the impacts would not be more severe than those described in the 1994 FEIR. No further discussion or mitigation is required as part of this Addendum.

Off-site Improvements

The off-site improvements would require shallow excavation work (up to one foot) along an existing unpaved maintenance access roadway. There are two documented hazardous materials release sites located approximately one mile northwest of the off-site improvement Project area. Cleanup has been completed at both of these sites and both are considered closed. The nearest potential hazardous materials site is a historic pipeline owned by Chevron, located at the intersection of Oak Street and Walnut Boulevard in Brentwood; approximately 1.25 miles

northwest of the off-site improvement area. No remediation actions have occurred to date, the site is undergoing preliminary evaluation to determine if crude oil from the historic pipeline is present.⁵

Given that there are no documented release sites or contaminants in the off-site Project area, and that the work proposed is relatively small scale, the off-site improvements would have no impacts related to hazardous materials.

3.6 NOISE

3.6.1 PRIOR FEIR ANALYSIS

The 1994 FEIR concluded that development of the SR-4 Bypass Project would result in significant impacts related to noise. Specifically, the FEIR concluded that construction activities would temporarily increase ambient noise levels in the area, and that development of the SR-4 Bypass Project would create operational noise levels exceeding compatibility guidelines for residential uses. Following the certification of the FEIR, residential development projects were required to construct their own sound barriers sufficient to mitigate potential future noise impacts to a less-than-significant level. The cities of Antioch and Brentwood have diligently implemented this requirement for all of the residential subdivisions that have been built and are being proposed along the SR-4 right-of-way.

Mitigation measures outlined in the FEIR included open space buffers, sound barriers, and installation of noise insulation for existing residences. The FEIR did not provide any guidance as to the proposed location or height of the recommended noise barriers.

3.6.2 UPDATED ANALYSIS

In accordance with the FEIR mitigation measures, a noise analysis was conducted as part of Addendum #10 to determine existing and future noise levels associated with the operation of the existing Balfour intersection and the proposed interchange improvements (included as **Appendix F**). The analysis was conducted using the local City of Brentwood standard, based on the A-weighted scale (dBA), which reflects the normal hearing sensitivity range of the human ear, and also includes the day-night average sound pressure level (Ldn); the average noise level over a 24-hour period with an adjustment to reflect the greater sensitivity of most people to nighttime noise. The City of Brentwood standard is based on a 24-hour average that includes a penalty of 10 dBA added to nighttime noise (Ldn). The results of the 2011 noise modeling indicate that year 2020 traffic noise levels would not exceed the City of Brentwood's 60 dBA Ldn threshold at Summerset residences. No noise abatement mitigation is required for the Project.

Updated noise modeling was conducted by Illingworth and Rodkin in 2014. Traffic noise levels assuming Phase 1 conditions were modeled with Federal Highway Administration's Traffic Noise Model (TNM v. 2.5). The traffic noise model was calibrated to measured conditions documented during the noise monitoring survey made during the 2011 update, and then used to calculate 2020 traffic noise levels with and without the Phase 1 improvements. As indicated in **Table 3**, 2020

⁵ State Water Resources Control Board, 2014. Available: <http://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=balfour+road>. Accessed 9/30/2014.

traffic noise levels calculated assuming the construction of the Phase 1 Project improvements are predicted to range from 52 to 60 dBA L_{dn} at Summerset residences. The calculated noise levels assuming the Phase 1 improvements are 1 to 2 dBA less than the noise levels calculated as part of the 2011 Addendum. The reduction in noise levels at Summerset residences is due to a decrease in traffic volumes (2020 traffic conditions relative to 2015 traffic conditions) and the shift in the eastbound travel lanes further west and away from the Summerset residences. Year 2020 traffic noise levels would not exceed the City of Brentwood's 60 dBA L_{dn} threshold at Summerset residences, and no additional mitigation is required.

