

active. Alternatively, construction activities potentially affecting peregrine falcons nesting on the Bridge may be conducted outside of the nesting season of the species.

Measure 6: Prior to the commencement of construction activities occurring during the nesting season of native bird species (typically February through August), the biological ECM will conduct or oversee the following activities.

- The biological ECM will conduct surveys for nesting birds protected by the Migratory Bird Treaty Act and/or California Fish and Game Code. The survey area will include potential nesting habitat within and bordering the staging and construction areas, as well as all areas that would be subject to elevated construction-related noise levels.
- If an active nest is found, a construction exclusion zone would be established around the active nest. The size of the exclusion zone will be determined by the CDFG and will take into account existing noise levels at the nest location and the sensitivity to noise of the bird species present.
- Construction activities may commence within the exclusion zone only upon determination by a qualified biologist that the nest is no longer active. The biological ECM will also survey for nesting birds during their regular site visits of the staging areas.

2.7 CUMULATIVE IMPACTS

2.7.1 REGULATORY SETTING

Cumulative impacts are those that result from past, present and reasonably foreseeable future actions, combined with the potential impacts of this project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality and introduction or promotion of predators. They can also contribute to potential community impacts identified for the

project, such as changes in community character, traffic patterns, housing availability and employment.

California Environmental Quality Act (CEQA) Guidelines, Section 15130, describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts, under CEQA, can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts, under the National Environmental Policy Act (NEPA), can be found in 40 CFR (Code of Federal Regulations), Section 1508.7 of the Council of Environmental Quality (CEQ) Regulations.

2.7.2 RELATED DEVELOPMENT PROJECTS

There are several related development projects underway either on the Bridge or in the immediate vicinity of the Bridge. These projects include improvements to the Bridge and access roadways to the Bridge, as well as redevelopment of the Fort Baker site. These projects were taken into consideration when evaluating the cumulative impacts of the project. A more detailed discussion of the related development projects can be found in the summary of this EIR/EA.

Projects on the Bridge (District is Lead Agency)

- Seismic Retrofit Project
- Moveable Median Barrier
- Golden Gate Bridge Main Cable Restoration Project
- Bridge Security Enhancements

Other Projects in Geographic Area

- South Access to the Golden Gate Bridge: Doyle Drive Project (San Francisco County Transportation Authority, California State Department of Transportation, and Federal Highway Administration are lead agencies)
- Fort Baker Reuse Plan (Golden Gate National Recreation Area is the lead agency)
- The Presidio - Environmental Remediation Program (Presidio Trust is the lead agency)

2.7.3 POTENTIAL CUMULATIVE IMPACTS

The CEQ regulations governing the implementation of NEPA (40 CFR 1508.7) define a cumulative impact as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant action taking place over a period of time.

The analysis of the cumulative effects of the proposed project also incorporates the suggestions in the CEQ handbook entitled “Considering Cumulative Effects Under the National Environmental Policy Act” (January 1970), which is intended as an informational document rather than formal agency guidance. Based on the CEQ discussion of cumulative effects, the following principles can be applied to the assessment of cumulative effects of the proposed project.

- Cumulative effects typically are caused by the aggregate effects of past, present and reasonably foreseeable future actions. These are the effects (i.e., past, present and future) of the proposed action on a given resource and the effects (i.e., past, present, and future), if any, caused by all other related actions that affect the same resource.
- When other related actions are likely to affect a resource that is also affected by the proposed action, it does not matter who (i.e., public or private entity) has taken the related action(s).
- The scope of cumulative effects analyses can usually be limited to reasonable geographic boundaries and time periods. These boundaries should extend only as far as the point at which a resource is no longer substantially affected or where the effects are so speculative as to no longer be truly meaningful.
- Cumulative effects can include the effects (i.e., past, present and future) on a given resource caused by similar types of actions (e.g., air emissions from several individual highway projects) and/or the effects (i.e., past, present and future) on a given resource caused by different types of action (e.g., air emissions and traffic from several different development projects).

The analysis that follows considers the potential cumulative effects, if any, which would result from construction and operation of the proposed project, combined with construction and operation of the related projects, listed above and described in the summary of this EIR/EA.

