

CHAPTER FOUR

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) EVALUATION

In July 2006, both the Citizens Advisory Committee (CAC) and the Doyle Drive Executive Committee recommended a Preferred Alternative. The Preferred Alternative consists of a refined Presidio Parkway Alternative with the Modified Hook Ramp Option at the Park Presidio Interchange and the Diamond Interchange Option for the east end of the project alignment. The Preferred Alternative resulted from several design refinements made to the Presidio Parkway Alternative (Alternative 5) to reduce construction costs and address various environmental concerns. Additional environmental analysis was conducted on the slight modifications and shared with the responsible agencies. Ultimately, no additional environmental impacts would result from the Preferred Alternative. This chapter describes those potential environmental effects for all alternatives, including the Preferred Alternative, identified in Chapter 3 that would be considered significant under the *California Environmental Quality Act* (CEQA).

This combined *Final Environmental Impact Statement/Report* (FEIS/R) has been prepared in accordance with CEQA and the *National Environmental Policy Act* (NEPA). While CEQA requires that identification of the level of significance for each impact be stated in an *Environmental Impact Report* (EIR), NEPA regulations do not require such a discussion. Because of this difference, the CEQA significance criteria and the determination of significant impacts have not been included in other sections of this combined NEPA/CEQA EIS/R. These criteria and determinations are identified and described in this chapter.

4.1 Determining Significance under CEQA

The *CEQA Guidelines* (§15000, et seq., California Code of Regulations, 2001) define a “significant effect” as:

“... a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant” (CEQA Guidelines §15382, 2001).

The *CEQA Guidelines* further state that “An ironclad definition of significant effect is not possible because the significance of an activity may vary with the setting. For example, an activity which may not be significant in an urban area

may be significant in a rural area” (*CEQA Guidelines* §15064, 2001). Appendix G of the *CEQA Guidelines* describes impacts that the California Resources Agency has determined are normally considered significant. These guidelines require that physical changes in the environment be evaluated based on factual evidence, reasonable assumptions supported by facts, and expert opinion based on fact.

4.1.1 Significance Criteria

Analysis of each project alternative was conducted to determine if there would be an impact to a particular environmental resource. This review included a determination of whether an impact occurring from the implementation of an alternative would be rated as “significant” under CEQA. **Exhibit 4-1**, on the following two pages, summarizes the significance of temporary, long-term, and cumulative environmental impacts of the Doyle Drive Project alternatives under CEQA. Levels of significance stating “less than significant with mitigation incorporated” are based on the application of successful mitigation measures, meaning the impact would not be diminished until mitigation successfully accomplishes the desired goals.

Chapter 3 of this document provides a detailed discussion of the impacts for each resource category. Significant impacts were not identified for the No-Build Alternative which is used as the baseline for comparison with other alternatives.

4.2 Potentially Significant Impacts

This section discusses the resources which will experience significant impacts as a result of the Doyle Drive Project.

4.2.1 Cultural Resources

As outlined in Appendix G of the *CEQA Guidelines*, would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Significant cultural resources for the purposes of CEQA are those resources that are eligible for or are listed in the *California Register of Historical Resources* (CRHR). All resources that have been determined eligible for or are listed in the *National Register of Historic Places* (NRHP) are automatically eligible for the CRHR and as such, are considered historical resources for the purposes of CEQA. In addition, cultural resources included in local registers of historical resources, as defined in *Public Resource Code* (PRC) 5020.1(k) or 5024.1(g), are also considered to be historical resources for the purposes of CEQA. CEQA states that “a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.”

**Exhibit 4-1
Determination of the Level of Significance for Environmental Impacts of the Doyle Drive Project under CEQA**

ENVIRONMENTAL ISSUE	PERMANENT IMPACTS		TEMPORARY IMPACTS		CUMULATIVE IMPACTS	
	REPLACE AND WIDEN	PRESIDIO PARKWAY & PREFERRED ALT	REPLACE AND WIDEN	PRESIDIO PARKWAY & PREFERRED ALT	REPLACE AND WIDEN	PRESIDIO PARKWAY & PREFERRED ALT
GEOLOGY AND SOILS: SEISMIC	Significant; less than significant with mitigation incorporated	Significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Less than Significant	Less than Significant
GEOLOGY AND SOILS: SERPENTINITE	Less than Significant	Significant Unavoidable	Less than Significant	Significant Unavoidable	Less than Significant	Significant Unavoidable
HYDROLOGY, WATER QUALITY, STORM RUNOFF	Less than Significant	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated
HAZARDOUS WASTE	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated
AIR QUALITY	Less than Significant	Less than Significant	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Less than Significant	Less than Significant
NOISE AND VIBRATION	Less than Significant	Less than Significant	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Less than Significant	Less than Significant
ENERGY	Less than Significant	Less than Significant	Less than significant	Less than significant	Less than Significant	Less than Significant
WETLANDS	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated

Exhibit 4-1
Determination of the Level of Significance for Environmental Impacts of the Doyle Drive Project under CEQA — Continued

ENVIRONMENTAL ISSUE	PERMANENT IMPACTS		TEMPORARY IMPACTS		CUMULATIVE IMPACTS	
	REPLACE AND WIDEN	PRESIDIO PARKWAY & PREFERRED ALT	REPLACE AND WIDEN	PRESIDIO PARKWAY & PREFERRED ALT	REPLACE AND WIDEN	PRESIDIO PARKWAY & PREFERRED ALT
VEGETATION	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated
WILDLIFE	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated	Significant; less than significant with mitigation incorporated
PARKS, RECREATION AREAS	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
LAND USE, PLANNING AND GROWTH	Significant Unavoidable	Significant Unavoidable	Less than Significant	Less than Significant	Less than Significant	Less than Significant
COMMUNITY IMPACTS (SOCIAL, ECONOMIC) AND ENVIRONMENTAL JUSTICE	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
UTILITIES AND EMERGENCY SERVICE	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
TRAFFIC/TRANSPORTATION/ PEDESTRIAN AND BICYCLE FACILITIES	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
VISUAL/AESTHETICS	Significant Unavoidable	Less than Significant	Significant Unavoidable	Significant Unavoidable	Significant Unavoidable	Less than Significant
HISTORIC RESOURCES	Significant Unavoidable	Significant Unavoidable	Significant Unavoidable	Significant Unavoidable	Significant Unavoidable	Significant Unavoidable
ARCHAEOLOGICAL RESOURCES	Less than Significant	Significant Unavoidable	Less than Significant	Less than Significant	Less than Significant	Less than Significant

The significance of a historical resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that conveys its historical significance and justifies its inclusion in, or eligibility for, the CRHR. Essentially, this means that if a project demolishes an entire historical resource, or alters it adversely so that it would no longer be eligible for the *California Register* or be considered to be a historical resource, the project would have a substantial adverse change to that resource. However, after project construction, if the resource would still possess historical significance such that it would still be eligible, there would be no substantial adverse change.

The following analyzes the impacts of the Doyle Drive Project on six properties considered historical resources for the purposes of CEQA. These include the Presidio National Historic Landmark District (NHLD), the Golden Gate Bridge to which Doyle Drive is a contributor, the Doyle Drive Marina and Presidio Viaducts (individually NRHP eligible and historical resources under CEQA), archaeological site CA-SFR-6/26, and the Palace of Fine Arts.

The Replace and Widen Alternative would impact the Presidio NHLD through the removal and replacement of Doyle Drive, which is a contributing element of the Presidio NHLD. The Replace and Widen Alternative, No-Detour Option would impact the Presidio NHLD through the alteration of the following contributing elements: Battery Blaney Road, Veterans Boulevard (Highway 1), Lincoln Boulevard, and Crissy Field Avenue. In addition, there would be impacts to the cultural landscape of the Presidio NHLD due to the alteration or removal of existing cultural landscape features and the addition of new non-historic features into the cultural landscape.

The With Detour Option would additionally impact the Presidio NHLD through the removal of Buildings 1182, 1183, 1184, and 1185 (four of the seven Mason Street warehouses), which are contributing elements of the district. These impacts would not result in a substantial adverse change in the NHLD because it will still retain sufficient integrity to convey its historical significance and would remain eligible for the *California Register* and be considered an historical resource under CEQA.

The Replace and Widen Alternative, both With Detour and No-Detour Options, would cause an impact to the Golden Gate Bridge through the destruction of Doyle Drive, which is also eligible for the NRHP as a contributor to the Golden Gate Bridge. This alternative would also cause indirect impacts to the Golden Gate Bridge by introducing new visual elements in place of existing contributing elements. These impacts would not result in a substantial adverse change in the Golden Gate Bridge because it will still retain sufficient integrity to convey its historical significance and would remain eligible for the *California Register* and be considered an historical resource under CEQA.

The Replace and Widen Alternative, both With Detour and No-Detour Options, would cause a substantial adverse change to the Marina and Presidio Viaducts of

Doyle Drive (determined individually NRHP eligible and are historical resources under CEQA) because they would be demolished.

The Replace and Widen Alternative, both With Detour and No-Detour Options, would not result in substantial adverse change to the Palace of Fine Arts, nor would archaeological site, CA-SFR-6/26, experience substantial adverse change because the area will be designated as an Environmentally Sensitive Area (ESA) and protected during construction.