Table 3 Intersection LOS Summary for the No-Project Scenario

Receiver Location		Maintain Existing Geometry (No Project)			Phase 1 Improvements
		2010	2020	2040	2020
Summerset 1	ST1	56	60	61	58
	ST2	59	62	63	55
	ST3	57	59	60	60
	LT1	58	60	61	56
Summerset 2	ST4	50	53	54	52
	ST5	54	57	58	58
	ST6	54	58	59	58
	LT2	56	59	60	58
	ST7	50	53	54	53
	ST8	49	53	54	55
	LT3	52	56	57	56

Note: **Bold** font indicates sound levels greater than 60 dBA L_{dn}

Source: Fehr & Peers, 2013

Additionally, following the certification of the 1994 FEIR, residential development projects were required to construct their own sound barriers sufficient to mitigate potential future noise impacts to a less-than-significant level. The cities of Antioch and Brentwood have diligently implemented this requirement for all the residential subdivisions proposed along the SR-4 right-of-way, thus limiting the impacts of any potential increases in noise in the area.

The following construction activities are required to be done at night due to impacts to traffic. This list is not meant to be all encompassing; however, the nighttime construction will be limited to just essential activities:

- Placement of temporary concrete barrier and temporary traffic stripes along State Route 4 and Balfour Road as construction staging occurs
- Construction of the center pier columns for the eastbound SR-4 bridge over Balfour Road
- Placement of pre-cast girders for the eastbound SR-4 bridge over Balfour Road
- Several pavement conforms at ramps and along Balfour Road

Construction of the proposed improvements would result in temporary noise increases at sensitive receptors in the vicinity of the Project. Construction-period noise reduction measures (Mitigation Measure III.F.1 in the 1994 FEIR) were updated in 2003 as part of a Supplemental EIR prepared by the Bypass Authority, and would apply to the current Project:

- The majority of noise-generating activities at the construction site or in areas adjacent to the construction site associated with the Project in any way would be restricted to the hours of 7:00 a.m. to 6:00 p.m., Monday through Friday, and 8:00 a.m. to 5:00 p.m. on Saturdays. Nighttime construction will be limited to just essential activities. No construction activities should occur Sundays or holidays. Equip all internal combustion engine driven equipment with intake and exhaust mufflers which are in good condition and appropriate for the equipment.
- Unnecessary idling of internal combustion engines should be strictly prohibited.
- Avoid staging of construction equipment within 200 feet of residences and locate all stationary noise-generating construction equipment, such as air compressors and portable power generators, as far as practical from existing noise sensitive receptors. Construct temporary barriers to screen stationary noise generating equipment when located in areas adjoining noise sensitive land uses.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists. Route all construction traffic to and from the Project site via designated truck routes. Prohibit construction related heavy truck traffic in residential areas where feasible. Prohibit construction truck traffic in the Project vicinity during non-allowed hours.
- Notify adjacent residents to the Project site of the construction schedule in writing.
- Designate a "noise disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and would require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule (the City should be responsible for designating a noise disturbance coordinator and the individual Project sponsor should be responsible for posting the phone number and providing construction schedule notices).

These measures remain in effect for all Project-related construction work.

The construction of the Project would not result in a substantially more severe impact than described in the 1994 FEIR. No additional mitigation is required to reduce the temporary noise increases due to Project construction activities.

Off-site Improvements

The off-site improvements would require minor excavation work (up to one foot), as well as one weekly truck trip to deliver the DRA. Given the minimal excavation work and infrequency of additional truck trips, the noise generated from these activities would be minimal, infrequent and not result in any substantial change in noise levels in this area.

3.7 TRAFFIC

3.7.1 PRIOR FEIR ANALYSIS

The 1994 FEIR analyzed potential impacts of the SR-4 Bypass Project on traffic and transportation in the area. The FEIR concluded that the general impact of the SR-4 Bypass Project was beneficial to traffic levels of service on roadways in the Project area. However, there were several locations where levels of service would worsen as a result of the SR-4 Bypass Project. The FEIR included three significant, unavoidable effects that would potentially occur despite implementation of the proposed mitigation measures.

3.7.2 UPDATED ANALYSIS

A Traffic Operations Report (TOR) for the Phase 1 SR-4/Balfour Road interchange improvements was prepared by Fehr & Peers in August, 2013 (included as **Appendix G**). The report documents existing and future (2020 and 2040) traffic conditions within the study area. Traffic operations were analyzed to determine the improvements that would best serve anticipated traffic growth through the study area. Year 2020 represents the opening year while 2040 represents the design year. Study intersections analyzed include: Balfour Road/Cortona Way, Balfour Road/SR-4, and Balfour Road/Summerset Drive. The traffic analysis evaluates the SR-4 mainline segments east and west of the proposed Balfour Road interchange, as well as seven freeway ramps.