2.7.4 ENVIRONMENTAL RESOURCES FOR WHICH NO CUMULATIVE IMPACTS WOULD OCCUR

Land Use

The proposed project would not contribute to cumulative land use impacts. Related projects, including the Doyle Drive Project and the Fort Baker Reuse Plan cumulatively contribute to land use change in the project area. However, both projects would have beneficial impacts to the project area, as the Doyle Drive Project would improve traffic flow through the project area and improve access to recreational facilities, and the Fort Baker Reuse Plan would enhance public recreational opportunities through the creation and improvement of recreational facilities. The project would make no contribution to cumulative land use impacts because it would not change the use of the Bridge or any surrounding areas and would fully retain the existing function of the Bridge.

Visual/Aesthetics

The proposed project would not contribute to cumulative visual impacts from the landscape units. Cumulative visual impacts address the effect of the project on overall visual quality at the landscape unit scale, or the overall and surrounding visual character of the project area. This analysis reflects the cumulative effects of the project on views from the surrounding landscape units. The change in visual quality at each landscape unit is evaluated by alternative, based on the description of each alternative contained in Chapter 1, Proposed Project, and visual simulations of the build alternatives.

Impacts to the existing visual quality would be minimally adverse to negligible. The No-Build Alternative would have no impact on visual quality since it would not change the existing visual environment, but would instead perpetuate the visual conditions associated with the current structure. As alternatives 1A, 1B, 2A, 2B and 3 would be located on the Bridge, visual changes by landscape unit would be limited to the views of the Bridge from each respective landscape unit.

All of the build alternatives would cause a minimally adverse change to the existing visual quality at the San Francisco Bay and Fort Baker landscape units, as described below. Alternatives 1A, 1B, 2A and 2B would cause a minimally adverse change to the existing visual quality at the toll plaza and Marin Headlands landscape units. Alternative 3 would cause a negligible change to the existing visual quality at the toll plaza and Marin Headlands landscape units. These minor changes to visual resources, in light of the other projects, do not result in cumulative visual impacts.

The Presidio

The proposed project would not contribute to cumulative visual impacts at the Presidio landscape unit. The Presidio landscape unit is located directly south of the toll plaza of the Bridge. This landscape unit provides an aesthetic of a natural area in combination with residences and historic buildings, such as the former military structures. This landscape unit primarily includes a woodland image type, consisting mostly of tall eucalyptus and pine trees.

Implementation of the project alternatives would not disrupt the visual quality or integrity of the Presidio landscape unit, as the project would be limited to the Bridge. However, views of the Bridge from the Presidio could potentially be affected as illustrated in the simulations of Viewpoint 1 (Fort Point) and Viewpoint 2 (Baker Beach). Because of the angle of view at Fort Point and the view distance at Baker Beach, views would not be noticeably altered from this landscape unit.

Table 2.7-1 summarizes the change to visual quality at the Presidio landscape unit from each proposed alternative.

Table 2.7-1 Visual Quality Change from Presidio Landscape Unit

Alternative	Visual Dominance of Bridge Handrail	View Blockage	Vividness	Intactness	Unity	Overall Visual Quality
Existing	Subordinate	Low	Outstanding	High	Outstanding	Outstanding
No-Build	No Change	No Change	No Change	No Change	No Change	No Change
Change						
1A	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
1B						
2A						
2B						
3						

Toll Plaza Area

The proposed project would not contribute to cumulative visual impacts at the toll plaza landscape unit. The toll plaza landscape unit is located at the southern end of the Bridge and the northernmost part of the Presidio. The toll plaza area is comprised of a series of toll booths that span across the

southern section of the Bridge. The parking lot on the east side of the toll booths contains a vista point with expansive views of the Bridge, San Francisco Bay and the Marin Headlands. On the west side of this landscape unit, a wooded area surrounds a parking lot that provides parking for District employees as well as tourists. Image types within this landscape unit include the institutional toll plaza buildings, trees and wooded areas, and recreational uses.

The project alternatives would not disrupt the overall aesthetic character of the toll plaza landscape unit, as they would be located on the Bridge span to the north of the toll plaza. Visual impacts related to views of the Bridge from this landscape unit would not conflict with the institutional image types on this landscape unit. The change in visual quality would therefore not be significant.

Table 2.7-2 summarizes the change to visual quality at the toll plaza landscape unit for each proposed alternative.

