

Appendix B CEQA Checklist

Determining Significance Under CEQA

CEQA Guidelines Section 15064 (b) broadly defines a significant effect on the environment as a substantial or potentially substantial adverse change in the physical environment. For the purpose of this document, pertinent criteria from the CEQA Guidelines were used to establish significance criteria for the project. A significant impact would occur under the following circumstances:

- Implementation of the project would induce substantial population growth in the area;
- Implementation of the project would change the community cohesion or the economy of the area;
- Implementation of the project would effect the use of existing neighborhood or regional parks or other recreational facilities in a manner that would physically deteriorate the facility or reduce its ability to function as a recreational resource;
- Implementation of the alternatives would create the need for new or substantially altered public facilities, utilities or services;
- Implementation of the alternatives would create a disproportionate impact to an Environmental Justice Community.

CEQA Environmental Checklist

The following checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. The CEQA impact levels include potentially significant impact, less-than-significant impact with mitigation, less-than-significant impact, and no impact. Please refer to the following for detailed discussions regarding impacts:

- Guidance: Title 14, Chapter 3, California Code of Regulations, Sections 15000 et seq. (http://www.ceres.ca.gov/topic/env_law/ceqa/guidelines/)

- Statutes: Division 13, California Public Resource Code, Sections 21000-21178.1 (http://www.ceres.ca.gov/topic/env_law/ceqa/stat/)

CEQA requires that environmental documents determine significant or potentially significant impacts. In many cases, background studies performed in connection with the project indicate no impacts. A “no impact” reflects this determination. Any needed discussion is included in the section following the checklist.

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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AESTHETICS - Would the project:

- | | | | | |
|---|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a) Have a substantial adverse effect on a scenic vista? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

AGRICULTURE RESOURCES - In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

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|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

AIR QUALITY - Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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d) Expose sensitive receptors to substantial pollutant concentration?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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e) Create objectionable odors affecting a substantial number of people?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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BIOLOGICAL RESOURCES - Would the project:

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

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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CULTURAL RESOURCES - Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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d) Disturb any human remains, including those interred outside of formal cemeteries?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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GEOLOGY AND SOILS - Would the project:

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

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

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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ii) Strong seismic ground shaking?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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iii) Seismic-related ground failure, including liquefaction?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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iv) Landslides?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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b) Result in substantial soil erosion or the loss of topsoil?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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HAZARDS AND HAZARDOUS MATERIALS –

Would the project:

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Emit hazardous emissions or handle hazardous or acutely hazardous material, substances, or waste within one-quarter mile of an existing or proposed school?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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HYDROLOGY AND WATER QUALITY - Would be the project:

a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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LAND USE AND PLANNING - Would be the project:

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|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Physically divide an established community? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Conflict with any applicable habitat conservation plan or natural community conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

MINERAL RESOURCES - Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

NOISE - Would the project:

- | | | | | |
|---|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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POPULATION AND HOUSING - Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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PUBLIC SERVICES -

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Police protection?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Schools?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Parks?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Other public facilities?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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RECREATION -

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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TRANSPORTATION/TRAFFIC - Would be the project:

a) Cause an increase in traffic which his substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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c) Result in a change in air traffic patters, including either an increase in traffic levels or a change in location that results in substantial safety risks?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incomplete uses (e.g., farm equipment)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) Result in inadequate emergency access?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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f) Result in inadequate parking capacity?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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UTILITY AND SERVICE SYSTEMS - Would be the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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g) Comply with federal, state, and local statutes and regulations related to solid waste?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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MANDATORY FINDINGS OF SIGNIFICANCE -

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, or cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Discussion of CEQA Checklist Responses and Summary of Mitigation Measures

Impacts discussed below are referenced to the appropriate resource area and subsection identified in the checklist (i.e., Noise “a),” etc.). The mitigation measures identified are incomplete in the sense that they have not yet been agreed upon by all of the appropriate responsible agencies.

Impacts Mitigated to a Less Than Significant Level

The following summarizes the mitigation for impacts determined less than significant with mitigation, and references the sections of this IS/EA where the mitigation is described.

Aesthetics

- c) There is a potential for impacts to occur to the visual character or quality of the project area (see Impacts, beginning Section 2.17.3, and Mitigation, Section 2.17.4).

Mitigation. *The following measures would reduce this impact to less than significant:*

- *Design and place landscaping as plans for construction are completed, to blend the roadway improvements into the local community.*
- *Provide landscaping at Pacheco Boulevard in the vicinity of the intersection with the proposed slip ramps, pending a maintenance agreement between the local entity and the State.*
- *Use slope rounding techniques to integrate the structures into the landscape.*
- *Construct retaining walls to avoid or minimize impacts on adjacent properties. Match color and textures to existing walls within the project limits.*
- *Make new soundwalls similar in design and finish to existing walls in the vicinity. Install planting where adequate space is available and maintenance is feasible. Plant vines at even intervals along the soundwalls to reduce the walls’ visual dominance and glare and to deter graffiti.*

Biological Resources

- a,d)** There is a potential to impact protected or candidate species or their habitat, sensitive natural communities, or movement of native residents or migratory wildlife (see Impacts, beginning Section 2.8.2, and Mitigation, Section 2.8.3).

Mitigation. *Twelve measures to avoid and minimize potential impacts to listed Central Valley ESU steelhead and chinook salmon to reduce the potential impact to less than significant. These measures range from limiting construction activities to certain seasons in areas where habitat is identified to ensuring that materials placed in streams shall be nontoxic. These measures are detailed in Section 2.8.3.*

All proposed measures to mitigate impacts to biological resources would be subject to approval by the appropriate Federal and State natural resource agencies.

Geology and Soils

- a i, ii,iii, c)** There is a potential for impacts from fault rupture, ground shaking, liquefaction, and locating the project on a geologic unit or soil that is unstable (see Impacts, beginning Section 2.9.2, and Mitigation, Section 2.9.4).

Mitigation. *Incorporating recommendations from geologic and geotechnical investigations performed during the final design would reduce these impacts to less than significant. A regular maintenance program, including annual inspections, should also be carried out. Section 2.9.4 details the mitigation recommendations.*

Hydrology and Water Quality (Floodplains)

- h)** There is a potential for impacts because of the placement of the proposed project within a 100-year flood hazard area, which could result in impeding or redirecting flood flows (see Impacts, beginning Section 2.10.2, and Mitigation, Section 2.10.4).

Mitigation. *Designing the proposed new bridge structure to maintain current flow capacity would reduce this impact to less than significant.*

Noise

- a, d)** There is a potential for generation of noise levels in excess of established standards from existing and future traffic volumes, and during project construction (see Impacts, beginning Section 2.4.2, and Mitigation, Section 2.4.4).

Mitigation. *The construction of soundwalls would be incorporated into the project design.*

Population and Housing

- c) Some residents living within the proposed right-of-way would be adversely affected by the proposed project. Impacts to people within the project right-of-way would include the relocation of people in five to seven homes. A business may also be relocated if a slip ramp is built at Pacheco Boulevard. This relocation impact is considered significant (see Impacts, beginning Section 2.14.3, and Mitigation, Section 2.14.7).

Mitigation. *The individuals and businesses displaced by the project would be offered relocation assistance services and payments for purposes of locating a suitable replacement property, in accordance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended. Eligible displaced households are also entitled to relocation payments to relieve the financial hardship of locating and acquiring replacement housing. Mitigation measures would be adopted by CCTA and Caltrans to reduce the relocation impacts to less than significant.*

Mitigation for Impacts That Are Less Than Significant

The following less than significant impacts include recommended mitigation that would ensure the avoidance of significant impacts.

Aesthetics

- a) There is a potential for adverse effects to occur to a scenic vista (see Impacts, beginning Section 2.17.3, and Mitigation, Section 2.17.4).

Mitigation. *Impacts would be minimized and avoided by the following measure:*

- *Design and place landscaping along areas disturbed by construction to screen the roadway and associated vehicles.*

- d) There is a potential for impacts to occur from new sources of light or glare (see Impacts, beginning Section 2.17.3, and Mitigation, Section 2.17.4).

Mitigation. *Impacts would be minimized and avoided by the following measure:*

- *Limit and design lighting to minimize light intrusion into adjacent areas. Include landscaping, where space allows, to help screen lighting from vehicles to residential areas adjacent to the freeways.*

Air Quality

a,b,c,d) There would be potential construction impacts to air quality (see Impacts, beginning Section 2.3.2, and Mitigation, Section 2.3.5).

Mitigation. *Temporary impacts would be avoided and minimized by the instituting dust control measures identified in the BAAQMD CEQA Guidelines (BAAQMD 1999). These measures are specified in Section 2.3.5.*

Biological Resources

b) There is a potential to impact a riparian habitat or other sensitive natural community (see Impacts, beginning Section 2.7.3, and Mitigation, Section 2.7.4).

Mitigation. *Impacts would be minimized and avoided by the following measures:*

- *Loss of nesting habitat trees shall be mitigated by installing replacement trees as part of the project landscaping.*
- *In October of each construction year and at project completion, slopes and graded areas would be reseeded for erosion control.*

c) There is a potential to impact federally protected wetlands (see Impacts, beginning Section 2.6.2, and Mitigation, Section 2.6.4).

Mitigation. *Temporary and construction impacts would be avoided and minimized by the following measures:*

- *Limit disturbance to actual project site and necessary access routes, avoiding existing grades and vegetation.*
- *Erosion control and sediment detention devices shall be incorporated into the project design and implemented during construction.*
- *Disturbed soils shall undergo erosion control treatment prior to October 31 and after construction is completed.*
- *Restrict work within creek channels to the seasonal period designated in the project's regulatory permits.*

Permanent impacts to wetlands would be avoided or minimized by the following measures:

- *Permanent revegetation and tree replanting will be performed.*
- *On-site wetland mitigation opportunities appear limited. Off-site, compensatory mitigation may be available through a conservation bank or an in-lieu fee.*

Geology and Soils

a iv, b, d) Hazards due to landslides, substantial soil erosion or loss of topsoil, or expansive soils would result in a less than significant impact (see Impacts, beginning Section 2.9.2, and Mitigation, Section 2.9.4).

***Mitigation.** Incorporating recommendations from geologic and geotechnical investigations performed during the final design would further reduce this hazard. Section 2.9.4 details the mitigation recommendations.*

Hazards and Hazardous Materials

d) The project's proximity to a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 would result in a less than significant impact (see Impacts, beginning Section 2.2.2, and Mitigation, Section 2.2.3).

***Mitigation.** To further reduce this impact, buildings acquired for the project would be investigated for contamination, and soil and groundwater testing may be conducted for four sites and for soils identified for grading or excavation. Section 2.2.3 details the mitigation recommendations.*

Appendix C Summary of Mitigation and Avoidance Measures

The following is a comprehensive list of the recommended mitigation and avoidance measures for the proposed project. The list addresses all impacts, by resource area, regardless of their classification or magnitude.

Mitigation measures have been specified where applicable in the discussions for each environmental and community topic area evaluated in this Initial Study/Environmental Assessment (IS/EA). The following provides additional explanation of the mitigation measures.

Hazardous Waste and Material

Prior to construction, steps would be taken to verify whether site contamination in the study area may impact any of the proposed phases of the interchange. The proposed steps would include but are not limited to the following:

- **Investigations of all buildings acquired for the project.** The Initial Site Assessment did not address any potential contamination issues regarding existing structures. Because the project would involve the acquisition of commercial and residential properties, these structures should be investigated for potential hazardous materials or contamination issues prior to construction. The investigations should include checking for the presence of building materials painted with lead-based paint, storage buildings that might contain hazardous materials, asbestos (i.e., transit pipe, insulation, and siding), home heating fuel storage tanks, and other similar issues.
- **Soil and groundwater sampling.** Further investigation of the four identified potential hazardous waste sites is recommended prior to construction to evaluate the potential for hydrocarbon impacts. Soil sampling and analysis will be required if the excavated material is used on-site, disposed of off-site in a landfill, or reused off-site. This sampling and analysis should be conducted prior to construction. Although none of the reports and databases reviewed indicates that the project phases are likely to be contaminated, potential hazards or construction delays would be avoided by early investigation.