The TOR concludes that the interchange improvements would have beneficial impacts to traffic levels of service on roadways in the study area. The TOR also concludes that traffic levels of service (LOS) at the Balfour Road/SR-4 intersection would operate at unacceptable levels without the Project. The discussion below summarizes the TOR analysis for conditions with and without the Project.

No-Project Conditions

Under the no-project conditions, the SR-4/Balfour Road intersection would remain as a two lane expressway with an at-grade intersection at Balfour Road. The study intersections were analyzed based on projected traffic volumes for 2020 and 2040 under the no-project scenario.

Table 4 summarizes year 2020 and 2040 study intersection LOS under the no-project scenario. As shown in **Table 4** below, the SR-4/Balfour Road intersection is projected to operate at unacceptable LOS E during AM peak hours in 2020 and at LOS F during AM peak hours in 2040.

During the PM peak hour, the SR-4 Balfour Road intersection is projected to drop from LOS D in year 2020 to LOS E in year 2040. Additionally, the Balfour Road/Cortona Way intersection is projected to drop from LOS C in 2020 to LOS E in 2040 during both AM and PM peak periods.

Table 4 Intersection LOS Summary for the No-Project Scenario

Year 2020 No-Project Scenario				
Intersection	Control	Peak Hour	Delay (sec)	LOS
Balfour Rd/Cortona Way	Signal	AM	32	C
		PM	34	C
Balfour Rd/SR-4	Signal	AM	65	E
		PM	52	D
Balfour Rd/Summerset Dr	Signal	AM	6	A
		PM	9	A
Year 2040 No-Project Scenario				
Intersection	Control	Peak Hour	Delay (sec)	LOS
Balfour Rd/Cortona Way	Signal	AM	63	E
		PM	61	E
Balfour Rd/SR-4	Signal	AM	105	F
		PM	75	E
Balfour Rd/Summerset Dr	Signal	AM	7	A
		PM	10	A

Source: Fehr & Peers, 2013

Phase 1 Project Conditions

The Project would generally include a four lane freeway (two mixed flow lanes in each direction) from the Lone Tree Way interchange to south of the Balfour Road interchange. The freeway cross section would transition south of the Balfour Road interchange to a two-lane expressway. The freeway off-ramps at Balfour Road would each be one lane, transitioning to three lanes at the ramp termini intersections. The ramp termini intersections would be signalized.

The intersection analysis assumes that signal timing improvements would be implemented as traffic volumes in the study area continue to increase. As shown in **Table 5** below, the study intersections are projected to improve substantially compared to the no-project conditions, and would operate at acceptable LOS C or better during both AM and PM peak hours under both 2020 and 2040 scenarios at all study intersections.

Table 5 Phase 1 - Intersection LOS Summary for the Project

Year 2020 Project Scenario				
Intersection	Control	Peak Hour	Delay (sec)	LOS
Balfour Rd/Cortona Way	Signal	AM	21	C
		PM	22	C
Balfour Rd/SR-4 EB Ramps	Signal	AM	13	B
		PM	14	B
Balfour Rd/SR-4 WB Off-Ramp/WB Loop On-Ramp	Signal	AM	4	A
		PM	6	A
Balfour Rd/Summerset Dr	Signal	AM	4	A
		PM	5	A
Year 2040 Project Scenario				
Intersection	Control	Peak Hour	Delay (sec)	LOS
Balfour Rd/Cortona Way	Signal	AM	33	C
		PM	28	C
Balfour Rd/SR-4 EB Ramps	Signal	AM	17	B
		PM	15	B
Balfour Rd/SR-4 WB Off-Ramp/WB Loop On-Ramp	Signal	AM	4	A
		PM	6	A
Balfour Rd/Summerset Dr	Signal	AM	5	A
		PM	5	A

Source: Fehr & Peers, 2013

The construction of the Project would not result in a substantially more severe impact than described in the 1994 FEIR. No additional mitigation is required.

