FINDING OF EFFECT

Golden Gate Bridge Moveable Median Barrier Project

City and County of San Francisco and County of Marin, California

Federal Project #: STPL-6003(037)



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1. INTRODUCTION

The Golden Gate Bridge, Highway and Transportation District (District) is proposing the Golden Gate Bridge Moveable Median Barrier Project, Federal Project #: STPL-6003(037) [Project]. The Project under study in this report proposes installation of a moveable median barrier along U.S. Highway 101 on and immediately adjacent to the Golden Gate Bridge in the City and County of San Francisco and County of Marin (**Figure 1**, **Appendix A**). These measures would enhance traffic safety by providing a physical barrier to separate opposing directions of traffic.

The District, in cooperation with the Federal Highway Administration (FHWA) and California Department of Transportation (Caltrans), is preparing environmental studies in accordance with the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and other applicable laws and regulations. JRP Historical Consulting, LLC (JRP) prepared this Finding of Effect (FOE) to assess whether the Project will have an adverse effect on the Golden Gate Bridge historic property. The purpose of the FOE is to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and the implementing regulations of the Advisory Council on Historic Preservation (ACHP) as these pertain to federally-funded undertakings and their impacts on historic properties, by applying the Criteria of Adverse Effect, set forth in Title 36 Code of Federal Regulations (CFR) Part 800.5, and following the guidelines for documentation in 36 CFR 800.11. This FOE was also prepared in accordance with the January 1, 2004, Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California (Caltrans Section 106 PA).

Because of the focused scope of this Project, which is limited to the U.S. 101 right-of-way on and immediately adjacent to the Golden Gate Bridge, Caltrans determined that preparation of a Historic Resources Evaluation Report (HRER) and a Historic Property Survey Report (HPSR) is not required for this Project (see Caltrans letter dated March 23, 2010, attached as **Appendix B**). Section 106 compliance activities and public participation conducted for this Project have included circulation of letters to parties interested in historical resources (**Appendix B**), and posting of regular Project Status Updates (September 2007 through March 2011) on the District website (http://goldengatebridge.org/projects/MoveableMedianBarrier.php). These efforts are discussed further in **Section 3**.

The Golden Gate Bridge is the only historic property within the Project Area (**Figure 2**, **Appendix A**). This historic property includes as contributing elements: the main Bridge structure (Caltrans Bridge 27 0052), the Toll Plaza Undercrossing (Bridge 34 0069), the southern approach road (also known as the Presidio Approach Road, or Doyle Drive) and its two viaducts (Bridges 34 0014 and 34 0019), as well as the Round House Gift Center. The Golden Gate Bridge historic property was determined eligible for listing in the National Register of Historic Places in 1980, with updates, and refinements to its designation status were defined in subsequent studies, as described in **Section 4**.

FHWA has determined that the undertaking as a whole will *not* have an Adverse Effect on the historic property known as the Golden Gate Bridge, pursuant to Stipulation X.C of the Caltrans Section 106 PA.

2. DESCRIPTION OF THE UNDERTAKING¹

2.1 Project Area

The proposed Moveable Median Barrier (MMB) would be located along U.S. Highway 101 and extend across the 1.7-mile long Golden Gate Bridge (Bridge) above San Francisco Bay, between the City and County of San Francisco and Marin County (**Figure 1, Appendix A**). At completion, the total length of the median barrier would be approximately 3.1 miles, extending from just south of the Waldo Tunnel on the north side of the Bridge to just north of the Highway 1/Park Presidio area on the south side of the Bridge, as shown in the attached Project Area Map (**Figure 2, Appendix A**).

As discussed further below, all Project activities, including installation of the moveable median barrier and demolition and reconstruction work, will be confined to the U.S. 101 right-of-way on and immediately adjacent to the Golden Gate Bridge. Construction staging activities will take place in areas currently in use for similar Bridge operations; no expansion of the staging areas beyond their existing footprint will be permitted. Because of the focused physical scope of the Project, Caltrans has determined that preparation of a Historic Resources Evaluation Report (HRER) and a Historic Property Survey Report (HPSR) is not required (see Caltrans letter dated March 23, 2010, attached as **Appendix B**).

The Golden Gate Bridge is the only historic property within the Project Area. The Project has no potential to affect historic properties outside of the Project Area. Please refer to **Section 4** for a description of the cultural resources addressed in this FOE.

2.2 Project Purpose and Need

The purpose of the Project is to enhance traffic safety along the Bridge by providing a physical barrier to separate opposing directions of traffic. Each day, approximately 120,000 vehicles traverse the Bridge. To accommodate this many vehicles, Bridge operations crews alter the lane configuration in both the north and south directions throughout the day to provide an increased number of lanes in the peak direction. Currently, northbound (NB) and southbound (SB) traffic along the Bridge is separated by 19-inch tall, 4-inch diameter yellow hollow plastic tubes placed 50 feet and 25 feet apart on tangent and curve sections, respectively. These tubes serve to delineate opposing directions of traffic, but provide no physical protection against crossover collisions.

In order to increase the safety of motorists on the Bridge, as well as accommodate varying traffic demands, the Golden Gate Bridge, Highway and Transportation District (District) proposes to install a Moveable Median Barrier (MMB) system. This system will provide a semi-rigid barrier between opposing traffic lanes on the Bridge, while at the same time allowing the District the flexibility to reconfigure the lanes on the Bridge to meet the peak capacity demands. Installation of the MMB would virtually eliminate crossover "head on" accidents on this highway facility.