Where contamination is present, a remediation plan that complies with State and Federal standards would be developed and implemented in cooperation with the current landowner.

Air Quality

No substantial impacts to air quality would result from operation of Phases 1 and 2, or from cumulative implementation of Phases 1 through 5. To mitigate potential construction impacts, dust control practices would be employed to minimize or avoid potential exceedances (violations) of the air quality standard for particulate matter less than 10 micrometers in diameter (PM₁₀) during construction. Mitigation measures that would be employed include the following (BAAQMD 1999):

- Water all active construction areas at least twice daily.
- Cover all trucks hauling soil, sand, and other loose materials *or* require all trucks to maintain at least 0.6 meter (2 feet) of freeboard.
- Pave, apply water three times daily, or apply nontoxic soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
- Hydroseed or apply nontoxic soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more).
- Enclose, cover, water twice daily or apply nontoxic soil binders to exposed stockpiles (dirt, sand, etc.)
- Limit traffic speeds on unpaved roads to 24 km per hour (15 miles per hour).
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.

In addition, the following can mitigate pollutant emissions in construction equipment exhaust:

- Keeping engines properly tuned

- Limiting idling
- Avoiding unnecessary concurrent use of equipment

The proposed measures would be implemented for the construction of Phases 1 through 5. Implementation of the above mitigation measures would result in construction emissions occurring at a less-than-substantial level.

Noise

The installation of soundwalls would mitigate for long-term noise impacts, and the location of each preliminarily evaluated wall is included in this IS/EA. For each of the soundwalls, a “reasonableness allowance” has been calculated that considers the future noise level, the noise level increase caused by the project (e.g., most increases are within 1 to 3 A-weighted decibels [dBA]), and the age of the dwelling units protected. The calculated reasonableness allowance provides an indication of an amount that, under the Federal Highway Administration (FHWA) and Caltrans criteria, is a reasonable expenditure of funding to existing dwellings impacted by highway noise. The cost of constructing a barrier has been estimated and compared to the calculated allowance. Barriers have been preliminarily identified that are generally cost effective, that are reasonably close to being cost effective, or that provide benefits as noted in the discussion of noise mitigation. Section 2.4.4 provides additional details.

To minimize construction impacts, Caltrans and CCTA will include the following measures in the construction contract:

- Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of the type recommended by the manufacturer. No internal combustion engine shall be operated on the project without a muffler.
- The noise level from the Contractor’s operations shall not exceed 86 dBA (L_{max}) at a distance of 50 feet between the hours of 9:00 p.m. and 6:00 a.m., with the exception for specific locations, activities, and times and/or days to be determined during final design of the project.
- The use of loud sound signals shall be avoided in favor of light warnings except those required by safety laws for the protection of personnel.

- Construction equipment should be required to conform to the provisions in Section 7-1.01I, Sound Control Requirements, of the latest Standard Specifications. These requirements are meant to minimize the impact from construction noise yet in no way relieve the contractor from complying with local noise ordinances.
- Soundwalls will be aesthetically treated with colors, patterns, and textures that are similar to existing walls along the corridor. Vines could be planted on walls during the interchange construction project to deter graffiti and reduce glare.

Wetlands and Other Waters of the United States

An estimated less than 0.01 hectare (ha) (less than 0.03 acre) of wetlands would be permanently impacted by the proposed project. To avoid or minimize any potential impacts to wetlands and waters of the United States, the following measures are recommended:

- Disturbance to existing grades and vegetation will be limited to the actual site of the project and necessary access routes. Placement of all roads, staging areas, and other facilities shall avoid and limit disturbance to wetland habitat. Existing ingress or egress points shall be used. Following completion of the work, the contours of the area shall be returned to preconstruction condition or better.
- Erosion control and sediment detention devices (e.g., well-anchored sandbag cofferdams, straw bales, or silt fences) shall be incorporated into the project design and implemented at the time of construction. These devices shall be in place during construction activities, and after if necessary, for the purposes of minimizing sediment impact to the wetlands and input to waters of the United States. These devices will be placed at all locations where the likelihood of sediment input exists. A supply of erosion control materials would be kept on hand to respond to sediment emergencies and to cover small sites that may become bare.
- All disturbed soils at each site will undergo erosion control treatment prior to October 31 and after construction is terminated. Treatment includes hydroseeding and sterile straw mulch. Disturbed soils on a gradient of over 30 percent will have erosion control blankets installed. Permanent revegetation and tree replanting will take place in small openings in the erosion control blanket, with native species.

- Work within the Grayson and Walnut Creek channels will be seasonally restricted. It is expected that the necessary regulatory permits will specify that work within the channels should be limited to a seasonal work period. Temporary construction access to and within the channels would be necessary for installation of new piers. Installation of the piers should be completed within a single year's allowable work period. This work period limitation shall be specified in the construction contracts to ensure that the construction access is considered temporary.
- Permanent revegetation and tree replanting will be performed. Native plant species will be considered for revegetation. Section 2.17.4 outlines conceptual revegetation and planting concepts.
- For unavoidable impacts to wetlands, development of on-site mitigation is limited. Off-site mitigation is available within the local and regional area through approval of use of a conservation bank.

Vegetation and Wildlife

If construction is initiated during nesting season in areas with existing trees that could provide bird nesting, a preconstruction survey should be performed to determine if active nests are present. If an active nest is discovered within 46 meters (150 feet) of the areas to be disturbed, construction should be restricted from the 46-meter (150-foot) area until the nest is vacated and juveniles have fledged. If no construction is planned during this period within 46 meters (150 feet) of potential nesting trees, no surveys are necessary.

Impacts to wildlife and vegetation are not considered substantial, and no specific mitigation is proposed. However, in October of each construction year and at project completion, slopes and graded areas would be reseeded for erosion control. Conceptual project landscaping, including tree replacement, is discussed in Section 2.17.4.

The construction contractor will be directed to control rodent populations prior to clearing and grubbing operations and during the life of the contract. The contractor can only control rodents within the work limits.

Threatened and Endangered Species

Central Valley ESU steelhead and chinook salmon have been known to pass through the Grayson Creek and Walnut Creek areas in or near the project site. Measures were

developed to avoid or minimize effects to these federally listed species based on 2004 correspondence with NOAA Fisheries and the agency's concurrence dated May 18, 2007. The following measures would be implemented:

- All work would be conducted during the dry season (June 1 through October 31) within the Walnut and Grayson Creek channels.
- Work will only occur in a dry channel. If it is necessary to conduct work in a live stream, the workspace shall be isolated to avoid construction activities in flowing water. The proposed project shall not dewater the entire stream and shall allow fish passage past the project area. Adequate water depth and channel width must be maintained at all times for fish passage. Prior to construction activities, the workspace will be isolated from flowing water to prevent sedimentation and turbidity and avoid effects to fish. The diversion shall remain in place during the project and be removed immediately after work is completed, in a manner that will allow flow to resume with the least disturbance to the substrate.
- If a project requires dewatering any area, either a pump shall remove water to an upland disposal site, or a filtering system shall be used to collect the water and return clear water to the creek. The pump intake shall be fitted with a fish exclusion device that meets NOAA Fisheries fish screening criteria (refer to <http://www.nwr.noaa.gov/1salmon/salmesa/pubs/swrscrng.pdf> or an equivalent source).
- All materials placed in stream, such as pilings and retaining walls, shall be nontoxic. Any combination of wood, plastic, cured concrete, steel pilings or other materials used for in-channel structures shall not contain coatings or treatments or consist of substances deleterious to aquatic organisms that may leach into the surrounding environment in amounts harmful to aquatic organisms.
- All construction materials and fill will be stored and contained in a designated area that is located away from channel areas to prevent inadvertent transport of materials into the adjacent stream channel.
- Disturbance to existing grades and vegetation will be limited to the actual site of the project and necessary access routes. Placement of all roads, staging areas, and other facilities shall avoid and limit disturbance to streambank or stream channel habitat as much as possible. When possible, existing ingress or egress points shall be used and/or work performed from the top of the creek banks. Following completion of the work, the contours of the creek bed and creek flows shall be

returned to preconstruction condition or better with an emphasis on creating easy fish passage through the area. Obvious barriers to fish passage should be removed to facilitate upstream movement.

- Erosion control and sediment detention devices (e.g., well-anchored sandbag cofferdams, straw bales, “Aqua Dam,” or silt fences) shall be incorporated into the project design and implemented at the time of construction. These devices shall be in place during construction activities, and after if necessary, for the purposes of minimizing fine sediment and sediment/water slurry input to flowing water, and of detaining sediment laden water on-site. These devices will be placed at all locations where the likelihood of sediment input exists. A supply of erosion control materials would be kept on hand to cover small sites that may become bare and to respond to sediment emergencies.
- All debris, sediment, rubbish, vegetation or other material removed from the channel banks, channel bottom, or sediment basins shall be disposed of at an approved disposal site. All petroleum products chemicals, silt, fine soils, and any substance or material deleterious to listed species shall not be allowed to pass into, or be placed where it can pass into the stream channel. There will be no sidecasting of material into any waterway.
- Any soils within the active channel that are disturbed, moved, or uncovered shall be tested for chemical contaminants. If such soils are found to be contaminated at levels that are deleterious to aquatic life, including salmonids, those soils shall be removed from the area and disposed of in an appropriate upland or off-site facility.
- Fueling, cleaning or maintenance of equipment would be prohibited except in designated areas located as far from the creek as possible. In addition, the contractor would maintain adequate materials onsite for containment and cleanup of any spills.
- After construction and prior to October 31, all disturbed soils at each site would undergo erosion control treatment consisting of temporary seeding, straw mulch, or other measures pursuant to a Storm Water Pollution Prevention Plan (SWPPP) approved by the Regional Water Quality Control Board. Any disturbed soils on a gradient of over 30 percent would also have an erosion control blanket installed. Permanent revegetation or tree replanting should then take place in small openings in the erosion control blanket, with suitable species that are compatible with native vegetation.

- During dewatering activities a fisheries biologist shall be present to salvage chinook and steelhead individuals, should they be present. Fish will be netted, placed in a bucket of water and immediately moved to a downstream portion of the creek. Records of species, relative size, and number individuals shall be kept. Periodic checks of the work area shall occur to ensure that salmonids have not re-entered the work area.

Geology

The design and construction of the proposed project would incorporate features that would offset the potential geological impacts associated with the project, given its location and sensitivity to hazards. The following measures are listed according to type of hazard.

Fault Rupture and Subsidence

- Any proposed engineering design would have to be carried out in accordance with Caltrans Seismic Design Criteria and the regulations detailed in the Alquist-Priolo Earthquake Fault Zoning Act. This will involve detailed, site-specific subsurface geologic investigations to accurately locate the active trace(s) of the fault.
- Potential surface deformation resulting from aseismic creep can be mitigated by a regular maintenance program to repair the road surface, curbs, and other engineered facilities. Annual inspection should be carried out to assess ongoing creep damage.

Earthquake Shaking

- Roadways and bridges will have to be designed and constructed at a minimum to the seismic design requirements for ground shaking specified in the Uniform Building Code for seismic zone 4.
- To satisfy the provisions of the 1998 California Building Code, the proposed phase facilities will have to be designed to withstand ground motions equating to approximately a 500-year return period (10 percent probability of exceedance in 50 years). Bridges will have to be designed in accordance with the latest Caltrans Seismic Design Criteria.