Table 2.7-2 Visual Quality Change from Toll Plaza Landscape Unit

Alternative	Visual Dominance of Bridge Handrail	View Blockage	Vividness	Intactness	Unity	Overall Visual Quality
Existing	Subordinate	Moderate	Moderate	Moderate	Moderate	Moderate
No-Build	No Change	No Change	No Change	No Change	No Change	No Change
Change						
1A	Minimally Adverse	Minimally Adverse	Minimally Adverse	Minimally Adverse	Minimally Adverse	Minimally Adverse
1B						
2A						
2B						
3	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible

Marin Headlands

The proposed project would not contribute to cumulative visual impacts at the Marin Headlands landscape unit. The Marin Headlands, located at the southernmost tip of Marin County, are an undeveloped, mountainous area. The north approach of the Bridge connects with the Marin Headlands. Typical image types in this landscape unit include open space and recreational uses, such as ridges and trails. The overall aesthetic character

of this area is undisturbed open space with few manmade features and steep, rocky cliffs meeting with the San Francisco Bay and Pacific Ocean.

As the project alternatives are located on the Bridge, implementation of the proposed alternatives would not disrupt the visual integrity of the Marin Headlands landscape unit. However, as discussed above, Viewpoint 4 (Vista Point) and Viewpoint 5 (Marin Headlands) would represent views of the Bridge from this landscape unit.

Table 2.7-3 summarizes the change to visual quality at the Marin Headlands landscape unit from the proposed project alternatives.

Table 2.7-3 Visual Quality Change from Marin Headlands Landscape Unit

Alternative	Visual Dominance of Bridge Handrail	View Blockage	Vividness	Intactness	Unity	Overall Visual Quality
Existing	Subordinate	Low	Outstanding	High	High	Outstanding
No-Build	No Change	No Change	No Change	No Change	No Change	No Change
Change						
1A	Minimally Adverse	Minimally Adverse	Minimally Adverse	Minimally Adverse	Minimally Adverse	Minimally Adverse
1B						
2A						
2B						
3	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible

San Francisco Bay

The proposed project would not contribute to cumulative visual impacts at the San Francisco Bay landscape unit. The Bridge is suspended above the San Francisco Bay as it meets with the Pacific Ocean. The Bay primarily consists of coastal image types, as the water meets with the San Francisco and Marin County coastlines. The overall aesthetic of this landscape unit is of the expansive blue-green waters surrounded by urban and industrial uses and natural landscapes.

Although the project alternatives would be located on the Bridge as it extends across the blue-green waters of the San Francisco Bay, implementation of the alternatives would not disrupt the overall aesthetic

and integrity of the San Francisco Bay landscape unit. As discussed above, Viewpoint 6 (Boat View East) analyzes the visual impacts to views of the Bridge from the San Francisco Bay.

Table 2.7-4 summarizes the change to visual quality at the San Francisco Bay landscape unit from each proposed alternative.

Table 2.7-4 Visual Quality Change from San Francisco Bay Landscape Unit

Alternative	Visual Dominance of Bridge Handrail	View Blockage	Vividness	Intactness	Unity	Overall Visual Quality
Existing	Subordinate	Low	High	High	High	High
No-Build	No Change	No Change	No Change	No Change	No Change	No Change
Change						
1A	Negligible	Minimally Adverse				
1B						
2A						
2B						
3						

Fort Baker

The proposed project would not contribute to cumulative visual impacts at the Fort Baker landscape unit. Fort Baker is located to the northeast of the Bridge at the base of the Marin Headlands. This landscape unit consists of historic army buildings clustered around the waterfront area of Horseshoe Cove. Educational facilities including the Discovery Museum and a conference center are also located at Fort Baker. Typical image types include historic/landmark, institutional/military, and recreational uses. The aesthetic character of this area is of low-density development surrounded by the natural landscape of the San Francisco Bay and Marin Headlands.

Implementation of the project alternatives would not disrupt the visual quality or integrity of the Fort Baker landscape unit, as the project would be limited to the Bridge. However, views of the Bridge from Fort Baker could potentially be affected, as illustrated in the simulation of Viewpoint 3, which represents the closest view of the Bridge from Fort Baker. The

introduction of a physical suicide deterrent system would be a noticeable visual change in the appearance of the Bridge from Fort Baker. The minor changes in visual resources, in light of the overall landscape character at Fort Baker would not represent a significant change in the overall visual quality at this landscape unit.

Table 2.7-5 summarizes the change to visual quality at the Fort Baker landscape unit from each proposed alternative.