The Presidio Parkway and Preferred Alternatives will impact the Presidio NHLD through the destruction of the following contributing elements of the Presidio NHLD: Doyle Drive (including the high-viaduct and low-viaduct), Building 201, Building 204, Building 230, Building 670, and Building 1151 (under the Presidio Parkway Alternative, Circle Drive Option only), as well as Bank Street, Veterans Boulevard (Highway 1), Battery Blaney Road, Crissy Field Avenue, Cowles Street (under the Presidio Parkway Alternative, Hook Ramp Option and Preferred Alternative only), Girard Road, Gorgas Avenue, Halleck Street, Marshall Street, and Lincoln Boulevard.

Under the Preferred Alternative, Buildings 230 and 670 will be demolished to make way for the parkway. The top story of Building 201 will be removed, stored during construction of the project, and then relocated and restored at its original Halleck Street location. Building 204, which had been previously moved to its current location and a portion of the building removed when Doyle Drive was originally built, will also be removed with useable building components salvaged. Building 228 will be affected by the raising of the west end of Halleck Street. The raising of Halleck Street in order to cross over a tunnel segment of Doyle Drive will have an effect on the setting of Building 228 and the Halleck Street area. A final decision as to the treatment of buildings will be determined prior to the completion of the *Programmatic Agreement* (PA).

In addition, both the Presidio Parkway and Preferred Alternatives will cause indirect impacts to the Presidio NHLD by introducing visual elements that will diminish the integrity of the linkage and physical plan of the district, i.e., the cultural landscape. These impacts will not result in a substantial adverse change in the NHLD because it will still retain sufficient integrity to convey its historical significance and will remain eligible for the *California Register* and be considered an historical resource under CEQA.

The Presidio Parkway and Preferred Alternatives will cause a direct impact to the Golden Gate Bridge through the destruction of Doyle Drive, which is a contributing element of the bridge property. These alternatives will also cause an indirect impact to the Golden Gate Bridge because it will introduce new visual elements in place of existing contributing elements of the bridge.

These impacts will not result in a substantial adverse change in the Golden Gate Bridge because it will still retain sufficient integrity to convey its historical significance and will remain eligible for the *California Register* and be considered an historical resource under CEQA.

Both the Presidio Parkway and Preferred Alternatives would cause a substantial adverse change to the Marina and Presidio Viaducts of Doyle Drive (determined individually NRHP eligible and are historical resources under CEQA) because the viaducts will be demolished.

Based on available information, the Presidio Parkway and Preferred Alternatives will not have an impact on the Palace of Fine Arts property; however, there are concerns about possible vibration impacts to the buildings and the lagoon. Although the project meets standards for acceptable vibration levels in proximity of fragile historic structures, additional vibration testing and the preparation of a *Historic Structures Report* for the Palace of Fine Arts will be implemented to ensure that the property will not be damaged during construction of the roadway.

The archaeological site, CA-SFR-6/26, will not experience substantial adverse change because the area will be designated as an environmentally sensitive area and protected during construction. Because the large underground parking facility has been eliminated from the Preferred Alternative, potential impacts to unknown archaeological sites will be less than those identified for the Presidio Parkway Alternative in the DEIS/R. If prehistoric or historic period archaeological sites are identified prior to or during construction, then the construction of any build alternative may cause substantial adverse change to the significance of these resources.

This project also requires compliance with *PRC 5024* which requires state agencies to formulate policies to preserve and maintain, when prudent, all state-owned historical resources under its jurisdiction, to give a notice and a summary of the proposed project's effects on state-owned historic properties to the State Historic Preservation Officer (SHPO) for review and comment, and adopt prudent and feasible measures that will eliminate or mitigate the adverse effects. Doyle Drive is a state-owned facility. Caltrans will consult with the SHPO in compliance with *PRC 5024* concurrently with its *Section 106* consultation.

The impacts associated with the Replace and Widen, Presidio Parkway and Preferred Alternatives will result in **unavoidable significant impacts** under CEQA since all build alternatives would require the demolition of the historic Marina and Presidio Viaducts of Doyle Drive. Other historic resources such as the Golden Gate Bridge, Presidio NHLD and Palace of Fine Arts will not be adversely impacted and will remain eligible for the *California Register* and be considered an historical resource under CEQA. In addition, none of the build alternatives will impact archaeological site CA-SFR-6/26.

4.2.2 Visual

As outlined in Appendix G of the *CEQA Guidelines*, would the project have a substantial adverse effect on a scenic vista?

Within and around the project area, views of the Golden Gate Bridge, Marina headlands and the bay are accessible, particularly from areas within the Presidio. The existing Doyle Drive facility consists of high- and low-viaducts that currently

obstruct some views of these scenic resources. Under the Replace and Widen Alternative, No-Detour Option the low-viaduct would be raised approximately two meters (six feet), with an almost doubling of the width of the roadway which would result in an **unavoidable significant impact** under CEQA (increased view blockage and visual dominance) primarily when viewed from the Main Post area.