The District is evaluating one "build" and one "no-build" alternative for the proposed Project.

¹ The text for the following chapter has been adapted from two studies prepared for this Project: AECOM Transportation, "Operations and Maintenance Report, Golden Gate Bridge Moveable Median Barrier Study, Prepared for the Golden Gate Bridge Highway and Transportation District, Federal Project Number STPL-6003(037)," July 26, 2011; and Jeffrey Barr, RLA, "Draft Visual Impact Assessment, Golden Gate Moveable Median Barrier Project," July 26, 2011.

2.3 Build Alternative

For the Build Alternative, the District proposes installing a Steel Reactive Tension System Quickchange Moveable Barrier (SRTS-12"QMB), designed and manufactured by Barrier Systems Inc. (BSI) of Rio Vista, California. The barrier is made up of a series of inter-linked high strength steel structures filled with concrete, each unit of which measures 39"x12"x32" (LxWxH). The units would have a 24"-wide steel base with four rubber feet and rest on the surface of the roadway (**Plate 1**). To allow for curvature in the system, as well as provide expansion potential on the Bridge, the MMB is installed with Variable Length Barriers (VLB) at predetermined locations. The materials and dimensions of the VLB units are similar to the steel-clad MMB units, except that the lengths may vary from 39-½" minimum to 53-½" maximum.

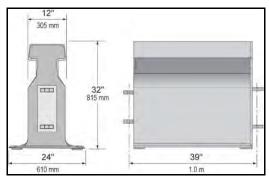


Plate 1. Detail of Moveable Median Barrier steel and concrete units

At completion of the Project, the semi-rigid barrier would extend 3.1 miles and could be used in three lane configurations (**Plate 2**):

- **2N/4S Configuration** Two northbound lanes / four southbound lanes
- 3N/3S Configuration Three northbound lanes / three southbound lanes
- 4N/2S Configuration Four northbound lanes / two southbound lanes

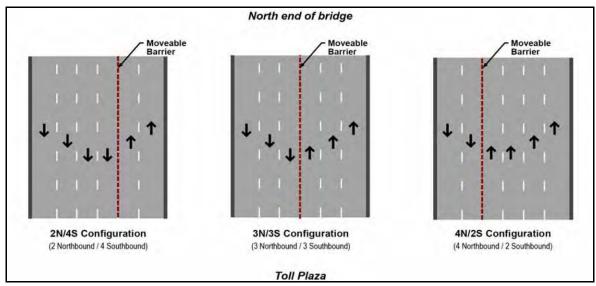


Plate 2. Moveable Median Barrier lane configurations

The use of a Barrier Transfer Machine (BTM) is also proposed as part of the Project. The BTM, which is approximately 9.5 feet wide and 51 feet long, is referred to as a "zipper truck" because the barrier is moved by one lane as the truck travels along the roadway. Two BTMs would be required as part of the Project, as each machine moves the median barrier laterally by one lane (**Plate 3**). Once the barrier is in place, the BTMs would be stored within the U.S. 101 right-of at the north and south ends of the MMB (see **Section 4.1.1**).



Plate 3. Barrier Transfer Machine (BTM)

2.4 No-Build Alternative

The No-Build Alternative represents the future year conditions if no other actions are taken in the study area beyond what is already in place; it is the baseline condition against which all other alternatives are compared. The No-Build Alternative would continue the existing hollow plastic tube traffic separation measures.

2.5 Construction Activities

2.5.1 Roadway Work

The proposed Project would involve minor roadway work that includes removal of the existing permanent barrier, paving of the median area (north end), installation of a permanent barrier (Type 60) at the plaza area, and restriping. Restriping would be necessary for compatibility with the MMB, proposed roadway changes, and reconfigured toll booths. There would be new chevron markers to indicate a collector-distributor road adjacent to the auxiliary lane at the north end. Restriping would occur on the Vista Point on-ramp and within the highway right-of-way from the Bridge approaches just south of the toll plaza area to south of Waldo Tunnel.

2.5.2 Removal and Reconstruction

The Project would also involve modifications to the existing, non-historic toll plaza at the southern Bridge approach. The Project would require the removal of the four easternmost toll booths and the adjacent guard vestibules. One toll booth on the eastern side of the Bridge would be permanently removed and three other toll booths would be reconstructed. All three new toll booths would be about three feet taller than the existing toll booth canopy to provide vertical clearance for larger vehicles, as shown in **Plate 4**. The form of the modified toll plaza will remain the same as the existing toll plaza.

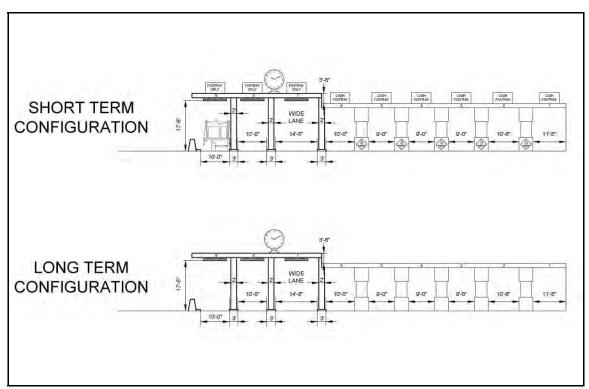


Plate 4. Toll Plaza modifications after partial demolition and reconstruction, with the slightly taller new canopy section shown at left.