Off-site Improvements

The off-site improvements would require some minor excavation work (up to one foot), as well as one weekly truck trip to deliver the DRA. Given the minimal construction work required, and infrequency of additional traffic (once per week), traffic related impacts would be minimal and not significant.

3.8 VISUAL RESOURCES

3.8.1 PRIOR FEIR ANALYSIS

At the time the 1994 FEIR was prepared, the area adjacent to Balfour Road was primarily undeveloped agricultural land. Views of Mt. Diablo and intervening hills could be seen to the west from Balfour Road. The FEIR identified significant and unavoidable visual impacts as a result of SR-4 Bypass Project construction, as it would be visible from adjacent residential areas either already developed or under consideration for development and could affect views from outlying areas by introducing a roadway into the previously undeveloped landscape.

Mitigation measures addressing the impacts to the existing visual character of the area included various landscaping techniques, as seen in Mitigation Measure III.D.1 and III.D.2.

3.8.2 UPDATED ANALYSIS

Since the adoption of the 1994 FEIR, several new land developments have been constructed in the area of the SR-4/Balfour Road intersection. The Brentwood Medical Center, a large medical facility, is located southwest quadrant of the intersection. New high-density townhomes are located to the northwest, and single-family residences are located to the east. Visual simulations of the Balfour Road interchange were prepared as part of the Addendum #10 analyses, with representative viewpoints along the north side of Balfour Road, looking west towards Mt. Diablo. The simulations confirmed that existing views of Mt. Diablo and the intervening hills are partially obstructed by landscaping and commercial development along Balfour Road. The simulations also show that Mt. Diablo and the intervening hills will continue to be partially obstructed by the interchange, although the ridgeline of Mt. Diablo will remain visible. Addendum #10 concluded that construction of the Balfour Road interchange would not result in any new significant environmental effects or substantial increases in the severity of the previously identified visual impacts identified in the 1994 SR-4 Bypass Project FEIR.

Since the visual impact analysis for Addendum #10, there have been no changes in the visual resources and types of viewers within the Project area. When compared to the visual simulations prepared in 2011, the proposed Phase 1 interchange improvements include equal numbers of elevated ramp and bridge structures, with minor shifts (less than 20 feet) in the alignments of each; two clear-spanning bridge structures that would be at a similar elevation as the structures previously proposed; and similar areas of total roadway/paved surface improvements. With the construction of Phase 1 of the SR-4/Balfour Road interchange, views of the visual resources from the Project area (namely Mt. Diablo and other hillsides) would experience the same level of visual intrusion and obstruction of these views when compared to the Project that was evaluated in Addendum #10. The Project design changes do not propose any new structures or roadway improvements that would change the conclusions of the previously completed visual impact analyses.

The Project would not result in any new significant environmental effects or increase the severity of impacts to visual resources previously identified in the 1994 FEIR.

Off-site Improvements

The off-site improvements would require some minor excavation work (up to one foot), and the application of an aggregate gravel base over an existing maintenance road. Given the minimal construction work required and no change in topography, this work would not result in any visual impact.

4 Conclusion

Construction of Phase 1 of the SR-4/Balfour Road interchange and associated off-site improvements would not result in any new significant environmental effects or substantial increases in the severity of the previously identified significant effects of the 1994 FEIR.

None of the conditions described in §15162 of the CEQA Guidelines requiring for the preparation of a subsequent FEIR have occurred. Therefore, this Addendum to the 1994 FEIR is an appropriate level of environmental review for the construction of Phase 1 of the SR-4/Balfour Road interchange, as identified in §15164 of the CEQA Guidelines.



Project Site & Vicinity

Figure

- ① Separate EB/WB Travel Lanes
- ② Remove Existing SR-4 Crossover
- ③ EB SR-4 Crossover
- ④ WB SR-4 On-Ramp
- ⑤ EB SR-4 Diagonal Off-Ramp
- ⑥ EB SR-4 Loop On-Ramp
- ⑦ Proposed Daylighted Portion of Deer Creek
- ⑧ WB SR-4 Loop On-Ramp
- ⑨ WB SR-4 Diagonal Off-Ramp



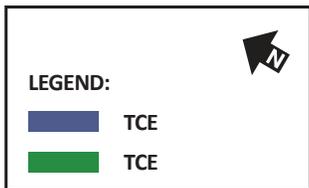
LEGEND:

 Project Alignment



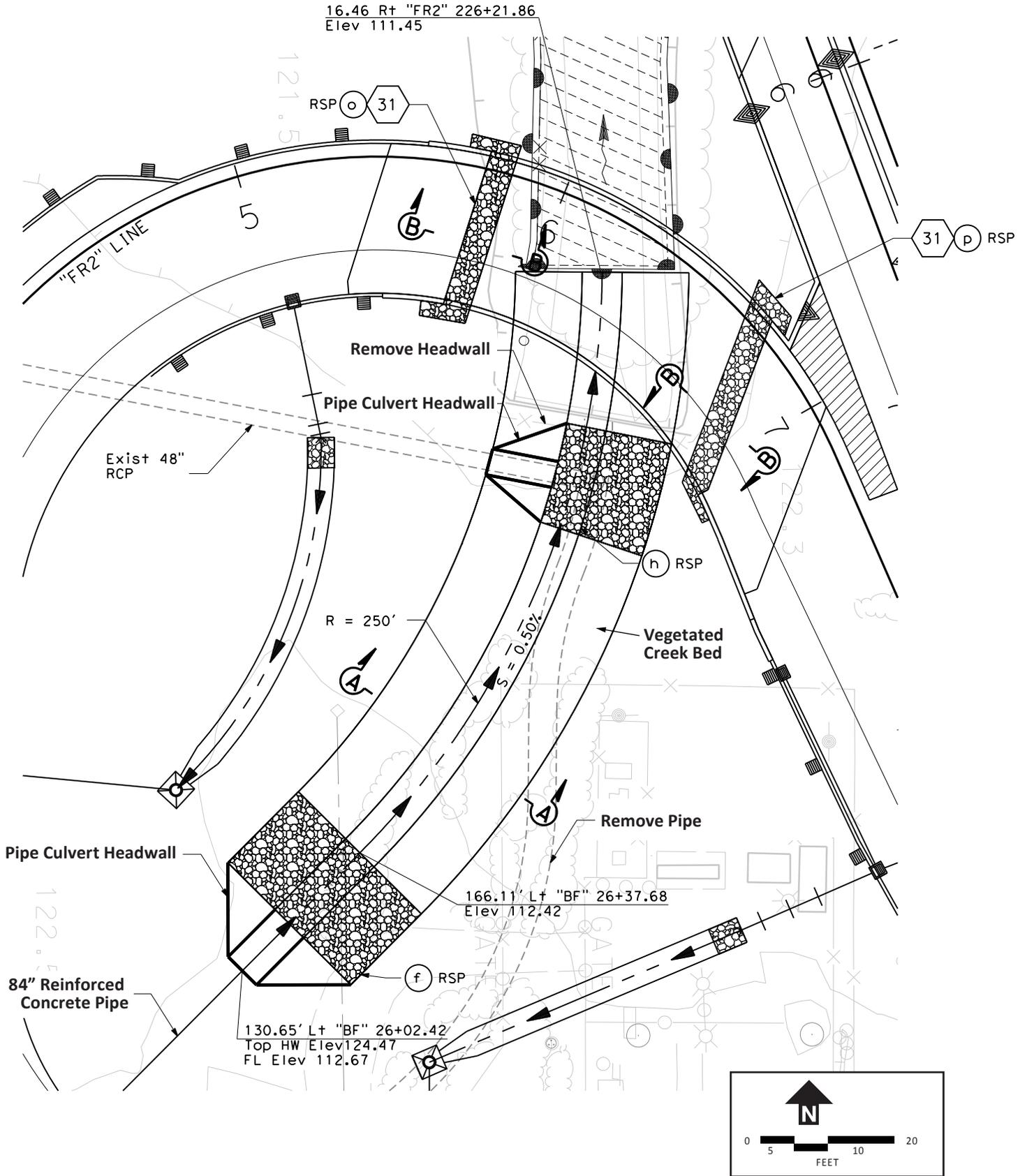
Proposed Project Improvements

Source: Quincy Engineering, 2014



PG&E Relocations

Figure



Deer Creek Daylighting Improvements

Figure



LEGEND:



-  To be demolished
-  To be relocated

Offsite Improvements at Sellers Avenue