4.2.3 Soils and Geology: Serpentinite

As outlined in Appendix G of the *CEQA Guidelines*, would the project result in the loss of availability of locally-important mineral resource delineated on a local general plan, specific plan or other land use plan?

Construction of the Presidio Parkway and Preferred Alternatives will result in removal of a portion of the geologic materials in the bluff area (Serpentinite) that comprise a designated resource as defined in the *Presidio Trust Management Plan* (PTMP). In accordance with the criteria established in the PTMP, the removal of these materials is considered an **unavoidable significant impact** under CEQA.

4.2.4 Land Use and Planning

As outlined in Appendix G of the *CEQA Guidelines*, would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect?

All project alternatives will conflict with various aspects of the plans analyzed as part of the project. Specifically, the No-Build Alternative would conflict with elements of the *General Management Plan Amendment* (GMPA), *Presidio Trust Management Plan* (PTMP), *San Francisco General Plan*, and *San Francisco Bay Plan*. The Replace and Widen Alternative would conflict with elements of the GMPA, PTMP, *Vegetation Management Plan* (VMP), and *San Francisco General Plan* while the Presidio Parkway and Preferred Alternatives would conflict with various aspects of the PTMP, VMP, and *San Francisco General Plan*. The conflicts between the alternatives and various planning documents are considered **unavoidable significant impacts** under CEQA.

4.3 Impacts Mitigated to Less than Significant

This section discusses the resources which will experience less than significant impacts as a result of the Doyle Drive Project.

4.3.1 Air Quality

As outlined in Appendix G of the *CEQA Guidelines*, would the project expose sensitive receptors to substantial pollutant concentrations?

Construction activities associated with any build alternative will generate emissions of criteria pollutants over the construction period including suspended and inhalable particulate matter and equipment exhaust emissions. These construction-related emissions will be limited to the construction period but will still cause adverse effects on local air quality during this duration. Incorporation of appropriate mitigation measures will reduce the impacts to a ***less than significant*** level under CEQA.

4.3.2 Biological Resources

For the purpose of this discussion, biological resources include wetlands; candidate, sensitive, or special status species; riparian habitat and other natural communities; and native resident or migratory fish or wildlife.

Wetlands

As outlined in Appendix G of the *CEQA Guidelines*, would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the *Clean Water Act*?

Construction of all build alternatives will permanently remove or temporarily disturb the same amount of Army Corps of Engineers (ACOE) jurisdictional waters of the U.S.: 0.13 hectares or 0.33 acres of permanent impact at wetlands W-2 and W-3, and 0.03 hectares (0.08 acres) of waters temporarily disturbed at Tennessee Hollow and Battery Howe-Wagner.

Each build alternative will also temporarily and permanently affect wetlands protected under *Executive Order 11990* as defined by U.S. Fish and Wildlife Service Cowardin classification system. These impacts would range from a low of 0.01 hectares (0.02 acres) of wetlands temporarily affected by the Replace and Widen Alternative, With Detour Option to a high of 0.08 hectares (0.19 acres) of wetlands permanently removed by the Presidio Parkway and Preferred Alternatives. Through implementation of appropriate mitigation these impacts will be reduced to a ***less than significant*** level under CEQA. (See Avoidance, Minimization, and/or Mitigation Measures in Section 3.4.2 for more information on the mitigation measures to address impacts to wetland resources.)

Areas that are apparently fed by upgradient groundwater flow support wetland communities (i.e., central coast arroyo willow and California blackberry) on the northern bluff face. Construction of the tunnel section of the Presidio Parkway and Preferred Alternatives may potentially result in an indirect impact, disrupting the flow of groundwater in the fractures and potentially increasing or decreasing the flow rate and/or volume of groundwater flow that supports the wetland vegetation growth. If major changes in the character of these areas occurred, these in turn could affect plant communities, and subsequently wildlife habitat on the bluff. Any consideration of the severity of the impact needs to be measured by the magnitude and duration of change. Although mitigation will be incorporated to reduce the impact to ***less than significant*** levels under CEQA,

the impact may be potentially significant depending on the magnitude and duration of change following incorporation of mitigation measures.

There will be no permanent wetland impacts on Tennessee Hollow in its existing condition due to the project build alternatives. However, the existing Tennessee Hollow may be temporarily affected (0.06 hectares [0.15 acres]) if the flow is redirected, the piping is modified, or if discharge enters the stream. Incorporation of appropriate mitigation measures will reduce the impacts to a ***less than significant*** level under CEQA.

Candidate, Sensitive, or Special Status Species

As outlined in Appendix G of the *CEQA Guidelines*, would the project 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?