North of the Bridge, a portion of the existing permanent median barrier and a vegetated median strip on U.S. 101 would also be removed and paved over.

2.5.3 Construction Staging Areas

Construction staging areas have been proposed at four locations within the Golden Gate National Recreation Area (GGNRA), and would be used during Project construction activities. These proposed staging areas are located on the northern side of the Bridge in Marin County below the Marin Approach and Span 4 backspan. One is an existing gravel area located in a switchback of Conzelman Road and the other three are open gravel-surfaced areas located under the northern span of the Bridge, which are currently being used for similar staging and maintenance activities and other Bridge operations. One proposed construction staging area to the south of the Bridge is located adjacent to the Bridge toll plaza within the Presidio. This proposed staging area is an existing paved employee parking lot with 25 public spaces, located just west of the toll plaza off Merchant Road. Project-related construction equipment and materials would be stored within one or more of these construction staging areas. No expansion of the construction staging areas beyond their existing footprint will be permitted.

2.5.4 Equipment Storage

The BTM would be stored within the Bridge and roadway right-of-way. The BTM would have two storage locations within the highway median. The number of BTMs in one of these locations would vary throughout each day as different lane configurations were deployed. In the 4NB/2SB lanes configuration, both BTMs would be stored immediately north of the Bridge toll plaza, while during the 2NB/4SB lanes configuration, both BTMs would be stored in the highway median south of the Waldo Tunnel. In the 3NB/3SB lanes configuration, one BTM would be

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stored at each of the storage areas. Once Doyle Drive construction is completed, the storage at the plaza area would be relocated to approximately 1,600 feet south of the toll plaza in the Presidio Parkway median.

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3. PUBLIC PARTICIPATION

3.1 Section 106 Process to Date

This section presents the Section 106 process activities that have been completed, those taking place concurrently with the preparation of this Draft FOE, and those that will take place after the submittal of this document. Correspondence pertaining to this Project to date is included in **Appendix B**.

To date, efforts to involve the public in the Section 106 process have included:

- The District maintains a website that documents the progress and developments of the Project. It provides regular Project Status Updates, most recently updated in March 2011 (http://goldengatebridge.org/projects/MoveableMedianBarrier.php).
- The District has prepared a letter to parties interested in historical resources. The letter, dated September 30, 2011, and sent out on October 6, 2011, seeks comment or concern regarding the Project and its potential to affect the character-defining features of Golden Gate Bridge. Copies of the letter and the list of recipients are included in **Appendix B**. Responses to this letter will be appended to this document and included in the environmental document upon receipt.

3.2 On-going Public Participation

This section will be expanded upon after submittal of this draft report as the Section 106 process continues for the Project, and will describe all steps taken to ensure public concerns were taken into account. If concerns regarding historic properties are raised by public agencies or other interested parties, this section will identify all actions taken by the Project to ensure public concerns are taken into account in the Section 106 process. The District will also continue to update the public information website for the Project:

http://goldengatebridge.org/projects/MoveableMedianBarrier.php.

On-going public participation opportunities may include District Board meetings, which are open to the public. Public comments received during formal public comment periods will be part of the public record and will be incorporated into the process and the environmental document. In addition, all comments received at District Board meetings will be reviewed by the Project team for consideration as they may relate to the Project.

The District, in conjunction with Caltrans and FHWA, is continuing consultation with SHPO following 36 CFR 800.

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4. DESCRIPTION OF HISTORICAL RESOURCES

4.1 Steps Taken to Identify Historic Properties

The Golden Gate Bridge historic property was determined eligible for listing in the NRHP in 1980 and it is a historic property for the purposes of Section 106 compliance. The Bridge has been the subject of extensive documentation and historical analysis since the time of its construction (1933-1938), as well as numerous published accounts and other popular media, and has been recognized by several local, state, and federal programs. It was designated as California State Historic Landmark No. 974 in 1990, which automatically listed the property in the California Register of Historical Resources (CRHR).² The Golden Gate Bridge and its approaches have been documented by the Historic American Engineering Record (HAER No. CA-31), and the Bridge has been recognized by the American Society of Civil Engineers on at least three separate occasions: as one of the Seven [engineering] Wonders of the World in 1955, as a National Civil Engineering Landmark in 1984, and as a Monument of the Millennium in 2001. The Golden Gate Bridge is also San Francisco City Landmark No. 222. Currently, Caltrans lists the Bridge as Category 2 (eligible for listing in the NRHP) in its Caltrans Historic Bridge Inventory.³ The Golden Gate Bridge is also a historical resource for the purposes of California Environmental Quality Act (CEQA).

The most detailed previous studies are listed below. Copies of the Office of Historic Preservation Historic Properties Data File and Caltrans Historical Significance – State Agency Bridge sheets for the various Golden Gate Bridge structures are provided in **Appendix D**. The list of all reference materials consulted for this FOE appears in **Section 8**.

• JRP Historical Consulting, LLC, "Historic Property Survey Report, Golden Gate Bridge Physical Suicide Deterrent System Project, City and County of San Francisco and County of Marin, Project 2006-B-17, 04-MRN-101-GGHT, Federal Project #: STPL-6003(030)," prepared for Golden Gate Bridge, Highway and Transportation District, May 2008.