Liquefaction and Lateral Spreading

- Site-specific exploratory borings and accompanying laboratory testing during or prior to final design of the project will be required to delineate any potentially

liquefiable materials. Potentially liquefiable deposits will either have to be removed or engineered (dewatered or densified) to reduce their liquefaction potential or the engineering design will have to incorporate pile foundations that extend beyond potentially liquefiable deposits.

Expansive Soil

- Site-specific borings and testing should include investigation for subsurface materials that might contribute to heaving. To prevent heaving, pyritic shales should be overexcavated and replaced with fill that will isolate the remaining rock from either air or water.

Landsliding

- Site-specific geologic and geotechnical investigations and laboratory testing, as needed during the final design/plans, specifications, and estimates (PS&E) phase, will determine the stability of slopes and their parent material. Using these data, appropriate slope-strengthening and stabilizing designs can be developed and this impact avoided or minimized.

Erosion

- Soil and slope stability measures can prevent or reduce erosion. Erosion of soils during construction can be minimized using temporary hydroseeding to provide a vegetation cover or straw bales, visquine plastic slope cover, and temporary drainage measures to prevent excessive slope runoff. These measures are addressed in more detail in the *Water Quality Report, Interstate 680/State Route 4 Interchange Improvements, Contra Costa County, CA* (URS 2002).

Floodplains

To minimize the potential for effects from placement of the project within a 100-year flood hazard area, which could result in impeding or redirecting flood flows, the proposed new bridge structure would be designed to maintain the current flow capacity.

During a flood event, water elevations south of Grayson Creek could increase by a maximum of 2 cm (1 inch) at the point of greatest change, near Pacheco Boulevard, with the first four phases in place, and by up to 0.09 meter (3.5 inches) when Phase 5 is completed. The Contra Costa County Flood Control and Water Conservation District concurred that a minor amount of fill could be placed and compacted on the top of the existing maintenance road just upstream of the interchange as necessary to

increase existing levee height to offset the changes. This action would be coordinated between CCTA and the Contra Costa Flood Control and Water Conservation District.

Hydrology

Construction. Construction best management practices (BMPs) are temporary BMPs that the project contractors would have to implement to meet Best Available Technology/Best Conventional Technology for construction projects. The selected construction site BMPs would be consistent with those practices to achieve compliance with requirements of the State of California National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activities.

Construction BMPs that have been identified in the project's Storm Water Data Report (May 2005) include the use of vegetated swales to minimize velocity and erosive conditions and revegetation of slopes to reduce erosion and sediment loads. Other construction BMPs that may be set forth in SWPPPs include using temporary mulching, seeding, or other suitable stabilization measures to protect uncovered soils; storing materials and equipment to ensure that spills or leaks cannot enter storm drain systems or surface water; developing and implementing a spill prevention and cleanup plan; installing traps, filters, or other devices at drop inlets to prevent contaminants from entering storm drains; and using barriers such as straw bales or plastic to minimize the amount of uncontrolled runoff that could enter drains or surface water. Because of piling operations, construction dewatering BMPs will also be included in the SWPPP and implemented during construction to prevent any non-storm water from entering into waterways or environmentally sensitive areas.

Erosion control measures would be developed as part of the SWPPP and applied to exposed areas during construction. Erosion control measures may include the trapping of sediments within the construction area by placing barriers such as straw bales, sandbags, or gravel barriers at the perimeter of downstream drainage points. Other methods of minimizing erosion impacts include limiting the amount and length of exposure of graded soil, hydromulching and hydroseeding (applying a mixture of mulch, seed, and fertilizer), and other soil protection measures such as straw mulch or compaction.

The overall mitigation structure for water quality impacts is a condition of the NPDES permit, other planning agreements, and the expected need for county storm water management programs. Implementation details for all BMPs would be

developed and incorporated into the SWPPP, project design, and operations prior to the beginning of project construction. With proper implementation of these measures and compliance with the new NPDES permit, short-term construction-related water quality impacts would be avoided or minimized.

Long Term. The project design will incorporate Design Pollution Prevention (DPP) BMPs. DPP BMPs are intended to stabilize soil and prevent contaminants and soil from entering storm water runoff. Another category of BMPs called Permanent Treatment BMPs are intended to treat storm water runoff and remove contaminants and sediments that have already entered the runoff. The project's NPDES permit will likely stipulate that Permanent Treatment BMPs to control pollutant discharges be considered and implemented for all new or reconstructed facilities. Permanent Treatment BMPs that are generally considered are infiltration basins, detention basins, and biofiltration swales/strips.

Although design plans for the interchange have not been finalized, the use of existing biofiltration swales will likely be the primary Permanent Treatment BMP. An existing biofiltration swale already exists in the southwestern corner of the interchange area, adjacent to Grayson Creek, and treats runoff from portions of the western half of the interchange area. This swale will remain in place with the interchange project modifications. Additional drainage areas that can be used as biofiltration swales have been identified in the Storm Water Data Report along most of both sides of SR-4 within the project limits and on short segments of I-680. The swales will be designed to also minimize velocity and erosive conditions. New and existing slopes that are disturbed will be vegetated, and an erosion control plan will be developed. Outlet protection/energy dissipation devices consisting of flared end sections and rock slope protection will be provided at all newly constructed outlets to reduce velocities and prevent scouring and sediment resuspension.

The use of large infiltration or detention basins is generally not considered feasible for modifying or controlling large storm events because of the lack of necessary right-of-way in the interchange area. The only area identified for a potential small detention basin (or swale area) is west of I-680 and south of Grayson Creek. This basin or swale can be considered during final design, but the use of the biofiltration measures discussed above is considered more feasible and practicable.

Existing storm sewer subcatchments within the project site drain directly into drainage inlets, which lead to deep trunk storm sewer systems. These systems drain

directly to Grayson Creek. Storm water treatment of these systems was considered, but to construct a new treatment facility and to reconstruct large portions of the existing storm sewer system to divert storm water to a treatment facility was determined to be cost-prohibitive.

Community Impacts

Relocation assistance payments and counseling will be provided to persons and businesses in accordance with the Federal Uniform Relocation Assistance and Real Properties Acquisition Policies Act, as amended, to ensure adequate relocation and a decent, safe, and sanitary home for displaced residents. All eligible displacees will be entitled to moving expenses. All benefits and services will be provided equitably to all residential and business relocatees without regard to race, color, religion, age, national origins and disability as specified under Title VI of the Civil Rights Act of 1964.

Mitigation measures for the loss of homes and an area business would be adopted and finalized by Contra Costa Transportation Authority and Caltrans. Appropriate mitigation may involve compensation for the cost of comparable units in the vicinity. Displacees would also be entitled to moving expenses. The Caltrans Relocation Assistance Program, as established by Federal and State law, would provide relocation assistance to the displacees. To the extent possible, the aim will be to relocate households and the commercial property as close to the existing locations as possible.

A limited loss of property may be required within the existing parking areas for up to two area businesses and the California Highway Patrol, but business operations would not be affected. Public parking would be maintained throughout the project vicinity. While areas of the Caltrans Park and Ride lot may be affected by project construction, steps would be taken during the project construction phases to ensure that a net loss of parking is avoided. Any portions of the property impacted by construction would be fenced off and include appropriate signage. Circulation and access in the area would also be maintained.

Utilities and Emergency Services

The contractor would notify emergency service providers of the proposed dates of the construction of the overall project work and utility relocation work. Coordination with local utility service providers will take place during engineering design development (the PS&E phase).

Prior to awarding construction contracts for any of the proposed project phases, Caltrans and/or CCTA will coordinate with CCCSD and CCWD to identify facilities or pipelines in the vicinity of the project, and work with the districts to provide assurance that their facilities will not be impacted or will be relocated accordingly.

Traffic and Transportation

Construction of Phases 1 and 2 is anticipated over a 2-year period. Caltrans will require the contractor to include measures to avoid and minimize regional and local traffic disruption through notification of upcoming work and posting of detour or closure plans.

Visual/Aesthetics

The following measures would be developed in detail in landscaping plans for the project, during the project design phase.

- Design and place landscaping to minimize the visual impacts of the interchange construction work. Categories of landscaping have been initially identified at a conceptual level for the project right-of-way in the visual resources technical report. These categories identify general areas suitable for varying heights of ground cover and shrubs, trees, grasses and wildflowers (for erosion control), and vines (potentially for soundwalls). An actual planting design would be developed during the overall design stage of project planning. New and replacement planting will be carried out within State right-of-way in conformance with Caltrans standards for types of species, setback clearances, and maintenance criteria. Native plant species will be considered. In areas where direct planting is not possible due to setback requirements, planting would be placed within interchange areas. The planting design will conform to FAA standards for height restrictions in and around Buchanan Field Airport.
- Landscaping will be provided at Pacheco Boulevard in the vicinity of the slip ramps under a separate contract from the phased interchange improvements. In areas where direct planting is not possible due to setback requirements, planting would be placed within interchange areas. Any landscaping adjacent to local streets, both inside and outside of State right-of-way, would be subject to approval of a permanent maintenance agreement between the local entity and the State.
- Slope rounding techniques would be utilized to integrate the structures into the landscape by sculpting the earth so that it follows the horizontal direction and the

gradient of the slopes of the ramps, and by making the transitions from the flat areas to the slopes gradual in appearance.

- To avoid or minimize impacts on adjacent properties, retaining walls will be constructed. The wall's color and textures will match existing walls within the project limits.
- Limit and design lighting to minimize light intrusion into adjacent areas. Include landscaping, where space allows, to help screen lighting from vehicles to residential areas adjacent to the freeways.
- Soundwalls are proposed for noise abatement purposes. Walls will be similar in design and treated with aesthetic finishes to be consistent with existing walls within the project limits and along the I-680/SR-4 corridor. Soundwalls and retaining walls will be reviewed during project development for installation of planting where adequate space is available and maintenance is feasible. Vine plantings at even intervals along the soundwalls would be planted as a minimum mitigation measure (where space allows) to reduce the walls' visual dominance and glare and to deter graffiti.

Archaeological Resources

No further archaeological work is necessary within the current project Area of Potential Effect (APE). If in the future the project expands to include unsurveyed lands, then additional archaeological work may be necessary. Likewise, if cultural materials are encountered during ground-disturbing activity associated with this project, all work in the vicinity of the discovery must halt until a qualified archaeologist makes an assessment of the find and follows the proper protocol for the specific type of cultural material. Special note should be made regarding this stop work requirement in the area outside of the APE, southeast of the I-680/SR-4 interchange toward Buchanan Field Airport, consistent with the concern expressed about a known site in that area.

Appendix D Summary of Relocation Benefits

10.07.00.00

MOBILE HOMES

10.07.01.00 Applicability [49 CFR 24.501]

This section describes the requirements for relocation payments to a person displaced from a mobile home and/or mobile home site who meets basic eligibility requirements. Except as modified by this section, such a displaced person is entitled to a moving expense payment of their personalty in accordance with 10.04.02.00. Replacement housing payments should be paid in accordance with the same requirements as persons displaced from conventional dwellings.

10.07.02.00 Moving and Related Expenses [49 CFR 24.502]

The owner of a mobile home that is not acquired by the Department is eligible for the actual, reasonable, and necessary expenses to relocate that mobile home to another site.

The owner of the mobile home who occupies the unit, is also eligible for RHPs described further in this section. However, if the mobile home is not acquired, but the homeowner-occupant obtains a RHP under one of the circumstances described in 10.07.03.00, the owner is not eligible for payment for moving the mobile home. The owner-occupant may also be eligible for a payment for moving personal property from the mobile home.

The following rules apply to payments for actual moving expenses under 49 CFR §24.301:

1. A displaced mobile homeowner, who moves the mobile home to a replacement site, is eligible for the reasonable cost of disassembling, moving, and reassembling any attached appurtenances, such as porches, decks, skirting, and awnings which were not acquired, anchoring of the unit, and utility "hook-up" charges.
2. If a mobile home requires repairs and/or modifications so it can be moved and/or made decent, safe, and sanitary, and the Department determines that it would be economically feasible to incur the additional expense, the reasonable cost of such repairs and/or modifications is reimbursable.
3. A non-returnable mobile home park entrance fee is reimbursable to the extent it does not exceed the fee at a comparable mobile home park, if the person is displaced from a mobile home park or

the Department determines that payment of the fee is necessary to effect relocation.