There will be temporary effects on common vegetation, especially non-native vegetation, due to construction-related activities under the build alternatives. The National Park Service (NPS) and the Presidio Trust consider all native plant communities that are biologically intact and diverse as important (sensitive) natural communities (NPS, 1999a). Construction of the build alternatives may potentially result in some level of temporary disturbances on important plant communities due to possible soil runoff during the rainy season, dust during demolition activities, and other normal construction activities. Mitigation measures will reduce the impacts to a ***less than significant*** level under CEQA.

Construction of all build alternatives may indirectly affect federal special concern plant species in the project study area near the construction corridor. All of the build alternatives may result in direct removal or disturbance to skunkweed, a federal species of local concern, and San Francisco gumplant, a federal species of concern. Both species have been found within the project construction corridor. Incorporation of mitigation measures will reduce the impacts to a ***less than significant*** level.

Riparian Habitat and Other Natural Communities

As outlined in Appendix G of the *CEQA Guidelines*, would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Construction of the build alternatives will result in permanent and temporary effects on important natural upland communities; these are northern coastal scrub on sandy soil, and northern coastal scrub on sandy soil with serpentine inclusions. The permanent impacts on both these vegetation types are relatively minor, although they will be greatest with the Presidio Parkway and Preferred Alternatives. The Replace and Widen Alternative, With Detour Option would take a total of 0.36 hectares (0.90 acres) while the No-Detour Option would take

0.37 hectares (0.93 acres) for permanent impacts to these two types of northern coastal scrub communities; the Presidio Parkway Alternative could affect between 0.40 hectares (0.99 acres) and 0.57 hectares (1.41 acres) of the two types of northern coastal scrub communities depending on design option. The Merchant Road Slip Ramp would disturb an additional 0.10 hectares (0.44 acres) of northern coastal scrub on sandy soil with serpentine inclusions. Total impacts to the two types of northern coastal scrub communities from the Preferred Alternative will be 0.40 hectares (0.99 acres). Temporary impacts for all alternatives on northern coastal scrub will be minimal, ranging from 0.01 hectares (0.02 acres) for the Presidio Parkway and Preferred Alternatives to 0.04 hectares (0.11 acres) for the Replace and Widen Alternative. Impacts to northern coastal scrub with serpentine inclusions show greater variation, ranging from 0.06 hectares (0.16 acres) for the Replace and Widen Alternative to 0.17 hectares (0.43 acres) and to 0.35 hectares (0.87 acres) for the Presidio Parkway and Preferred Alternatives. Incorporation of mitigation measures will reduce the impacts to a *less than significant* level under CEQA.

Native Resident or Migratory Fish or Wildlife

As outlined in Appendix G of the *CEQA Guidelines*, would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors?

Construction of all the build alternatives may potentially result in the disturbance to tree lupine moth (*Grapholita edwardsiana*), and nesting special status raptors and other bird species (including California yellow warbler [*Dendroica petechia brewsteri*]) that are protected by *California Fish and Game Code 3503* and *3503.5*, and the *Migratory Bird Treaty Act* (MBTA). Additionally, construction of all build alternatives may temporarily disrupt a primary segment of the urban wildlife movement corridor, which may result in disturbance to, or direct mortality of, common wildlife species. Impacts on tree lupine moth, common wildlife, and wildlife movement corridor are locally adverse, but considered minor. Potential impacts on nesting birds may be considered adverse if construction occurs in the proximity of nesting birds. Incorporation of mitigation measures would reduce the impacts to a *less than significant* level.

4.3.3 Hydrology

For the purpose of this discussion, hydrology includes water quality and flooding.

Water Quality

As outlined in Appendix G of the *CEQA Guidelines*, would the project violate any water quality standards or waste discharge requirements or would the project 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?

There is the potential that the discharge of dewatering effluent or runoff from any of the proposed alternatives (either during the construction or operation periods) including sediment and/or urban pollutants above allowable regulated thresholds may affect receiving waters. Following proper handling procedures and mitigation measures will reduce the impact to a *less than significant* level under CEQA.

Flooding

As outlined in Appendix G of the *CEQA Guidelines*, would the project expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?

The potential for flooding by tsunami wave run-up and/or extreme high tides may be expected for any roadway or tunnel below 3.2 meters (10.5 feet) North American Vertical Datum (NAVD). Topographic data show the existing surface elevations in the vicinity of the Main Post to be near or below an elevation of 3.35 meters (11 feet) NAVD. Both the Presidio Parkway and Preferred Alternatives will place roadways at or near grade in this area, and therefore, will be susceptible to inundation. Proper design and flood protection for the low portions of the roadway will reduce the impact to a *less than significant* level under CEQA.

4.3.4 Hazardous Waste

As outlined in Appendix G of the *CEQA Guidelines*, would the project 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?