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² National Park Service, "National Historic Landmark Nomination for the Golden Gate Bridge," August 13, 1997; California Office of Historic Preservation, "Directory of Properties in the Historic Property Data File for San Francisco County," as of October 2010, on file with Northwest Information Center; Caltrans, "Structure & Maintenance Investigation, Historical Significance–State Agency Bridges," June 2011; Homme, FHWA, "Request for Determination of Eligibility for the Golden Gate Bridge," 1979; Stephen Mikesell, "HRER Approaches to the Golden Gate Bridge," 1987; Snyder, Memorandum to SHPO re: Presidio Viaduct and Marina Viaduct, April 3,1990; and Nissley at ACHP, Letter to Markle at FHWA, re: Marina Viaduct Seismic Retrofit, 1994. Caltrans and California Office of Historic Preservation records indicate that the Golden Gate Bridge has been the subject of historic evaluation for many years. The Keeper of the National Register determined the bridge to be eligible for the NRHP in 1977 (Status 2S1) and in 1980 a consensus determination was made, resulting in a Status 2S2 (determined eligible for separate listing). Caltrans Architectural Historian Stephen Mikesell evaluated the approaches to the bridge and concluded that the Presidio Viaduct (Bridge 34 0019) and Marina Viaduct (34 0014) were eligible for listing in the NRHP as contributing elements of the Golden Gate Bridge and SHPO concurred.

³ National Park Service, "National Historic Landmark Nomination for the Golden Gate Bridge," August 13, 1997; Golden Gate Bridge, HAER # CA-31 (1984); Presidio of San Francisco, HABS # CA-1100-1114, 1173, 1174, 1212-1216, 1239, and 2269; San Francisco Planning Department, Landmarks Preservation Advisory Board, Golden Gate Bridge, case file for Landmark No. 222, 1999; Caltrans, "Structure & Maintenance Investigation, Historical Significance–State Agency Bridges," June 2011.

- National Park Service, "National Historic Landmark Nomination for the Golden Gate Bridge," August 13, 1997.
- Frank L. Stahl, Daniel E. Mohn, and Mary C. Currie, *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007* (San Francisco, CA: Golden Gate Bridge, Highway and Transportation District, 2007). This 2007 report, a supplement to *The Golden Gate Bridge, Report of the Chief Engineer, September 1937* by Joseph B. Strauss, provides a comprehensive history of the improvements and other modification to the Bridge since its completion in 1937.

4.2 Description of Historic Property

As part of the compliance effort for this Project, JRP compiled and reviewed previous studies of the Golden Gate Bridge, as well as Section 106-related correspondence. The most recent update of the Golden Gate Bridge historic property was a Historic Property Survey Report (HPSR) that JRP prepared in 2008 for the Golden Gate Bridge Physical Suicide Deterrent System Project. Under that study, JRP inventoried and evaluated the Golden Gate Bridge historic property to update the record of its current appearance, update identification of contributing elements, and update the description of its character-defining features since the time of its previous inventory in 1993. As discussed in detail on the updated DPR 523 form (attached as **Appendix C**), the Bridge historic property includes as contributing elements the main Golden Gate Bridge structure (Caltrans Bridge 27 0052), the Toll Plaza Undercrossing (Bridge 34 0069), the southern approach road (also known as the Presidio Approach Road, or Doyle Drive) and its two viaducts, the Marina Viaduct (Bridge 34 0014) and Presidio Viaduct (34 0019), and the Round House Gift Center.⁵

The Golden Gate Bridge historic property was originally determined eligible for listing in the National Register of Historical Places in 1980, OHP Status Code 2. The consensus determination in 1980 found the Bridge significant, at the national level, under NRHP Criterion A, B, and C, with a period of significance of 1933-1938. Subsequent detailed analysis by the National Park Service in the 1997 NHL nomination proposed significance under Criterion C only, citing the Bridge's importance as an important example of: suspension bridge technology, Art Deco design, and the work of more than one master engineer and architect. The Criterion C significance appears to be accurate and was proposed as the correct designation in the updated evaluation of the property presented in the Historic Property Survey Report for the Physical Suicide Deterrent System Project.⁶

The Golden Gate Bridge is one of the most well-known, internationally recognized, and frequently visited suspension bridges in the world. Combining Art Deco and Streamline Moderne design with advanced engineering technologies, and situated against a dramatic coastal backdrop, the Bridge has been described as an environmental sculpture and is widely noted for its harmonious blending of the natural and built environment. The extraordinary setting

⁴ This National Landmark Nomination has not been accepted and the Bridge is not yet listed as an NHL.

⁵ JRP Historical Consulting, LLC, "Historic Property Survey Report [HPSR], Golden Gate Bridge Physical Suicide Deterrent System Project, Project 2006-B-17, 04-MRN-101-GGHT, Federal Project #: STPL-6003(030)," May 2008. See also Appendix D for copies of the Caltrans Historical Significance – State Agency Bridge sheets.

⁶ National Park Service, "National Historic Landmark Nomination for the Golden Gate Bridge," August 13, 1997; JRP, "HPSR, Golden Gate Bridge Physical Suicide Deterrent System Project," May 2008.

intensifies the visual power of the Bridge.⁷ The 1993 survey and the 1997 nomination cited above identified the main Bridge structures from the Toll Plaza area on the south, to the Marin Approach Viaduct and North Abutment on the north, as the primary element of the Golden Gate Bridge historic property. The major components of the Golden Gate Bridge are the main suspension span, suspender ropes and suspension cables, four pylons, Fort Point Arch, and two of each of the following structures: side suspension spans, anchorages, piers, towers, and North and South viaducts (see **Plate 5** below).