Exhibit 10-EX-21 shows moving cost methods that displacees may select. The two basic cases are shown in the following table.

Criteria	Method
Mobile home is purchased and is not relocated.	Displacees may be paid to move their contents based on actual cost or Moving Expense Schedule A or B (10.04.02.03).
Mobile home is not purchased by the State but is relocated.	<p>Payment for the move may be based on actual cost or self move. If the mobile home and household goods are moved to separate locations, actual cost method must be used for both the mobile home and household goods.</p> <p>Occupants of mobile homes may be paid for moving their personal property in the mobile home by any of the three methods described in 10.04.02.02. A payment for moving the mobile home itself is made on an actual cost basis.</p>

10.07.02.01 Actual Cost of Mobile Home Moves

Displacee shall obtain two bids and submit them to the District for approval prior to the move. If necessary, the District may assist displacee in obtaining the required bids. Upon approval of the bids, the District will inform displacee to proceed with the lowest bidder. Prior to approval the District must carefully review the bids with special attention to:

- Disconnecting and reconnecting utilities and appliances.
- Providing an additional axle and/or brakes if necessary to comply with State requirements.
- Alternative of shipping the unit on a lowboy trailer.
- Need to rent wheels and/or tires.

- Temporarily protecting separated doublewide units.
- Resealing the roof, especially for older units.
- Dealing with floor material when units are split.
- Replacing items such as awnings, skirting, and steps to bring them up to code.
- Setting up on replacement pad, which includes leveling and fitting skirting to the new contour.

10.07.02.02 Moving Expenses for Personalty

The occupant of a mobile home unit is entitled to moving expenses for their personal property contained in and around the mobile home unit. Moving expenses can be paid for either an actual move, an MSA, or a Fixed Moving Schedule payment.

If the mobile home unit is moved to a replacement site, some of the personal property may be moved as part of the unit. The RAP Agent should ensure that items moved with the mobile home unit are not included in the calculation of a Fixed Moving Schedule.

The non-occupant owner of a mobile home unit may also be entitled to moving expenses for personal property. These items might include the appliances in the mobile home or yard fixtures that were not acquired. The basis for the payment can be an actual move, a self-move, or a Fixed Moving Schedule. Again, the RAP Agent should ensure that items moved with the mobile home unit (e.g., appliances) are not included in the calculation of a Fixed Moving Schedule.

10.07.02.03 Additional Actual Costs

Allowances for food and lodging required during move and set-up time for mobile home relocation are paid in accordance with the appropriate procedures in 10.04.02.01. The RAP Agent shall predetermine the number of rooms and meals and incidental allowances based on size and composition of the displaced family.

When a mobile home is moved to an individual site, the RAP Agent must predetermine that the mobile home meets code requirements for placement on the site.

Payment for acceptable miscellaneous mobile home moving costs (such as painting or waxing, skirting, awnings, landscaping, and minor work to hide

protuberances) is made only to achieve the move where alternatives are:

- To buy the unit and pay a PD that exceeds the total move cost.
- To indefinitely postpone the move.

These items must be required in available comparable parks. A statement of landscaping requirements should be obtained in advance of the move.

The standard 50-mile limit applies to mobile home moves.

10.07.03.00 Replacement Housing Payment for 180-Day Mobile Home Owner-Occupants [49 CFR 24.503]

A displaced owner-occupant of a mobile home is entitled to a RHP if the person both owned and occupied the mobile home on the displacement site for at least 180 days prior to the FWO, and all the other basic eligibility requirements are met.

To be eligible for benefits, the Department must either:

- Acquire the mobile home and the mobile home site, or
- Determine that the mobile home that is not to be acquired, cannot be moved because:
 - It is not and cannot economically be made decent, safe, and sanitary; or
 - The unit would incur substantial damage or unreasonable cost; or
 - There is no available comparable replacement site (and is not capable of being moved); or
 - It does not meet mobile home park entrance requirements.

A 180-day owner-occupant who is displaced from a mobile home on a rented site may be eligible for a PD based on a comparable mobile home available for purchase, plus a RD based on a comparable mobile home site available for rent. The 180-day owner-occupant who rents the mobile home site may be eligible for a DP in lieu of the RD if a replacement site is purchased. All basic eligibility requirements must be met.

10.07.03.01 Price Differential (PD)

A PD is paid when the Department purchases the mobile home.

The District must make a market value appraisal of the mobile home as soon as it qualifies for purchase. The PD is the difference between the amount paid for the unit and the probable cost of the most comparable replacement dwelling, which could be another mobile home set-up or a conventional residential property.

Payment may be released when transfer of title is complete. As with other replacement housing entitlements, spend-to-get applies. The cost of awnings, carports, skirting, landscaping, and installation may be added, but incidental expenses should not be included in the PD calculation.

Site purchase differentials apply when the Department acquires a mobile home site from the owner-occupant and displacee purchases and occupies a replacement property.

10.07.03.02 Purchase of Replacement

If a replacement unit is purchased from a dealer, displacee must open an escrow account with an authorized escrow agent. Escrow instructions must prohibit the release of funds prior to satisfactory installation of the mobile home and passage of title. Between private parties the transaction may be handled by escrow or the funds held in the District until completion of the transaction. For assignments and verification of occupancy, Exhibits 10-EX-22, 10-EX-23, and 10-EX-24 may be used. Either way the transaction is handled, other RAP payments due the claimants may be deposited into escrow to reduce the need for purchase financing.

10.07.03.03 Suitable Replacement Sites

The requirements for comparable replacement dwellings apply to the selection of replacement sites. Displacee should be given as many choices of suitable replacement sites as are available at the time of relocation.

Where many units must be relocated and only a small number of sites can be found, it is not required that all vacancies are filled before authorizing purchase. Generally, the vacancy rate should be less than ten percent of need before authority to purchase and pay a RHP is granted.

The reason for purchasing mobile homes even though there are some vacancies available is so displacees will not have to draw straws to decide who must move into the few available vacant spaces and who can wait for the RHPs offered to those who cannot find a space.

10.07.03.04 Incidental Expenses

There are some variations in the eligible items discussed in 10.04.13.00. The major ones are:

- Sales tax or use tax payments - reimbursement is based on the calculated replacement cost or the actual taxes paid, whichever is less. The sales taxes paid on necessary added improvements are also eligible.
- DMV title transfer fees.
- Permit fees - such as charges for building and transportation permits, if not part of the moving expenses.

10.07.03.05 Mortgage Differential Payment

Mobile home loans typically have shorter terms and higher interest rates. Interest rates may be obtained from local institutions that provide mobile home financing. The displacee must have a loan on the displacement property (conventional dwelling, mobile home unit, mobile home site), to qualify for a MD payment.

The following instructions cover the two basic relocation situations:

- Conventional Dwelling to Mobile Home - The maximum rate to be applied is the current prevailing loan rate in effect for conventional dwellings when displacee obtains the financing commitment.
- Mobile Home to Mobile Home or Conventional Dwelling - The maximum rate to be applied is the current prevailing interest rate applicable to the type of replacement dwelling displacee purchases and occupies.

10.07.04.00 **Replacement Housing Payment for 90-Day Mobile Home Occupants [49 CFR 24.504]**

A displaced 90-day occupant of a mobile home is eligible for a RHP if the person:

- (a) Owned and occupied the mobile home on the displaced mobile home site for at least 90 days prior to the FWO, but less than 180 days, or
- (b) Rented and occupied the Mobil home on the displaced mobile home site for at least 90 days prior to the FWO.

And:

- (c) Meets all the other basic eligibility requirements.

10.07.04.01 **Rent Differential (RD)**

Rent Differential payments for the mobile home tenant may be combined with other benefits to which displacees are entitled (10-EX-21). The Department only has to acquire the site from the tenant in order for the tenant to be eligible for a RD payment.

There may be circumstances when the displacee owns the mobile home and rents the site (and vice versa). The displacee's tenure as a tenant or an owner is determined by their status in the mobile home unit, not the mobile home site.

Example: Owns the mobile home, rents the site. Treat them as an owner (all other eligibility requirements must be met).

Example: Rents the mobile home, owns the site. Treat them as a tenant (all other eligibility requirements must be met).

10.07.04.02 **Down Payment (DP)**

An eligible 90-day tenant may convert the RD to a DP of at least \$5,250. The full amount of the DP must be applied to the purchase price of the replacement dwelling (e.g., mobile home, mobile home site, conventional dwelling) and related incidental expenses.

Down Payments are done in the same manner as conventional dwellings (See Section 10.04.25.00 for details) except:

- Escrow requirements are the same as mobile home PD.

- The RD can be based on just the mobile home, the mobile home site, or both.
- The Department needs to acquire only the site to qualify displacee for payment.
- 180-day mobile home owner-occupants who formerly rented their site can qualify for a DP on a replacement site up to the amount of the RD.

10.07.05.00 **Replacement Housing Payment Based on Dwelling and Site [49 CFR 24.505(a)]**

Both the mobile home and mobile home site must be considered when computing a RHP. For example, a displaced mobile home occupant may have owned the displacement mobile home and rented the site or may have rented the displacement mobile home and owned the site. Also, a person may elect to purchase a replacement mobile home and rent a replacement site, or rent a replacement mobile home and purchase a replacement site. In such cases, the RHP shall consist of a payment for a dwelling and a payment for a site. However, the total RHP shall not exceed the maximum payment (either \$22,500 or \$5,250) permitted under the section that governs the computation of the dwelling before last resort housing payment provisions must be applied.

10.07.05.01 **Cost of Comparable Replacement Dwelling [49 CFR 24.505(b)]**

If a comparable replacement mobile home and/or mobile home site is not available, the RHP shall be computed on the basis of the reasonable cost of a conventional comparable replacement dwelling.

A mobile home site in a rural area should never be compared to a mobile home site in a mobile home park. If the mobile home unit will be moved, then the RHP for the mobile home site should be based on a comparable replacement site as to size and amenities. If necessary, the cost of site preparations necessary to accommodate a mobile home (e.g., pad, utilities, ground preparation) should be included in the calculation of the RHP.

If the Department determines that it would be practical to relocate the mobile home, but the owner-occupant elects not to do so, the Department may determine that, for purposes of computing the PD the cost of a comparable replacement dwelling is the sum of:

- The value of the mobile home; and
- The cost of any necessary repairs or modifications; and
- The estimated cost of moving the mobile home to a replacement site.

10.07.06.00 **Initiation of Negotiations**
[49 CFR 24.505(c)]

If the mobile home is not actually acquired, but the occupant is considered displaced under this part, "initiation of negotiations" is the date the offer is made to acquire the land, or, if the land is not acquired, the written notification that he or she is a "displaced person".

10.07.07.00 **Person Moves Mobile Home**
[49 CFR 24.505(d)]

If the owner is reimbursed for the cost of moving the mobile home under this part, he or she is not eligible to receive a replacement housing payment to assist in purchasing or renting a replacement mobile home. The person may, however, be eligible for assistance in purchasing or renting a replacement site.

10.07.08.00 **Partial Acquisition of Mobile Home Park**
[49 CFR 24.505(e)]

The acquisition of a portion of a mobile home park property may leave a remaining part of the property that is not adequate to continue the operation of the park. If the Department determines that a mobile home located in the remaining part of the property must be moved as a direct result of the project, the owner and any tenant shall be considered a displaced person who is entitled to relocation payments and other assistance.