In addition to the known hazardous material sites, based on past uses of the Presidio it is likely that there may be unidentified subsurface contamination from hazardous materials present in the study area that could be encountered during construction activities. Potential impacts are associated with the exposure of construction workers to hazardous materials present in soils and groundwater; exposure to lead and asbestos in building materials; and exposure to naturally-occurring asbestos in bedrock. Implementation of appropriate mitigation measures will reduce the potential impacts to a *less than significant* level under CEQA.

4.3.5 Noise and Vibration

For the purpose of this discussion, noise includes temporary or periodic noise; ground-borne noise and vibration; and excess noise levels.

Temporary or Periodic Noise

As outlined in Appendix G of the *CEQA Guidelines*, would the project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels?

Temporary noise impacts will occur during construction. The specific construction equipment being used, the construction phase, and the location of construction activity all affect the level and duration of temporary noise impacts. All build alternatives will cause temporary impacts. Occurring over a construction period of four to five years, construction noise will be intermittent, and the level will vary depending on the type, location, and length of the activity. Generally, noise will range from the mid to the upper 80s dBA at receptors within 30 meters (100 feet) of the project construction limits. Construction equipment will operate in a limited area then move along the alignment until the completion of the phase. Temporary noise will affect noise-sensitive areas, including residences along Richardson Avenue and Marina Boulevard, Crissy Field Marsh and the Crissy Field Center. With incorporation of appropriate construction mitigation measures, the temporary construction noise impacts will be reduced to a *less than significant* level under CEQA.

Ground-Borne Noise and Vibration

As outlined in Appendix G of the *CEQA Guidelines*, would the project result in the exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?

The equipment used to construct the build alternatives will cause temporary vibration impacts in the project area. Among the build alternatives, the Presidio Parkway and Preferred Alternatives will have the greatest increase on vibration levels felt in the areas south of Doyle Drive, such as the Main Post, because they shift the road alignment towards the south, and require more work on roads other than Doyle Drive in the study area, particularly near the east end of the project. Nonetheless, with incorporation of appropriate vibration management measures, the risk of structural damage to the historical buildings will be reduced to a *less than significant* level.

Excess Noise Levels

As outlined in Appendix G of the *CEQA Guidelines*, would the project result in the 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?

Noise analysis indicated that noise generated by vehicle traffic would exceed the Federal Highway Administration (FHWA) *Noise Abatement Criterion* (NAC) at thirty-seven receptor locations under one or more of the future modeled conditions resulting in noise impacts to these receptors. With the incorporation of appropriate mitigation, the exposure of persons to noise levels in excess of the FHWA NAC will be *less than significant* under CEQA.

4.3.6 Visual/Aesthetics

As outlined in Appendix G of the *CEQA Guidelines*, would the project substantially degrade the existing visual character or quality of the site and its surroundings?

During the four to five year construction period, all build alternatives will result in a substantial change in the visual character of the study area. All build alternatives will require the removal of substantial amounts of existing landscaping and vegetation during construction, resulting in a substantial negative visual impact. The Replace and Widen Alternative, With Detour Option would also require the construction of a detour road and structure north of the existing Doyle Drive alignment to re-route traffic around construction areas. The temporary visual impacts can be reduced to a *less than significant* level under CEQA with the incorporation of mitigation.

4.3.7 Geology and Soils: Seismic

As outlined in Appendix G of the *CEQA Guidelines*, would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving strong seismic ground shaking or seismic-related ground failure, including liquefaction? Or would the project 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?

All alternatives will be susceptible to strong seismic ground shaking and the potential for seismic-related ground failure. Additionally, each alternative is located in an area that is susceptible to liquefaction. Design features associated with all build alternatives will minimize the impacts to a *less than significant* level under CEQA.

4.4 No Impacts

The Doyle Drive Project will have no significant impacts under CEQA to the areas of farmland, population and housing, public services, recreation, and utility and service systems. Through implementation of the *Transportation Management Plan* prepared as part of this project, there will be no significant transportation/traffic related impacts.

4.4.1 Climate Change

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas¹ (GHG) emissions reduction and climate change research and

¹ Greenhouse gases related to human activity include: Carbon dioxide, Methane, Nitrous oxide, Tetrafluoromethane, Hexafluoroethane, Sulfur hexafluoride, HFC-23, HFC-134a*, and HFC-152a*

policy have increased dramatically in recent years. In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires the Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions; these regulations will apply to automobiles and light trucks beginning with the 2009 model year.

On June 1, 2005, Governor Arnold Schwarzenegger signed *Executive Order S-3-05*. The goal of this Executive Order is to reduce California's GHG emissions to:

- 1) 2000 levels by 2010,
- 2) 1990 levels by the 2020, and
- 3) 80 percent below the 1990 levels by the year 2050.