The Bridge has a symmetrical design. Vertical structural elements on the horizontal plane are generally based on increments of 12 ½ feet. For example, the outside handrail posts and the public safety rail posts are aligned at a spacing of 12 ½ feet. Additionally, light posts are 150 feet apart (12 x 12 ½ feet), and the suspender ropes are 50 feet apart (4 x 12 ½ feet). Belvederes (24 widened areas located on both the east and west sidewalks) are 12 ½ feet long and centered between two suspender ropes. Maintenance gates on the public safety railing are spaced at 150 feet (12 x 12 ½ feet) and are aligned with the light posts. Vertical members of the stiffening truss are spaced at 25 feet and are aligned with the suspender ropes. **Plate 5** below shows a profile view of a section of the Bridge illustrating the relationship of these structural elements.

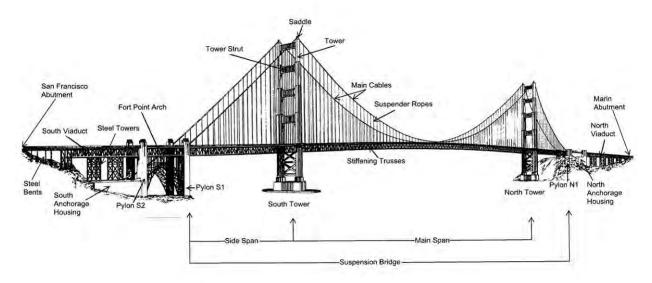


Plate 5. Main Elements of the Golden Gate Bridge

(Source: MacDonald Architects, "HASR: Seismic Retrofit Project, Golden Gate Bridge," [1995]).

The 1997 nomination identified the southern approach road (also known as the Presidio Approach Road, or Doyle Drive), and its two viaducts (Bridges 34 0014 and 34 0019), as contributing elements of the Bridge, as well as the Round House Gift Center (originally a restaurant and traveler comfort station). The nomination considered the entire Doyle Drive feature to be a contributing element of the Golden Gate Bridge. The Toll Plaza Undercrossing (34 0069) is a contributing element of the property because it is an original component of the

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⁷ National Park Service, "National Historic Landmark Nomination for the Golden Gate Bridge," August 13, 1997; Homme, FHWA, "Request for Determination of Eligibility for the Golden Gate Bridge," 1979; National Park Service, "Presidio of San Francisco: Presidio National Register of Historic Places Registration Forms," signed by Keeper of the National Register of Historic Places, October 1993.

Bridge (**Plate 6**). The tunnel-like undercrossing is a single span concrete tee beam structure designed to allow vehicular traffic and pedestrians to cross from one side of the roadway to the other underneath the Toll Plaza using surface streets. The west side of the undercrossing is directly underneath the Administration Building (a non-contributing element because of integrity loss, according to both the 1993 and 1997 surveys), as shown in below. The rest of the undercrossing carries the lanes of traffic as they pass through the toll booths. Caltrans bridge logs indicate that the undercrossing is about 33' long and 291' wide, and that it has not undergone major widening or extension since it was completed in 1936. Finally, the railings and original light standards were identified as character-defining elements of the Bridge.⁸



Plate 6. Detail of 1937 photograph showing Toll Plaza and Bridge Administration Building during Bridge construction, with west entrance to the Toll Plaza Undercrossing (34 0069) visible underneath the southern end of the building. (Permission pending: San Francisco Historical Photograph Collection, San Francisco Public Library)

The primary character-defining elements and decorative features of the Bridge and its contributing elements are its major structural elements (the suspension bridge anchorages, pylons, piers, towers, main span and side spans), the plate girder bridge, arch bridge, and truss bridges of the approaches, the southern approach roadway (Doyle Drive), main suspension cables, Round House, and Toll Plaza Undercrossing. The Art Deco / Moderne design of these structures is a high ranking character-defining feature of all of these structures and their use within the overall Bridge. The railings from the original construction and railings replicated to match original, as well as the layout of the sidewalks – width and construction around piers and pylons – that allow pedestrian use are essential character-defining features of the property. Although the sidewalks have been extended and widened, they continue to serve as important, human-scale features of the Bridge that make it readily accessible to the commuting and visiting public, functions intentionally included by Chief Engineer Joseph B. Strauss and Consulting Architect Irving F. Morrow.⁹

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⁸ National Park Service, "National Historic Landmark Nomination for the Golden Gate Bridge," August 13, 1997; Caltrans, "Structure & Maintenance Investigation, Log of Bridges on State Highways," May 2011, accessed online at: http://www.dot.ca.gov/hq/structur/strmaint/brlog/logpdf/logd04.pdf.

⁹ Irving F. Morrow to Ernest Born, September 26, 1938, and "Physical Characteristics of the Golden Gate Bridge compiled by Joseph B. Strauss, Chief Engineer," typescript, received January 28, 1933, "Irving F. Morrow (and Gertrude C. Morrow) Collection, 1914-1958," Project III.14, Environmental Design Archives, UC Berkeley; Consulting Board of Engineers for the Golden Gate Bridge, Minutes, July 16 and 17, 1934, Charles Derleth Papers, Box 1, Water Resources Center Archives, UC Berkeley.