10.07.09.00 **Part Ownership of a Mobile Home**
[49 CFR 24.503]

The occupant of a mobile home who owns a partial interest in the unit, should be treated as an owner of the mobile home unit. The Department is not required to provide persons owning only a fractional interest in the displacement dwelling with a greater level of assistance to purchase a replacement dwelling than would normally be required if the person was the sole owner of the property.

The partial interest owner may be entitled to receive a RHP based on the difference between the asking price of a comparable mobile home site and the total acquisition price of the displacement site - not their

fractional interest or share. If no mobile home sites are available for purchase within the displacee's financial means, then the fractional interest owner may be entitled to a RD.

10.07.10.00 **Mobile Home DS&S Inspections**

Decent, safe, and sanitary requirements are generally the same as those for conventional dwellings, except a mobile home must have an HCD approval decal. The mobile home must be placed in a fixed location on real property in accordance with local laws and ordinances.

A RAP Agent should inspect a mobile home prior to purchase since it may lack qualifying DS&S features.

10.07.11.00 **Rental of Vacant Spaces**

Situations have arisen in the acquisition of mobile home parks where displacees, by reason of occupancy at the time of the offer, relocated before the Department acquired the park. The owner of the mobile home park re-rented the vacant spaces to Non-Tenured occupants. When the Department attempted to vacate the mobile home park, ineligible displacees were unable to relocate their mobile homes since:

- The mobile homes were not acceptable in other mobile home parks in the area because they were of substandard size or condition, or
- No replacement housing of any type was available in the replacement area.

The lack of sufficient spaces to relocate eligible tenants has also caused problems. This has resulted in project delays and the implementation of LRH payments, at a substantial cost to the State, to relocate these persons.

Two potential solutions to these problems are available:

- Rental of spaces in the park to be acquired to prevent Non-Tenured occupants from moving into the right of way.
- Rental of spaces in probable replacement mobile home parks to secure future spaces for eligible displacees who could not otherwise relocate.

The Acquisition function may rent vacant mobile home spaces in replacement parks, as noted above, using an appropriate agreement with the owner. This

procedure is implemented only if absolutely necessary since its effect on the replacement housing market could be significant and politically sensitive. It should be the last possible use of normal relocation benefits short of proceeding with LRH.

Rental of spaces in other mobile home parks must be discussed and justified in the RID. All other means of providing solutions to relocation problems must be explored before rental of spaces can be recommended. The RID must discuss type and location of replacement parks and their ability to accommodate displacees.

10.07.12.00 **Mobile Home as Replacement
for Conventional Dwelling**

A mobile home may be used as a replacement for a conventional dwelling provided it satisfies DS&S requirements. Eligibility and benefits under the various occupancy and replacement combinations are covered in 10-EX-21.

Most owner-occupants, whether long-term or short-term, who move from conventional housing to mobile homes will not qualify for RHPs (PD or RD).

Because mobile homes are generally less expensive than conventional dwellings, they will not meet the spend-to-get requirement. This is particularly true where an owner-occupant moves from conventional dwelling and purchases a mobile home and rents the site, or vice versa. The result is that displacee simply purchases a replacement dwelling for less than the price paid for the acquired property or rents a displacement dwelling for less than the economic rent of the acquired dwelling.

Where the RAP Agent knows that owner-occupants of conventional dwellings are considering mobile homes as replacement housing, the RAP Unit must notify the owner-occupants in writing that they may not qualify for any replacement housing payment. The RAP Agent should carefully consider each case on its own merits because the value of the acquired property may be low enough, or the cost of the mobile home high enough, that the owner-occupant could qualify for payment. Claims not meeting spend-to-get requirements shall be denied.

However, 90-day occupant-owners may be eligible for a DP of \$5,250.

Appendix E Glossary of Technical Terms

This appendix briefly explains the technical terms and names used in this IS/EA. A list of acronyms appears directly before Chapter 1.

Best Management Practice (BMP)	Any program, technology, process, operating method, measure or device that controls, prevents, removes or reduces pollution.
Basin Plan	A specific plan for control of water quality within one of the nine hydrologic basins of the State under the regulation of a Water Quality Control Board.
Cooperating Agency	An agency, other than the lead agency, that has jurisdiction by law or other expertise, that is formally involved in a proposed project.
Corridor	A strip of land between two termini within which traffic, topography, environment, and other characteristics are evaluated for transportation purposes.
Cumulative effects	Project effects that are related to other actions with individually insignificant but cumulatively significant impacts.
Decibel	A numerical expression of the relative loudness of a sound.
Encroachment (floodplain)	An action within the limits of the 100-year floodplain.
Endangered	Plant or animal species that are in danger of extinction throughout all or a significant portion of its range.
Erosion	The wearing away of the land surface by running water, wind, ice, or other geological agents.
Federal Register	A Federal publication that provides official notice of Federal administrative hearings and issuance of proposed and final Federal administrative rules and regulations.
Floodplain (100-year)	The area subject to flooding by a flood or tide that has a 1 percent chance of being exceeded in any given year.
FONSI	Finding of No Significant Effect, issued by FHWA upon approval of the NEPA review process

Freeway	A divided arterial highway with full control of access and with grade separations at intersections.
Habitat	The place or type of site where a plant or animal naturally or normally lives and grows.
Hectare	A unit of surface measure in the metric system, equal to 10,000 square meters.
Initial Study (IS)	Environmental review document prepared to comply with CEQA
Initial Site Assessment (ISA)	A Caltrans term for an initial study to determine hazardous waste issues on a project.
L_{eq}	A unit used for evaluation of sound impacts, L_{eq} is the measurement of the fluctuating sound level received by a receptor averaged over a time interval (usually 1 hour).
Level of Service (LOS)	A measurement of capacity of a roadway.
Median	The area of a divided highway that separates the traveled way for traffic in opposite directions.
Mitigation	Compensation for an impact by replacement or provision of substitute resources or environments. Mitigation can include avoiding an impact by not taking a certain action, minimizing impacts by limiting the degree of an action, or rectifying an impact by repairing or restoring the affected environment.
Negative Declaration (ND)	Issued upon approval of the environmental review process under CEQA
NPDES	National Pollutant Discharge Elimination System. A permit regulated by the Regional Water Quality Control Board that is required if more than 0.4 ha (1 acre) of original ground is graded. One condition of this permit is that the contractor must submit a Storm Water Pollution Prevention Plan (SWPPP), which is similar to the Water Pollution Control Plan required by Caltrans' Standard Specification 7-1.01G.
Practicable	An action that is capable of being done after taking into consideration cost, existing technology and logistics in light of overall project purposes.

Receptors	Term used in air quality and noise studies that refers to houses or businesses that could be affected by a project.
Regulatory agency	An agency that has jurisdiction by law.
Responsible agency	A public agency other than the Lead Agency that has responsibility for carrying out or approving a project under CEQA.
Right-of-way	A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes.
Riparian	Pertaining to the banks and other adjacent terrestrial (as opposed to aquatic) environs of freshwater bodies, watercourses, estuaries, and surface-emergent aquifers, whose transported freshwater provides soil moisture sufficient in excess of that available through local precipitation to potentially support the growth of vegetation.
RTP	Regional Transportation Plan, prepared by the regional agency responsible for transportation planning and funding. In Contra Costa County, the RTP is prepared by the Metropolitan Transportation Commission to identify transportation improvement priorities.
Special-status species	Plant or animal species that are either (1) federally listed, proposed for or a candidate for listing as threatened or endangered; (2) bird species protected under the Federal Migratory Bird Treaty Act; (3) protected under state endangered species laws and regulations, plant protection laws and regulations, Fish and Game codes, or species of special concern listings and policies; (4) recognized by national, state, or local environmental organizations (e.g., California Native Plant Society).
STIP	The State Transportation Improvement Program, updated every 2 years, is the California Transportation Commission's priorities for improvements on and off the state highway system.
SWPPP	A Storm Water Pollution Prevention Plan is prepared to evaluate sources of discharges and activities that may affect storm water runoff, and implement measures or practices to reduce or prevent such discharges.

Threatened	A species that is likely to become endangered in the foreseeable future in the absence of special protection.
Underground Storage Tanks (USTs)	Tanks that typically store fuel or liquid chemicals underground.
Waters of the United States	<p>As defined by the USACE in 33 Code of Federal Regulations 328.3(a):</p> <ol style="list-style-type: none">1. All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;2. All interstate waters including interstate wetlands;3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce, including any such waters:<ol style="list-style-type: none">(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or(ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or(iii) Which are used or could be used for industrial purposes by industries in interstate commerce;4. All impoundment of waters otherwise defined as waters of the United States under this definition;5. Tributaries of waters identified in paragraphs 1-4;6. The territorial seas;7. Wetlands adjacent to waters (waters that are not wetlands themselves) identified in paragraphs 1-6.

Wetlands

When used in a formal context, such as in this IS/EA, wetlands are areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances will support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas [33 CFR 328.3(b)].



Appendix F Noise Measurements, Modeling Results, and Barrier Analysis

The noise analysis methods and criteria applied are discussed in Sections 2.4.1.1 and 2.4.1.2. Noise measurements and modeling were conducted at noise-sensitive land use locations that could be affected by the project (Appendix A, Figures A-1 through A-13). Table F-1 lists the noise modeling results for Phases 1 and 2. Table F-2 lists the results for Phases 3 through 5. These tables identify the locations that exceed the noise abatement threshold criteria that require evaluation of noise barriers (see criteria described in Section 2.4.1.2).

The future predicted noise levels at each of the evaluation locations are shown in Table F-3 for Phases 1 and 2, and in Table F-4 for Phases 3 through 5. The results of the evaluation of potential barriers considered, based on noise-reduction effectiveness, number of homes effectively protected, and a brief summary of whether the barrier identified and evaluated is reasonable from a present cost and effectiveness consideration are listed in Table 2.4-2 in the main text of this report for Phases 1 and 2, and in Table 2.4-3 for Phases 3 through 5.

TABLE F-1

Noise Modeling Results - Phases 1 and 2

Location	Description	Development Predates 1978? (Yes or No)	Existing Worst Hour Noise Level Leq(hr)	Future No Project Worst Hour Noise Level Leq(hr)	Future Project Worst Hour Noise Level Leq(hr)	Noise Increase (+) or Decrease (-)	Impact Type (S, A/E, CR or NONE)
West Leg	EB Route 4 w/o I-680	(Receivers South of EB State Route 4; Station 89+00 to 112+00) (Figures A-1 to A-3)					
W-S-1	Rear yard of 1295 Paradise Cir.	Yes	64	64	65	1	NONE
W-S-2	Front yard of 1320 Paradise Cir.	Yes	62	62	64	1	NONE
W-S-3	Rear yard of 1391 Paradise Cir.	Yes	68	69	70	2	A/E
W-S-4	Front of 1404 Myrtlewood Ct.	Yes	60	60	61	1	NONE
W-S-5	Front of 2161 Elderwood Dr. ~ 16 m. from the centerline of Muir Rd. and 39 m. from the edge of Route 4 fill section.	Yes	67	68	68	1	A/E
W-S-LT	Rear yard of 1541 Deerwood Dr. ~ 24 m. from the edge of Route 4 fill section. (Offset Measurement)	Yes	69	69	71	2	A/E
W-S-6	~ 13 m. from the center of the near lane of Muir Rd. at Fountainhead Dr.	Yes	64	65	65	1	NONE
W-S-7	Rear yard of 2205 Highcliff Ct.	No	61	61	62	1	NONE
W-S-8	Rear yard of 2127 North Peak Place.	No	66	66	67	2	A/E
W-S-9	Rear yard of 1134 Temple Dr.	Yes	60	61	60	-1	NONE
W-S-10	Front of 1121 Temple Dr.	Yes	63	63	60	-3	NONE
W-S-M1	Rear yard of single- family residence on Paradise Cir. east of W-S-1.	Yes	68	68	69	1	A/E
W-S-M2	Rear yard of single-family residence on Deerwood Dr. east of W-S-LT.	Yes	69	70	71	1	A/E
W-S-M3	Rear yard of single-family residence on Deerwood Dr. east of W-S-LT and south of W-S-M2.	Yes	66	66	67	1	A/E
W-S-M4	Second row receiver on Deerwood Dr. south of W-S-LT.	Yes	60	60	62	1	NONE
W-S-M5	Second row receiver, multi-family residence south of W-S-6.	Yes	58	58	59	1	NONE
W-S-M6	Rear yard of single-family residence, west of Sweetwater Dr. and adjacent to Muir Rd.	No	62	62	63	1	NONE
W-S-M7	Second row receiver, single-family residence west of Sweetwater Dr.	No	57	57	58	1	NONE
W-S-M8	Second row receiver, single-family residence east of Sweetwater Dr.	No	54	54	55	1	NONE
W-S-M9	Second row receiver, single-family residence on North Peak Pl.	No	61	61	62	1	NONE
W-S-M10	Second row receiver, rear yard of single family residence at the end of North Peak Pl.	No	63	63	64	1	NONE
W-S-M11	Third row receiver, rear yard of single family residence at the end of East View Pl.	No	59	59	60	1	NONE
W-S-M12	Rear yard of single-family residence, west of W-S-8 and adjacent to Muir Rd.	No	65	65	66	2	A/E