In 2006, this goal was further reinforced with the passage of *Assembly Bill 32* (AB 32), the *Global Warming Solutions Act of 2006*. AB 32 sets the same overall GHG emissions reduction goals while further mandating that ARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." *Executive Order S-20-06* further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

Climate change and GHG reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing GHG emissions reductions and climate change.

According to a recent white paper by the Association of Environmental Professionals "An individual project does not generate enough greenhouse gas emissions to significantly influence global climate change; therefore, the issue of global climate change is by definition a cumulative impact."²

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, Caltrans has created and is implementing the *Climate Action Program at Caltrans* (December 2006).

One of the main strategies in the Caltrans' *Climate Action Program* to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 mph. Relieving

² Michael Hendrix and Cori Wilson, "Alternative Approaches to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents," Association of Environmental Professionals, April 27, 2007.

congestion by enhancing operations and improving travel times in high congestion travel corridors will lead to an overall reduction in GHG emissions. “

Caltrans recognizes the concern that carbon dioxide emissions raise for climate change. However, modeling and gauging the impacts associated with an increase in GHG emissions levels, including carbon dioxide, at the project level is not currently possible. No federal, state or regional regulatory agency has provided methodology or criteria for GHG emission and climate change impact analysis. Therefore, Caltrans is unable to provide a scientific or regulatory based conclusion regarding whether the project’s contribution to climate change is cumulatively considerable

4.5 Environmentally Superior Alternative

CEQA Guidelines (Section 15126.6(e)(2)) require that an environmentally superior alternative be identified among the alternatives considered. The environmentally superior alternative is generally defined as the alternative which would result in the least adverse environmental impacts to the project site and surrounding area. If the No-Project (No-Build) Alternative is found to be the environmentally superior alternative, the document must identify an environmentally superior alternative among the other alternatives.

The No-Build Alternative would best avoid impacts as compared to the proposed build alternatives; and hence, it is the environmentally superior alternative. Although the No-Build Alternative would not result in any physical impacts to the environment, it would fail to meet the purpose and need of the project. The No-Build Alternative would fail to provide the long-term seismic, structural and traffic benefits associated with replacing Doyle Drive and would therefore not be considered an environmentally superior alternative in the long-term.

Each build alternative meets the purpose of the project and the overall impacts associated with each are similar. The main differences in impacts between the Replace and Widen Alternative, Presidio Parkway Alternative, and Preferred Alternative can be found in the areas of visual resources, vehicular access to the Presidio, roadway runoff and pollutant loading, wetlands, geology and soils, land use, and historic features.

Visually the Presidio Parkway Alternative and Preferred Alternative will provide improved views from within the Presidio, while the Replace and Widen Alternative would continue to obstruct views that are currently blocked by the existing roadway. The Replace and Widen Alternative, No-Detour Option would raise the low-viaduct approximately two meters (six feet) which would increase the view blockage and visual dominance of the structure.

Vehicular access to the Presidio differs for the Replace and Widen Alternative, Presidio Parkway Alternative, and Preferred Alternative. Access for the Replace and Widen Alternative is available from Doyle Drive via the on- and off-ramps

to Merchant Road at the Golden Gate Bridge Toll Plaza and via a right turn from southbound Richardson Avenue to Gorgas Avenue. Under the Replace and Widen Alternative, the existing slip ramp providing access to the Presidio from northbound Richardson Avenue would be removed. Therefore, there would be no Presidio access for northbound traffic at the east end of Doyle Drive due to geometric constraints and concerns for traffic safety.

The Presidio Parkway Alternative offers better access to the Presidio, including two options for direct access to the Presidio and Marina Boulevard at the eastern end of the project (Diamond Option or Circle Drive Option). In addition, the alternative includes an option for providing access to the Presidio via a direct connection from northbound Doyle Drive to Lincoln Avenue which would avoid the Toll Plaza.

Additionally, the Presidio Parkway Alternative would reconfigure Palace Drive so that it directly intersects with Richardson Avenue and operates as a one-way street in the northbound direction. Palace Drive would no longer connect to Lyon Street; rather Lyon Street would become one-way from Richardson Avenue and connect to Bay Street. This redesign would be inconsistent with the proposed entry dropoff/turnarounds at the north and south ends of Palace Drive that are being examined by the city and county of San Francisco Recreation and Parks Department as part of the Palace of Fine Arts rehabilitation efforts.

Similar to the Presidio Parkway Alternative, the Preferred Alternative will provide direct access to the Presidio and indirect access to Marina Boulevard in both directions via access ramps from Doyle Drive connecting to an extension of Girard Road. Palace Drive will not be affected by the Preferred Alternative. It will be maintained as a two-way road and incorporate the modifications proposed by the San Francisco Department of Recreation and Parks for the north and south connections with Lyon Street.