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Other character-defining features that are important in conveying the artistic value of the property are the electroliers, or light standards, the International Orange paint color, and remaining concrete railings. The previous evaluations specifically identified the light standards and pedestrian railings as contributing elements of the property, and both were designed by consulting architect Irving F. Morrow. "In addition to recommending the red vermilion (known as "international orange") paint color that still graces the Bridge today, Mr. Morrow was largely responsible for the architectural enhancements that define the Bridge's Art Deco form. The pedestrian railings were simplified to modest, uniform posts placed far enough apart to allow motorists an unobstructed view. The electroliers (light posts) took on a lean, angled form and decorative cladding was added to the portal bracing of the main towers."¹⁰

Several non-contributing features were identified in the 1993 and 1997 studies. These included: the Sausalito Lateral (original approach to the north side of the Bridge), which had not been included in the final scope of work for the original Bridge project, and was not designed, built, or funded by the team that was responsible for the rest of the Golden Gate Bridge; the Toll Plaza Building (toll booth structures); the clock on the toll booth canopy (1949); the orthotropic steel plate roadbed installed to replace the original reinforced concrete roadway (1982-1985); as well as modern bus shelters, phone booths, light standards, and signs. In addition, during the early 1980s the North and South approach viaducts underwent a substantial seismic upgrade.¹¹

Overall, the Golden Gate Bridge has lost some historic integrity through the course of seventy years of operation, maintenance, and improvements. Nevertheless, the property retains its primary character-defining features, and the property clearly conveys its significance as an excellent example of the incorporation of architectural styling to 1930s state-of-the art engineering, as clarified by the updated inventory and evaluation provided in the HPSR recently prepared for the Physical Suicide Deterrent System Project (2008), and as recognized by the state, local, and federal historic preservation programs described therein.¹²

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¹⁰ Stahl, et al., The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007, 173.

¹¹ Caspar Mol, MacDonald Architects, "Caltrans Architectural Inventory and Evaluation Form for the Golden Gate Bridge," November 1993, 39-41; National Park Service, "National Historic Landmark Nomination for the Golden Gate Bridge," August 13, 1997, 9-10; Frank L. Stahl, Daniel E. Mohn, and Mary C. Currie, *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007* (San Francisco, CA: Golden Gate Bridge, Highway and Transportation District, 2007), 102, 122-144, 155-156, 170, 178, 180-182. This 2007 report, a supplement to *The Golden Gate Bridge, Report of the Chief Engineer, September 1937* by Joseph B. Strauss, provides a comprehensive history of the improvements and other modification to the Bridge since its completion in 1937.

¹² JRP Historical Consulting, LLC, "Historic Property Survey Report, Golden Gate Bridge Physical Suicide Deterrent System Project, City and County of San Francisco and County of Marin, Project 2006-B-17, 04-MRN-101-GGHT, Federal Project #: STPL-6003(030)," prepared for Golden Gate Bridge, Highway and Transportation District, May 2008.

5. APPLICATION OF THE CRITERIA OF ADVERSE EFFECT

5.1 Criteria of Adverse Effect

This FOE assesses whether the Golden Gate Bridge Moveable Median Barrier Project will have an adverse effect on the Golden Gate Bridge historic property. An adverse effect is an alteration to the characteristics of a historic property that qualify it for inclusion in or eligibility for the NRHP. Under NHPA Section 106, as codified in 36 CFR 800.4(d)(2), if there are historic properties which may be affected by a federal undertaking, the agency official shall assess adverse effects. Adverse effects will be analyzed in accordance with the Criteria of Adverse Effect defined in 36 CFR 800.5, below.

- (1) **Criteria of adverse effect** (36 CFR 800.5 (a)(1)). An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. 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.
- (2) **Examples of adverse effects**. Adverse effects on historic properties include, but are not limited to:
 - (i) Physical destruction of or damage to all or part of the property;
 - (ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines (see below);
 - (iii) Removal of the property from its historic location;
 - (iv) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
 - (v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;
 - (vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
 - (vii) Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.¹³

¹³ 36 CFR 800.5, "Assessment of Adverse Effects," incorporating amendments effective August 5, 2004.

5.2 Application of the Criteria of Adverse Effect

This section assesses the effects of the proposed Project on the Golden Gate Bridge historic property, which has been determined eligible for listing in the NRHP. The assessment provided below identifies the direct, indirect, and cumulative effects as defined in 36 CFR 800.5 (a)(2).

Summary of Effects on Golden Gate Bridge

Aspects of Historic Integrity	Project Effects			
Location	Not Adverse			
Design	Not Adverse			
Setting	Not Adverse			
Materials	Not Adverse			
Workmanship	Not Adverse			
Feeling	Not Adverse			
Association	Not Adverse			

None of the aspects of the Bridge's historic integrity will be adversely affected by the Project. The Project will not affect the Bridge's historic integrity of location, as it will not cause the structure to be moved.

The Project would not have a direct adverse effect on the Golden Gate Bridge historic property because the integrity of its original design, materials, and workmanship would not be diminished. Once installed along U.S. 101 across the Golden Gate Bridge, the MMB would rest, unattached, on the surface of the roadway, held in place by its own weight and friction. Additionally, the roadbed itself, an orthotropic steel plate installed to replace the original reinforced concrete roadway, is a modern element (1982-1985) and not a character-defining feature of the Bridge historic property. Likewise, the four toll booths on the south end of the Bridge and existing permanent median barrier and vegetated median strip north of the Bridge that would be removed to accommodate the MMB system are all modern, non-character-defining features. None of the Project elements, therefore, would alter the property's use or character-defining physical features.