Impact Type S = Substantial Increase (12 dBA or more)
A/E = Approach or Exceed NAC
CR = Class Room Noise (Sec 216 of Streets & Hwys Code)

TABLE F-1

Noise Modeling Results - Phases 1 and 2

Location	Description	Development Predates 1978? (Yes or No)	Existing Worst Hour Noise Level Leq(hr)	Future No Project Worst Hour Noise Level Leq(hr)	Future Project Worst Hour Noise Level Leq(hr)	Noise Increase (+) or Decrease (-)	Impact Type (S, A/E, CR or NONE)
West Leg	WB Route 4 w/o I-680	(Receivers North of WB State Route 4; Station 89+00 to 112+00) (Figures A-1 to A-3)					
W-N-LT	Rear yard of 104 Morning Glory Ln.	No	68	68	69	1	A/E
W-N-1	Front of 106 Williamson Ct.	No	62	62	63	1	NONE
W-N-2	1785 Arnold Dr. ~15 m. from the centerline of the near lane of Arnold Dr.	Yes	69	70	70	1	A/E
W-N-3	Holiday Hills north of Arnold Drive ~ 63 m. from edge of Arnold Dr.	No	64	65	66	1	A/E
W-N-4	Holiday Hills north of Arnold Drive ~ 38 m. from edge of Arnold Dr.	No	68	68	69	1	A/E
W-N-5	Rear yard of residence at Arnold-Glacier intersection.	Yes	64	64	65	1	NONE
W-N-6	Rear yard of 2006 Fries Ct.	No	61	62	63	2	NONE
W-N-7	Rear yard of 2040 Arnold Dr.	No	61	61	62	2	NONE
W-N-M1	Multi-family residence (Eastgate Apartments) on Arnold Drive west of W-N-LT.	No	61	61	62	1	NONE
W-N-M2	Second row receiver, single family residence in Williamson Ct.	No	62	62	63	1	NONE
W-N-M3	Single family residence on Holiday Hills Dr.	No	63	63	64	1	NONE
W-N-M4	Multi-family residence in Shadowbrook development west of W-N-1.	No	59	59	60	1	NONE
W-N-M5	Single family residence on Fig Tree Lane.	Yes	65	66	66	1	A/E
W-N-M6	Multi-family residence in Shadowbrook development near common outdoor use area.	No	64	64	65	1	NONE
W-N-M7	Rear yard of single family residence in Williamson Ct.	No	68	68	69	1	NONE
W-N-M8	Eastgate Apartments unshielded area near patios.	No	64	64	65	1	NONE
N-W-M6	Multi-family residences, between Hanson Ct. and Blum Rd.	Yes	67	68	69	2	A/E
N-W-M7	Single family residence, on Blum Rd.	Yes	68	69	70	2	A/E

Impact Type S = Substantial Increase (12 dBA or more)
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TABLE F-1

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South Leg	NB I-680	(I-680 between Concord Avenue and Interchange; Station 101+00 to 113+00) (Figures A-10 and A-11)					
S-E-LT1	West of 360 Avenida Flores in Rancho Diablo Mobile Home Park. ~ 188 m. from Rt. 4 and ~ 216 m. from I-680.	Yes	60	63	65	6	NONE
S-E-1	351 Flores in Rancho Diablo Mobile Home Park.	Yes	60	62	61	2	NONE
S-E-2	Near 265 Minoru Dr. in Concord Cascade Mobile Home Park.	Yes	70	71	73	4	A/E
S-E-3	~ 34 m. from the edge of NB I-680 at mobile home property line.	Yes	72	73	74	2	A/E
S-E-LT2	~ 16 m. from a 4.9 m. barrier near mobile homes.	Yes	67	68	78	12	A/E, S²
S-E-4	159 Algiers Lane in Concord Cascade Mobile Home Park.	Yes	62	63	77	15	A/E, S²
S-E-5	155 Algiers Lane in Concord Cascade Mobile Home Park.	Yes	64	65	74	11	A/E
S-E-M1	Back yard of single family home on Minoru Dr. (west side of street) north of S-E-2.	Yes	68	69	71	3	A/E
S-E-M2	Back yard of single family home on Minoru Dr. (west side of street) south of S-E-3.	Yes	68	69	79	10	A/E
S-E-M3	Second Row Receiver, single family home on the corner of Minoru Dr. and Amate Way.	Yes	65	66	74	10	A/E
S-E-M4	Single family home on Calle Molino north of S-E-4.	Yes	62	63	77	15	A/E, S²
S-E-M5	Single family residence on Medina Dr. (middle section of road) south of S-E-4.	Yes	63	64	77	14	A/E, S²
S-E-M6	Single family residence on Medina Dr. (southernmost corner of road) south of S-E-4.	Yes	63	64	72	9	A/E
S-E-M7	Second row receiver, front yard of single family residence on Medina Dr. south east of S-E-4.	Yes	66	67	76	10	A/E
S-E-M8	Single family home on Minoru Dr. east of S-E-M1.	Yes	59	60	67	8	A/E
S-E-M9	Single family home on Minoru Dr. south of S-E-M1.	Yes	59	60	68	9	A/E

2 A noise impact would result as noise levels would approach or exceed the NAC and would substantially increase (12 dBA or more) at land uses represented by these receivers.

Impact Type S = Substantial Increase (12 dBA or more)
 A/E = Approach or Exceed NAC
 CR = Class Room Noise (Sec 216 of Streets & Hwys Code)

TABLE F-2

Noise Modeling Results - Phases 3, 4, and 5

Location	Description	Development Predates 1978? (Yes or No)	Existing Worst Hour Noise Level Leq(hr)	Future No Project Worst Hour Noise Level Leq(hr)	Future Project Worst Hour Noise Level Leq(hr)	Noise Increase (+) or Decrease (-)	Impact Type (S, A/E, CR or NONE)
East Leg EB Route 4 e/o I-680 (State Route 4 Station 118+00 to 122+00) (Figure 2-4)							
E-S-1	Corner of Avenida Flores and Via Peralta in Rancho Diablo Mobile Home Park.	Yes	64	65	67	3	A/E
E-S-2	Front of 317 Avenida Flores ~ 87 m. from the centerline of the near lane of Route 4 in Rancho Diablo Mobile Home Park.	Yes	67	68	69	2	A/E
E-S-3	319 La Vina in Rancho Diablo Mobile Home Park.	Yes	65	65	68	3	A/E
E-S-4	Northeast corner of the Rancho Diablo Mobile Home Park at the intersection of Avenida Flores and Via Peralta.	Yes	69	70	72	3	A/E
E-S-M1	Mobile home on Avenida Flores west of E-S-2.	Yes	67	67	70	3	A/E
E-S-M2	Second Row Receiver, Mobile home on Via Peratta south of E-S-3.	Yes	63	64	66	3	A/E

East Leg EB Route 4 e/o I-680 (State Route 4 Station 136+00 to 146+00) (Figures 2-6 and 2-7)							
E-S-5	2364 Dalis Drive ~ 8 m. from a 1.5 m. barrier.	No	64	64	66	2	A/E
E-S-6	South of 2364 Dalis Drive.	No	67	67	69	2	A/E
E-S-6A	2323 Dalis Drive.	No	62	62	64	2	NONE
E-S-6B	2289 Dalis Drive.	No	59	59	61	2	NONE
E-S-M3	Back yard of Mobile home on Dalis Dr. east of E-S-5.	No	64	65	66	2	A/E
E-S-M4	Rear yard of Mobile home on Dalis Dr. southeast of E-S-5.	No	61	62	63	2	NONE
E-S-7	99 A Street south of commercial area.	Yes	62	63	65	3	NONE
E-S-LT1	~38 m. from the edge of the EB Rt. 4 to SB Rt. 242 connector ramp at setback of adjacent condominiums. (Offset measurement)	Yes	68	69	71	2	A/E
E-S-8	Northeast portion of condominium development near EB Rt. 4 to SB Rt. 242 connector ramp.	Yes	67	68	69	2	A/E
E-S-8A	~22 m. from the edge of the EB Rt. 4 to SB Rt. 242 connector ramp at setback of adjacent condominiums (#3815).	Yes	69	70	72	2	A/E
E-S-M5	Single family residence at the north end of Northwood Dr.	Yes	68	68	70	2	A/E
E-S-M6	Single family residence west of Northwood Dr, next to off ramp of eastbound 4 to southbound 242.	Yes	69	70	70	2	A/E

Impact Type S = Substantial Increase (12 dBA or more)
A/E = Approach or Exceed NAC
CR = Class Room Noise (Sec 216 of Streets & Hwys Code)

TABLE F-2

Noise Modeling Results - Phases 3, 4, and 5

Location	Description	Development Predates 1978? (Yes or No)	Existing Worst Hour Noise Level Leq(hr)	Future No	Future Project	Noise Increase (+) or Decrease (-)	Impact Type (S, A/E, CR or NONE)
				Project Worst Hour Noise Level Leq(hr)	Worst Hour Noise Level Leq(hr)		
East Leg	EB Route 4 e/o Route 242	(State Route 4 Station 148+00 to 156+00) (Figure 2-8)					
E-S-9	Front of 3638 Montreal Circle.	Yes	62	63	64	2	NONE
E-S-10	Rear yard of 3669 Montreal Circle.	Yes	59	60	61	2	NONE
E-S-11	Rear yard of 3726 Salsbury ~ 5 m. south of the ROW chain-link fence.	Yes	67	--	--	--	A/E
E-S-12	Rear yard of 3744 Salsbury.	Yes	68	--	--	--	A/E
E-S-M7	Rear yard of single family residence on western side of Montreal Cir. Southwest of E-S-9.	Yes	64	65	65	2	NONE
E-S-M8	Rear yard of single family residence on western side of Montreal Cir. west of E-S-9.	Yes	64	64	65	1	NONE
E-S-M9	Rear yard of 3726 Salsbury.	Yes	63	--	--	--	NONE
E-S-M10	Second Row Receiver on Salsbury Dr.	Yes	62	--	--	--	NONE
E-S-M11	Rear yard of single family residence on St. George Ct.	Yes	66	--	--	--	A/E
E-S-13	Front of 3799 Bayview Dr.	Yes	63	--	--	--	NONE
E-S-14	Rear yard of 3802 Bayview Dr. ~ 70 m. from the centerline of the near travel lane.	Yes	72	--	--	--	A/E
E-S-15	Rear yard of 3820 Bayview Circle ~ 60 m. south of centerline of near EB Rt. 4 travel lane.	Yes	75	--	--	--	A/E ¹
E-S-LT2	Rear yard of 3820 Bayview Circle ~ 60 m. south of centerline of near EB Rt. 4 travel lane.	Yes	77	--	--	--	A/E ¹
E-S-16	Rear yard of 3874 Bayview Circle ~ 53 m. south of centerline of near EB Rt. 4 travel lane.	Yes	75	--	--	--	A/E ¹
E-S-17	Front of 3891 Bayview Dr.	Yes	62	--	--	--	NONE
E-S-18	Front of 3951 Bayview Dr.	Yes	61	--	--	--	NONE
E-S-19	Front of 3933 Bayview Dr.	Yes	61	--	--	--	NONE
E-S-20	Park on Bayview Street overlooking Rt. 4 ~ 1.5 m. from chain-link fence.	Yes	68	--	--	--	A/E