The Presidio Parkway and Preferred Alternatives will result in the reduction of total runoff volume and would also likely result in a reduction of pollutant loading associated with the roadway (relative to the No-Build and Replace and Widen Alternatives since approximately twenty-five percent of the roadway under the Parkway Alternative would be in tunnel segments and therefore not subject to storm water runoff.³)

All build alternatives will result in impacts to both jurisdictional and Cowardian wetlands. The total amount of permanent impacts will be slightly greater under the Presidio Parkway and Preferred Alternatives [0.21 hectares (0.52 acres)] compared to the Replace and Widen Alternative [0.20 hectares (0.50 acres)]. In addition, the construction of the tunnel section of the Presidio Parkway and

³This assumes that any residual water collected within the tunnel during storms or during washdown activities is contained.

Preferred Alternatives could disrupt groundwater flow in the bluff region which will potentially result in indirect impacts to wetland vegetation growth in the area.

None of the build alternatives will affect state or federal threatened or endangered animal species although each alternative would cause the loss of minor amounts of wildlife habitat. The Presidio Parkway Alternative and Preferred Alternative will permanently remove or damage 5.07 hectares (12.54 acres) of non-native vegetation including non-native forest and ornamental wildlife habitat. The Replace and Widen, With Detour Option would impact 2.37 hectares (5.86 acres) of non-native vegetation.

The Presidio Parkway and Preferred Alternatives will impact geological materials which are a designated resource. Construction of the tunnel segments will require the removal of these designated geologic materials. The Replace and Widen Alternative would not impact these designated resources.

All build alternatives will conflict with specific development plans of various PTMP planning areas. The Replace and Widen Alternative would require the removal of approximately 380 square meters (4,000 square feet) of building space in the Letterman planning area with the No-Detour Option. The Replace and Widen Alternative, With Detour Option would require the permanent removal of approximately 13,200 square meters (142,100 square feet) of building space from the Crissy Field planning area. The Presidio Parkway Alternative would require the maximum removal of almost 10,600 square meters (114,100 square feet) of building space with the Circle Drive and Merchant Road Slip Ramp Options. The building removal would be required in the Crissy Field, Letterman, Main Post and Fort Scott planning areas. The Preferred Alternative will require the permanent removal of approximately 8,590 square meters (92,490 square feet) of building space from the Crissy Field, Main Post and Letterman planning areas. The land use development plans identified in the PTMP call for an increase in building space in each of the identified planning areas; therefore, the removal of building space from these areas will be in conflict the proposed land use goals of the PTMP.

The additional land area required for implementation of each build alternative would also differ. This is the total amount of land that will be required in addition to the existing roadway easement. The Presidio Parkway Alternative would require the greatest amount of land which would vary depending on the design options. The Diamond Option with the Loop Ramp would require a total of 4.6 hectares (11.4 acres), while the Hook Ramp would require 4.1 hectares (10.1 acres). The Circle Drive Option with the Loop Ramp would require a total of 4.5 hectares (11.1 acres), while the Hook Ramp would require 3.9 hectares (9.6 acres). The Merchant Ramp would require an additional 0.5 hectares (1.2 acres) of land. The majority of land to be converted to a transportation use is in areas currently designated as open space/natural. The Preferred Alternative will require 2.6 hectares (6.4 acres) of land for permanent roadway easements. The Replace and Widen Alternative would require the conversion of an additional 0.9 hectares (2.2 acres) of land along the Doyle Drive corridor for the No-Detour

Option and 0.6 hectares (1.5 acres) of land for the With Detour Option for permanent roadways easements.

The total number of historic elements affected would vary between the different design options of the build alternatives. The greatest number of impacts will be associated with the Preferred Alternative which would adversely affect 17 historic elements. The Presidio Parkway Alternative would affect up to 15 elements depending on the design option while the Replace and Widen Alternative, With Detour Option would adversely affect nine elements. As a result of the impacts to the contributing elements, each build alternative will cause a direct adverse effect to the Presidio National Historic Landmark District.

Based on a quantitative analysis of impacts presented in this document it can be determined the Replace and Widen Alternative, No-Detour Option would have the fewest environmental impacts and would therefore be considered the environmentally superior alternative.

Determination of the environmentally superior alternative does not preclude the other alternatives from being selected. The lead agency may adopt a statement of overriding considerations which expresses the agency's views on the merits of approving a project despite its significant adverse environmental impacts. The statement of overriding considerations provides the justification for proceeding with a project despite its environmental impacts. The statement reflects the balancing of competing public objectives including factors such as environmental concerns, legal issues, technical, social, and economic factors. Since the San Francisco County Transportation Authority selected an alternative other than the environmentally superior option, a statement of overriding considerations will be provided as part of the certification of this FEIR.

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