Nor would the Project have an indirect adverse effect on the Golden Gate Bridge property. While the Project would introduce non-historic visual elements to the Golden Gate Bridge, this would not significantly diminish its integrity of setting, feeling, and association because the property will retain its overall aesthetic expression and historic sense of a particular period of time – specifically when it was constructed in the 1930s. Nor will the Project impact the physical environment surrounding the historic property. As shown in the visual simulations below (**Plates 7 through 18**), the MMB and its related elements (namely, the BTMs and three reconstructed toll booths) would be visible from various vantage points on and near the Bridge. However, the visual impact of these elements, particularly when compared to the overall scale of the Bridge structure, will be minimal. The barrier, which would be one foot wide and less than three feet tall, would be visible as a streamlined low solid wall running the length of the Bridge's roadway. The MMB would be visually subordinate to the dominant features of the Bridge, such as the two towers, suspension cables, trusses, and pedestrian walkways. Additionally, while the barrier

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would result in a minor increase in visual bulk, it would replace the visual clutter associated with the existing median barrier in areas where it would replace the yellow pylons.

Also, as shown in **Plates 12** and **14**, from the vantage point of a pedestrian or motorist crossing the Bridge, the barrier would partially block views of the roadway on the opposite side of the viewer. As discussed above, the roadway itself is not a contributing feature. The profile of the barrier is low enough that sightlines to the Bridge's character-defining features (i.e., suspension cables, pedestrian walkways, railings), as well as sightlines from the Bridge to the surrounding viewshed, would be unimpeded.

Finally, removal of four existing toll booths and reconstruction of three toll booths of the toll booth plaza and presence of the BTMs would not constitute an indirect adverse impact to the Bridge property's setting, feeling, or association. The BTMs, which would have a periodic presence on the Bridge during operations, and would be stored within the U.S. 101 right-of-way the remainder of the time, are roughly equivalent in size and shape to cargo trucks that cross the Bridge on a daily basis (**Plate 16**). While the new toll booths would be slightly (three feet) taller than the toll booths that they are intended to replace, overall the new construction would be compatible in both design and scale to the existing toll booth plaza (**Plates 17** and **18**). The visual presence of these new Project elements to the historic property would be virtually negligible, especially when compared to the overall massing of the Golden Gate Bridge and all of its contributing elements.¹⁴

Construction of the Project would not cause cumulative adverse effects to the Golden Gate 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 and the Seismic Retrofit Project for the Golden Gate Bridge were subject to Section 106 effects analysis and CEQA impacts analysis. The Seismic Retrofit Project, currently underway, 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 Golden Gate Bridge for listing in the NRHP, were identified for either project. The possible future project known as the Golden Gate Bridge Physical Suicide Deterrent System Project would cause an adverse effect to the Bridge, but because the MMB Project would not cause

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¹⁴ These findings are consistent with the Visual Impact Assessment prepared for this Project, which applies different evaluation criteria than this FOE, but nonetheless arrives at a similar conclusion: "As discussed in this document, the MMB, a new feature, would not be out of character or visually at odds with existing roadway elements and structures in the vicinity. The level of change to visual quality and character would be minor, minimizing any potential for considerable contribution to cumulative impacts...The proposed project's cumulative impact would be less than significant because proposed physical changes to the area would be minor and consistent with the existing features of the area." See: Barr, "Draft Visual Impact Assessment, Golden Gate Moveable Median Barrier Project," July 26, 2011, 64-65.

¹⁵ Frank L. Stahl, et al., 243-244; Donald MacDonald, MacDonald Architects, "Historic Property Survey Report, Finding of No Adverse Effect: Environmental Assessment of the Public Safety Railing Project" (March 1999), 1-2 and 6; Donald MacDonald and Caspar Mol, MacDonald Architects, "Historic Property Survey Report, Finding of No Adverse Effect for the Proposed Seismic Retrofit Project for the Golden Gate Bridge" (January 1995); Golden Gate Bridge, Highway and Transportation District, US Department of Transportation Federal Highway Administration, and California Department of Transportation, "Golden Gate Bridge Seismic and Wind Retrofit Project, Draft Environmental Assessment / Initial Study" (November 1995); District, "Seismic Retrofit," http://goldengatebridge.org/projects/seismic.php, updated June 2011.

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adverse effects, the MMB Project would have no cumulative effect on the Bridge property. SHPO concurred with the findings of the previous studies, and the previous determination that the Golden Gate Bridge is eligible for listing in the NRHP remains valid.¹⁶

No other reasonably foreseeable adverse effects of future projects have been identified.

In sum, the proposed Golden Gate Bridge Moveable Median Barrier Project would not alter, directly or indirectly, any of the characteristics of the Golden Gate Bridge historic property that qualify it for inclusion in the National Register. The undertaking, therefore, would not have an adverse affect on the property.

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¹⁶ JRP Historical Consulting, "Historic Property Survey Report, Golden Gate Bridge Physical Suicide Deterrent System Project," May 2008; Golden Gate Bridge, Highway & Transportation District, "Final Environmental Impact Report Released for Golden Gate Bridge Physical Suicide Deterrent System Project," January 22, 2010, accessed online on September 12, 2011, at Project website: http://goldengate.org/news/bridge/suicidebarrier_feir.php.