1 The noise impact would be considered severe at noise-sensitive land uses represented by these receivers.

Impact Type S = Substantial Increase (12 dBA or more)
 A/E = Approach or Exceed NAC
 CR = Class Room Noise (Sec 216 of Streets & Hwys Code)

TABLE F-2

Noise Modeling Results - Phases 3, 4, and 5

Location	Description	Development Predates 1978? (Yes or No)	Existing Worst Hour Noise Level Leq(hr)	Future No Project Worst Hour Noise Level Leq(hr)	Future Project Worst Hour Noise Level Leq(hr)	Noise Increase (+) or Decrease (-)	Impact Type (S, A/E, CR or NONE)
North Leg	NB I-680	(Receivers East of NB I-680; Station 119+00 to 124+00) (Figure 2-12)					
N-E-1	Side yard of 55 Rutherford ~ 17 m. from the right-of-way fence.	Yes	70	71	71	1	A/E
N-E-LT	Rear yard of 48 Rutherford Ln. ~ 20 m. from the edge of the near NB I-680 travel lane.	Yes	68	69	69	1	A/E
N-E-2	Front of 45 Rutherford ~ 83 m. from the centerline of the near NB travel lane.	Yes	67	68	69	2	A/E
N-E-3	Front of 5A Rutherford.	Yes	66	67	68	2	A/E
N-E-4	~ 31 m. from the centerline of the near NB I-680 travel lane in apartment complex.	No	68	69	71	3	A/E
N-E-M1	Back yard of single family home (private driveway) off of Rutherford Dr. north of N-E-1.	Yes	65	66	66	1	A/E
N-E-M2	Second row receiver, side yard of single family residence, east of N-E-1.	Yes	66	67	67	1	A/E
N-E-M3	Front yard of single family residence, at north end of Meyers Dr., north of N-E-4.	Yes	70	71	72	3	A/E

Impact Type S = Substantial Increase (12 dBA or more)
 A/E = Approach or Exceed NAC
 CR = Class Room Noise (Sec 216 of Streets & Hwys Code)

TABLE F-2

Noise Modeling Results - Phases 3, 4, and 5

Location	Description	Development Predates 1978? (Yes or No)	Existing Worst Hour Noise Level Leq(hr)	Future No Project Worst Hour Noise Level Leq(hr)	Future Project Worst Hour Noise Level Leq(hr)	Noise Increase (+) or Decrease (-)	Impact Type (S, A/E, CR or NONE)
North Leg	SB I-680	(Receivers West of SB I-680; Station 118+00 to 129+00) (Figures 2-12 and 2-13)					
N-W-1	Setback of 4685 Pacheco Blvd. ~ 72 m. from the centerline of the near SB I-680 travel lane.	Yes	63	64	63	1	NONE
N-W-2	Setback of 4685 Pacheco Blvd. ~ 35 m. from the centerline of the near SB I-680 travel lane.	Yes	69	69	69	1	A/E
N-W-3	~ 77 m. from the centerline of the near I-680 SB travel lane.	Yes	65	66	66	1	A/E
N-W-4	Rear yard of 4795 Pacheco Blvd. ~ 102 m. from the centerline of the near I-680 SB travel lane.	No	64	65	65	1	NONE
N-W-M1	Single family residence between 680 and Pacheco Blvd. south of N-W-2.	Yes	71	72	71	1	A/E
N-W-M1A	Single family residence between 680 and Pacheco Blvd. north of N-W-1.	Yes	70	71	70	0	A/E
N-W-M2	Second row receiver, single family residence between 680 and Pacheco Blvd. north of N-W-3.	No	67	68	68	1	A/E
N-W-M3	Single family residence between 680 and Pacheco Blvd.	Yes	67	68	67	1	A/E
N-W-M4	Single family residence, between Hanson Ct. and Blum Rd.	Yes	68	69	70	2	A/E
N-W-M5	Single family residence, on Blum Rd.	Yes	68	69	70	2	A/E
N-W-M6	Multi-family residences, between Hanson Ct. and Blum Rd.	Yes	67	68	69	2	A/E
N-W-M7	Single family residence, on Blum Rd.	Yes	68	69	70	2	A/E
N-W-M8	Second row receiver, Multi family residences on Hanson Ct. (Lower level)	Yes	67	68	69	2	A/E
N-W-M9	Second row receiver, Multi family residences on Hanson Ct. (Upper level.)	Yes	68	69	69	1	A/E
N-W-LT	Rear yard of 4710 Blum. ~ 38 m. from the edge of I-680 SB.	Yes	69	70	71	2	A/E
N-W-5	Front of # 160 Hanson Ct. ~ 100 m. from the edge of I-680 SB.	Yes	67	68	69	2	A/E

Impact Type
 S = Substantial Increase (12 dBA or more)
 A/E = Approach or Exceed NAC
 CR = Class Room Noise (Sec 216 of Streets & Hwys Code)

TABLE F-3

Phase 1 and 2 Predicted Noise Levels and Reduction with Barriers in Place

Location	Future Worst Hour Noise Leq (hr)	Noise Barrier ID or Location	Future Noise Levels (dBA) with Barrier in Place							Noise Level Reduction (dBA) Achieved by Barrier					
			1.8 m Barrier	2.4 m Barrier	3.0 m Barrier	3.6 m Barrier	4.2 m Barrier	4.8 m Barrier	1.8 m Barrier	2.4 m Barrier	3.0 m Barrier	3.6 m Barrier	4.2 m Barrier	4.8 m Barrier	
			South Leg	NB I-680 s/o SR 4	SW1A - NB680 EOS SW + NB680-WB4 CONNECTOR EOS SW										
S-E-LT1	65	SW1 A	65	64	64	63	62	--	0	1	1	2	3	--	
S-E-1	61	SW1 A	60	60	60	59	58	--	1	1	1	2	3	--	
S-E-2	73	SW1 A	73	72	72	72	72	--	0	1	1	1	1	--	
S-E-3	74	SW1 A	72	71	71	70	70	--	2	2	3	3	4	--	
S-E-LT2	78	SW1 A	74	72	71	69	68	--	4	6	8	9	11	--	
S-E-4	77	SW1 A	74	72	71	69	68	--	3	5	6	8	9	--	
S-E-5	74	SW1 A	72	71	70	68	67	--	2	3	4	6	7	--	
S-E-M1	71	SW1 A	71	70	70	70	70	--	0	0	0	1	1	--	
S-E-M2	79	SW1 A	74	71	70	68	67	--	5	7	9	11	12	--	
S-E-M3	74	SW1 A	73	72	71	69	68	--	2	3	4	5	7	--	
S-E-M4	77	SW1 A	73	72	70	69	68	--	4	5	7	8	10	--	
S-E-M5	77	SW1 A	74	72	71	69	68	--	3	5	6	8	9	--	
S-E-M6	72	SW1 A	70	70	68	67	66	--	2	3	4	5	6	--	
S-E-M7	76	SW1 A	72	71	69	68	67	--	4	5	7	8	9	--	
S-E-M8	67	SW1 A	67	67	67	67	67	--	0	0	1	1	1	--	
S-E-M9	68	SW1 A	68	68	67	67	67	--	0	1	1	1	2	--	
SW1B - Option 1 - NB680 EOS SW (4.2m) + NB680-WB4 CONNECTOR EOS SW (4.2m) + MAINLINE EOS SW (Varies)															
S-E-2	74	SW1 B O1	72	71	69	68	67	--	2	3	5	6	6	--	
S-E-3	74	SW1 B O1	73	71	70	69	68	--	1	2	4	5	6	--	
S-E-M1	71	SW1 B O1	69	68	66	65	65	--	2	3	4	5	6	--	
S-E-M8	67	SW1 B O1	67	67	67	66	65	--	0	0	1	1	2	--	
S-E-M9	68	SW1 B O1	68	68	68	67	67	--	0	0	1	1	2	--	
SW1B - Option 2 - NB680 EOS SW (4.2m) + NB680-WB4 CONNECTOR EOS SW (4.2m) + ROW SW (Varies)															
S-E-2	74	SW1 B O2	70	68	66	65	64	64	3	5	7	8	9	10	
S-E-3	74	SW1 B O2	68	66	65	65	64	64	5	7	9	9	9	10	
S-E-M1	71	SW1 B O2	68	67	65	64	63	62	2	4	6	7	8	8	
S-E-M8	67	SW1 B O2	67	66	66	65	64	64	1	1	1	2	3	4	
S-E-M9	68	SW1 B O2	67	66	66	66	65	64	2	2	2	3	3	4	

Notes: Noise barriers should not exceed 4.3 m in height when located 4.5 m or less from the edge of the traveled way, and should not exceed 5.0 m in height above the ground line when located more than 4.5 from the traveled way.
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TABLE F-3

Phase 1 and 2 Predicted Noise Levels and Reduction with Barriers in Place

Location	Future Worst Hour Noise Leq (hr)	Noise Barrier ID or Location	Future Noise Levels (dBA) with Barrier in Place							Noise Level Reduction (dBA) Achieved by Barrier					
			1.8 m Barrier	2.4 m Barrier	3.0 m Barrier	3.6 m Barrier	4.2 m Barrier	4.8 m Barrier	1.8 m Barrier	2.4 m Barrier	3.0 m Barrier	3.6 m Barrier	4.2 m Barrier	4.8 m Barrier	
			West Leg EB Route 4												
W-S-1	65	SW5	64	64	63	63	62	--	1	1	2	2	3	--	
W-S-2	64	SW5	63	62	61	60	59	--	1	2	3	4	4	--	
W-S-3	70	SW5	69	68	67	66	65	--	1	2	3	4	5	--	
W-S-4	61	SW5	61	60	59	58	57	--	1	1	2	3	4	--	
W-S-5	68	SW5	68	68	67	67	67	66	1	1	1	2	2	2	
W-S-LT	71	SW5	69	68	66	65	64	64	2	3	4	5	6	7	
W-S-6	65	EB 4 EOS	65	65	65	65	65	--	0	0	0	0	0	--	
W-S-7	62	EB 4 EOS	62	62	62	62	62	--	0	0	0	0	0	--	
W-S-8	67	EB 4 EOS	67	66	65	64	64	--	0	1	2	3	4	--	
W-S-9	60	EB 4 EOS	58	58	57	57	57	--	2	2	2	3	3	--	
W-S-10	60	EB 4 EOS	59	59	59	59	59	--	1	1	1	2	2	--	
W-S-M1	69	SW5	67	66	65	64	63	--	2	3	4	5	6	--	
W-S-M2	71	SW5	71	70	69	68	66	66	0	0	2	3	4	5	
W-S-M3	67	SW5	67	67	66	65	64	63	0	0	1	2	3	4	
W-S-M4	62	SW5	61	60	59	58	57	57	1	1	2	3	4	5	
W-S-M5	59	EB 4 EOS	59	59	59	59	59	--	0	0	0	0	0	--	
W-S-M6	63	EB 4 EOS	63	63	63	63	63	--	0	0	0	0	0	--	
W-S-M7	58	EB 4 EOS	58	58	58	58	58	--	0	0	0	0	0	--	
W-S-M8	55	EB 4 EOS	55	55	55	55	55	--	0	0	0	0	0	--	
W-S-M9	62	EB 4 EOS	61	60	60	59	58	--	1	2	2	3	4	--	
W-S-M10	64	EB 4 EOS	63	63	62	61	61	--	1	2	2	3	3	--	
W-S-M11	60	EB 4 EOS	60	59	59	59	59	--	0	1	1	1	2	--	
W-S-M12	66	EB 4 EOS	66	66	66	65	64	--	0	0	1	1	2	--	
West Leg WB Route 4															
W-N-LT	69	SW6	67	66	65	65	64	--	2	3	3	4	5	--	
W-N-1	63	SW6	62	62	60	59	59	--	1	1	2	3	4	--	
W-N-2	70	SW6	70	69	69	68	67	--	0	1	2	2	3	--	
W-N-3	66	WB 4 EOS	65	65	64	63	62	--	0	1	1	2	3	--	
W-N-4	69	WB 4 EOS	68	67	67	66	65	--	1	2	2	3	4	--	
W-N-5	65	--	65	65	65	65	65	--	0	0	0	0	0	--	
W-N-6	63	--	63	63	63	63	63	--	0	0	0	0	0	--	
W-N-7	62	--	62	62	62	62	62	--	0	0	0	0	0	--	
W-N-M1	62	SW6					61	--	--	--	--	--	1	--	
W-N-M2	63	SW6	63	62	61	60	59	--	0	1	2	3	4	--	
W-N-M3	64	WB 4 EOS	64	64	63	62	61	--	0	1	1	2	3	--	
W-N-M4	60	SW6	--	--	--	--	60	--	--	--	--	--	0	--	
W-N-M5	66	SW6	--	--	--	--	63	--	--	--	--	--	3	--	
W-N-M6	65	SW6	--	--	--	--	61	--	--	--	--	--	4	--	
W-N-M7	69	SW6	--	--	--	--	64	--	--	--	--	--	5	--	
W-N-M8	65	SW6	--	--	--	--	62	--	--	--	--	--	3	--	

