

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*