Table 2.7-5 Visual Quality Change from Fort Baker Bay Landscape Unit

Alternative	Visual Dominance of Bridge Handrail	View Blockage	Vividness	Intactness	Unity	Overall Visual Quality
Existing	Subordinate	Low	High	Moderate	High	Moderate
No-Build	No Change	No Change	No Change	No Change	No Change	No Change
Change						
1A	Minimally Adverse	Minimally Adverse	Minimally Adverse	Minimally Adverse	Minimally Adverse	Minimally Adverse
1B						
2A						
2B						
3						

Biological Resources

The proposed project would not contribute to cumulative biological impacts. The proposed project would use staging areas within GGNRA lands which have been and/or continue to be used to facilitate the Golden Gate Bridge Seismic and Wind Retrofit Project. As part of that project, a Biological Opinion was issued by the USFWS and measures were implemented to prevent the loss of Mission blue butterfly and its habitat, as well as other sensitive biological resources. The avoidance measures, which have successfully been implemented as part of the Golden Gate Bridge Seismic and Wind Retrofit Project, would continue to be implemented as part of the proposed project in order to prevent adverse affects to Mission blue butterfly, special-status plant species, and coastal scrub habitat. The continued protection of these species in combination with the other habitat conservation activities throughout GGNRA and the Presidio represent a

positive contribution to the preservation of sensitive biological resources in the region.

2.7.5 ENVIRONMENTAL RESOURCES HAVING POTENTIAL CUMULATIVE IMPACTS

Recreation

The proposed project would contribute to cumulative recreational impacts, through the reduction in the field of views from the Bridge, which would alter the recreational experience of pedestrians and bicyclists using the Bridge sidewalks. None of the build alternatives, however, would affect land that is currently being used for recreation in the project vicinity. All areas proposed for potential use as construction staging areas are currently being used for similar staging and maintenance activities and are physically separated from recreational uses on surrounding properties. The alteration of the pedestrian's and bicyclist's recreational experience on the Bridge, in the context of the absence of any other impacts to recreational facilities in the project area, would not be considered cumulatively considerable.

Cultural Resources

Construction of project alternatives 1A, 1B, 2A, 2B or 3 would cause cumulative adverse effects to the Bridge historic property. Cumulative effects analysis takes into consideration that "adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative" (36 CFR 800.5 (a) (1)). Previous projects at the Bridge, such as the Public Safety Railing Project (2003) and the Seismic Retrofit Project for the Bridge (currently underway) were subject to Section 106 effects analysis and CEQA impacts analysis. The Seismic Retrofit Project includes modification to the outside handrail on the west side of the Bridge between the two main towers and the installation of the wind fairings. No adverse effects to character-defining features, or the qualities that qualify the Bridge for listing in the National Register of Historic Places (NRHP), were identified for either project. The State Historic Preservation Office (SHPO) concurred with these findings, and the previous determination that the Bridge is eligible for listing in the NRHP remains valid.

Nevertheless, many projects have altered the Bridge property since its construction in 1937, including 1980s and 1990s projects to add a west sidewalk on the North Approach (there was none originally); widen the east sidewalk on the North Approach; replace North Approach concrete guardrails with metal and rehabilitate sidewalk framing, traffic curb, pedestrian railing, and electroliers (light posts); as well as a project in the

1990s that replaced over one mile (6,557 linear feet) of outside handrail on the west side of the Bridge with replicas of the originals. Construction of project alternatives 1A, 1B, 2A, 2B or 3 would, therefore, contribute to an adverse cumulative effect on the Bridge property in consideration of these past projects.

No reasonably foreseeable adverse effects of future projects have been identified. Projects in the planning process include: Moveable Median Barrier (MMB) Project and Cable Restoration Project. The barrier system includes one-foot-wide, 32-inch-high steel clad units filled with high-density concrete tightly pinned together to form a semi-rigid, moveable barrier between the center lanes of traffic. The MMB project is undergoing planning, design and environmental review. The Cable Restoration Project will include installation of portions of new main cable exterior wire wrapping, reconditioning and replacing cable shrouds, and painting and caulking. Neither of these projects is anticipated to cause an adverse effect to the Bridge. The MMB project will not require physical modification of character-defining features of the Bridge. The main cable is a character-defining feature of the Bridge, but the rehabilitation activities of the Cable Rehabilitation Project involve repair and in-kind replacement of some components of the main cable in a manner consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR part 68). The project alternatives would not cause an adverse cumulative effect to the Bridge as a historic property in consideration of known future projects.

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