Notes: Noise barriers should not exceed 4.3 m in height when located 4.5 m or less from the edge of the traveled way, and should not exceed 5.0 m in height above the ground line when located more than 4.5 from the traveled way.

TABLE F-4

Noise Modeling Results with Barriers in Place (Phases 3, 4, and 5)

Location	Project Worst Hour Leq (hr)	Noise Barrier ID or Location	Predicted Noise Levels (dBA)						Noise Increase in dBA					
			1.8 m Barrier	2.4 m Barrier	3.0 m Barrier	3.6 m Barrier	4.2 m Barrier	4.8 m Barrier	1.8 m Barrier	2.4 m Barrier	3.0 m Barrier	3.6 m Barrier	4.2 m Barrier	4.8 m Barrier
North Leg SB I-680 n/o SR 4														
N-W-M3	67	SW2	67	67	67	67	67	--	0	0	0	0	0	--
N-W-M5	70	SW2	66	64	63	62	61	--	4	6	7	8	9	--
N-W-M6	69	SW2	66	64	63	62	61	--	3	5	6	7	8	--
N-W-M7	70	SW2	66	65	64	63	61	--	3	5	6	7	8	--
N-W-LT	71	SW2	67	66	65	64	62	--	4	6	7	8	9	--
N-W-5	69	SW2	66	65	64	63	61	--	3	4	5	6	8	--
North Leg NB I-680 n/o SR 4														
N-E-1	71	SW3	69	68	66	65	64	--	2	3	4	6	7	--
N-E-LT	69	SW3	68	66	64	63	62	--	1	3	5	6	7	--
N-E-2	69	SW3	67	66	65	63	62	--	2	3	4	6	7	--
N-E-3	68	SW3	66	65	63	62	61	--	2	3	5	6	7	--
N-E-4	71	SW3	66	65	64	63	62	--	5	6	7	8	9	--
N-E-M1	66	SW3	66	65	65	65	64	--	0	0	1	1	2	--
N-E-M2	67	SW3	66	66	65	64	63	--	1	1	2	3	4	--
N-E-M3	72	SW3	68	66	65	64	63	--	5	7	8	9	10	--
North Leg SB I-680 n/o SR 4														
N-W-3	66	SW4 A	64	63	61	60	59	--	2	3	4	6	7	--
N-W-4	65	SW4 A	63	62	61	59	58	--	1	3	4	5	6	--
N-W-M1	71	SW4 A	70	69	68	67	66	--	1	2	3	4	5	--
N-W-M2	68	SW4 A	67	66	65	63	62	--	1	2	3	5	6	--
N-W-M1A	70	SW4 B	68	66	65	64	63	--	3	4	6	7	8	--
N-W-1	63	SW4 B	63	63	62	62	61	--	0	1	1	2	2	--
N-W-2	69	SW4 B	67	66	65	64	63	--	2	3	4	6	6	--

Notes: Noise barriers should not exceed 4.3 m in height when located 4.5 m or less from the edge of the traveled way, and should not exceed 5.0 m in height above the ground line when located more than 4.5 from the traveled way.

TABLE F-4

Noise Modeling Results with Barriers in Place (Phases 3, 4, and 5)

Location	Project Worst Hour Leq (hr)	Noise Barrier ID or Location	Predicted Noise Levels (dBA)							Noise Increase in dBA					
			1.8 m Barrier	2.4 m Barrier	3.0 m Barrier	3.6 m Barrier	4.2 m Barrier	4.8 m Barrier	1.8 m Barrier	2.4 m Barrier	3.0 m Barrier	3.6 m Barrier	4.2 m Barrier	4.8 m Barrier	
East Leg EB Route 4 e/o I-680															
SW7 - Option 1 - SB680-EB4 CONNECTOR EOS SW															
E-S-1	67	SW7 O1	66	65	65	65	64	--	1	1	2	2	3	--	
E-S-2	69	SW7 O1	67	67	66	66	66	--	1	2	3	3	3	--	
E-S-3	68	SW7 O1	67	66	65	64	63	--	1	2	3	4	4	--	
E-S-4	72	SW7 O1	69	68	67	66	64	--	3	4	5	6	7	--	
E-S-M1	70	SW7 O1	67	67	66	65	64	--	2	3	4	5	6	--	
E-S-M2	66	SW7 O1	65	65	64	63	63	--	1	2	2	3	4	--	
SW7 - Option 2 - EB4 MAINLINE EOS SW + SB680-EB4 CONNECTOR EOS SW															
E-S-1	67	SW7 O2	--	--	--	--	63	--	--	--	--	--	4	--	
E-S-2	69	SW7 O2	--	--	--	--	64	--	--	--	--	--	5	--	
E-S-3	68	SW7 O2	--	--	--	63	63	--	--	--	--	5	5	--	
E-S-4	72	SW7 O2	--	--	66	65	64	--	--	--	6	7	8	--	
E-S-M1	70	SW7 O2	--	--	--	65	64	--	--	--	--	5	6	--	
E-S-M2	66	SW7 O2	--	--	--	--	62	--	--	--	--	--	4	--	
SW7 - Option 3 - ROW SW															
E-S-1	67	SW7 O3	67	67	66	65	64	--	0	0	0	1	2	3	
E-S-2	69	SW7 O3	68	67	65	63	62	--	0	1	2	4	6	7	
E-S-3	68	SW7 O3	68	68	67	67	66	--	0	0	0	1	1	2	
E-S-4	72	SW7 O3	70	69	69	68	67	--	2	2	3	4	5	5	
E-S-M1	70	SW7 O3	69	68	67	65	64	--	0	0	1	3	4	6	
E-S-M2	66	SW7 O3	66	66	66	66	65	--	0	0	0	0	1	1	
East Leg EB Route 4 e/o I-680															
E-S-5	66	SW8	65	64	62	61	60	--	1	2	3	5	6	--	
E-S-6	69	SW8	66	66	65	64	63	--	2	3	4	5	5	--	
E-S-6A	64	SW8	63	62	61	60	59	--	1	1	3	4	5	--	
E-S-6B	61	SW8	60	60	59	58	58	--	0	1	1	2	3	--	
E-S-M3	66	SW8	65	64	63	61	60	--	1	2	3	5	6	--	
E-S-M4	63	SW8	63	62	61	60	59	--	1	1	2	3	4	--	
E-S-7	65	--	65	65	65	65	65	--	0	0	0	0	0	--	
East Leg EB Route 4 e/o I-680															
E-S-LT1	71	SW9	69	68	67	66	65	--	1	2	3	5	6	--	
E-S-8	69	SW9	69	68	68	66	65	--	0	1	2	3	4	--	
E-S-8A	72	SW9	71	70	69	67	66	--	1	2	3	4	6	--	
E-S-M5	70	SW9	69	69	68	68	67	--	1	1	2	2	3	--	
E-S-M6	70	SW9	70	69	68	67	66	--	1	1	3	4	5	--	

Notes: Noise barriers should not exceed 4.3 m in height when located 4.5 m or less from the edge of the traveled way, and should not exceed 5.0 m in height above the ground line when located more than 4.5 from the traveled way.

TABLE F-4

Noise Modeling Results with Barriers in Place (Phases 3, 4, and 5)

Location	Project Worst Hour Leq (hr)	Noise Barrier ID or Location	Predicted Noise Levels (dBA)							Noise Increase in dBA					
			1.8 m	2.4 m	3.0 m	3.6 m	4.2 m	4.8 m	1.8 m	2.4 m	3.0 m	3.6 m	4.2 m	4.8 m	
			Barrier	Barrier	Barrier	Barrier	Barrier	Barrier	Barrier	Barrier	Barrier	Barrier	Barrier	Barrier	Barrier
East Leg	EB Route 4 e/o Route 242														
E-S-9	--	SW10 ?	--	--	--	--	--	--	--	--	--	--	--	--	--
E-S-10	--	SW10 ?	--	--	--	--	--	--	--	--	--	--	--	--	--
E-S-11	--	SW10 ?	--	--	--	--	--	--	--	--	--	--	--	--	--
E-S-12	--	SW10 ?	--	--	--	--	--	--	--	--	--	--	--	--	--
E-S-M7	--	SW10 ?	--	--	--	--	--	--	--	--	--	--	--	--	--
E-S-M8	--	SW10 ?	--	--	--	--	--	--	--	--	--	--	--	--	--
E-S-M9	--	SW10 ?	--	--	--	--	--	--	--	--	--	--	--	--	--
E-S-M10	--	SW10 ?	--	--	--	--	--	--	--	--	--	--	--	--	--
E-S-M11	--	SW10 ?	--	--	--	--	--	--	--	--	--	--	--	--	--
E-S-13	--	SW10 ?	--	--	--	--	--	--	--	--	--	--	--	--	--
E-S-14	--	SW10 ?	--	--	--	--	--	--	--	--	--	--	--	--	--
E-S-15	--	SW10 ?	--	--	--	--	--	--	--	--	--	--	--	--	--
E-S2-LT	--	SW10 ?	--	--	--	--	--	--	--	--	--	--	--	--	--
E-S-16	--	SW10 ?	--	--	--	--	--	--	--	--	--	--	--	--	--
E-S-17	--	SW10 ?	--	--	--	--	--	--	--	--	--	--	--	--	--
E-S-18	--	SW10 ?	--	--	--	--	--	--	--	--	--	--	--	--	--
E-S-19	--	SW10 ?	--	--	--	--	--	--	--	--	--	--	--	--	--
E-S-20	--	SW10 ?	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes: Noise barriers should not exceed 4.3 m in height when located 4.5 m or less from the edge of the traveled way, and should not exceed 5.0 m in height above the ground line when located more than 4.5 from the traveled way.

Appendix G Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

ARNOLD SCHWARZENEGGER, Governor

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*Flex your power!
Be energy efficient!*

January 14, 2005

TITLE VI POLICY STATEMENT

The California Department of Transportation under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, and age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.


WILL KEMPTON
Director