Plate 7. View from Marin Headlands, facing south (existing conditions)



Plate 8. View from Marin Headlands, facing south (visual simulation)



Plate 9. View from Vista Point, facing south (existing)



Plate 10. View from Vista Point, facing south (simulation)



Plate 11. View from pedestrian walkway along Bridge, facing southwest (existing)



Plate 12. View from pedestrian walkway along Bridge, facing southwest (simulation)



Plate 13. View while driving across Bridge, facing southeast (existing)



Plate 14. View while driving across Bridge, facing southeast (simulation).



Plate 15. View from toll plaza, facing northwest (existing)



Plate 16. View from toll plaza, facing northwest (simulation)



Plate 17. View of toll plaza from Round House Gift Center, facing south (existing)



Plate 18. View of toll plaza from Round House Gift Center, facing south (simulation)

6. ALTERNATIVES CONSIDERED BUT REJECTED

6.1 Background

As early as the 1980s, the concept of installing a moveable barrier on the Bridge has been analyzed by various entities. The District conducted an extensive study of a wider (two-foot-wide) MMB technology in the 1980s and, due to the unique characteristics and conditions represented by the Bridge and its approaches, concluded that installation of the proposed two foot wide MMB would be infeasible. With the emergence of a narrower one-foot wide barrier in 1996, the District immediately launched a comprehensive analysis that led to the conclusion that, with some operational trade-offs, a barrier will virtually eliminate crossover accidents. In 1999, the District initiated a preliminary engineering evaluation that assessed the technical and operational impacts that would result from the installation of a moveable barrier on the Bridge.¹⁷

6.2 Alternatives Development and Evaluation Process

In June 2010, AECOM prepared the "Draft Alternative Technology Comparison, Golden Gate Bridge Moveable Median Barrier Study," the purpose of which was to identify and evaluate alternative moveable barrier technologies that could be implemented on the Bridge, and recommend a preferred technology. The study presented nine options and evaluated them on the District's requirements and site constraints present for the installation of such a barrier system on the Golden Gate Bridge. The selected system must meet the following requirements for implementation on the Bridge:¹⁸

- **Flexibility:** The barrier needs to be able to switch to/from any of the following lane configurations: 4 southbound lanes and 2 northbound lanes; 3 southbound lanes and 3 northbound lanes; or 2 southbound lanes and 4 northbound lanes.
- Operations Feasibility: The barrier needs to quickly and efficiently shift the travel lane configuration (up to three times a day) into the configurations described above to accommodate the daily variations in traffic volumes between Marin and San Francisco.
- **Safety:** The barrier must satisfy the National Cooperative Highway Research Program Report 350 crash test.
- System Dimensions: The existing width of the Bridge deck (62 feet) limits the width available for the selected system. The barrier cannot exceed 12" without reducing travel lanes to unacceptably narrow widths. Barriers separating opposing directions of traffic should be at least 32" high to meet minimum height requirements specified in the Caltrans Standard Plans.
- Accuracy: The existing Bridge cross-section consists of two 11 foot outer lanes and four 10 foot inner lanes for a total of 62 feet from curb to curb. Installing a barrier on this cross section would reduce the lane widths; therefore, the lateral shift from one lane

¹⁷ Golden Gate Bridge, Highway & Transportation District, "Golden Gate Bridge Moveable Median Barrier Project Status Updates," January 2007 and August 2008, accessed online on September 12, 2011, at Project website: http://goldengatebridge.org/projects/MoveableMedianBarrier.php.

¹⁸ The following bullets provide a summary of the Bridge District's project requirements. For a full discussion, see: AECOM Transportation, "Draft Alternative Technology Comparison, Golden Gate Bridge Moveable Median Barrier Study, Prepared for the Golden Gate Bridge Highway and Transportation District, Federal Project Number STPL-6003(037)," June 30, 2010.

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- configuration to another requires a precise level of accuracy so the travel lanes on each side of the barrier remain as wide as possible.
- Lane Tapers: The barrier system installed on the Bridge must be able to perform the required lane tapers necessary to reduce travel lanes to the proper number of lanes available on the Bridge. One of the District's goals as part of this Project is to implement a technology that can also perform the lane taper in a safe manner that does not require exposing crew to traffic as currently occurs.
- **Emergency Operations:** The barrier system must not hinder the ability of emergency responders to access an accident, and in doing so, it must not compromise the safety of those responding to the accident.
- **Environmental Effects:** The barrier system must not have any significant adverse impacts to the environment.
- **Structural Performance:** The barrier system must not affect structural soundness of the Golden Gate Bridge.
- **Budget:** The barrier system must meet the Bridge, Highway and Transportation District's budget of \$25 million, which includes engineering, construction, management, and soft costs.

6.3 Alternatives Considered and Rejected

After researching several median barrier technologies, AECOM concluded that Alternative #1: Steel Reactive Tension System Quickchange Moveable Barrier (SRTS-12"QMB), the system contemplated for this study, is the only alternative that meets the flexibility, dimensional, and safety requirements for installation and operation on the Golden Gate Bridge. As summarized in the table below, none of the other alternatives met all the requirements for use on the Golden Gate Bridge.

Summary of Findings: Alternative Technology Comparison

System	Flexibility	Coperations Silving	Safes	System Dinone;	4cmacy	Lane Tabe	Emergency Operation	Environs Effects onnen	Structural Performa	Budger
ALTERNATIVE 1 12" Quickchange Moveable Barrier	~	~	~	~	~	~	~	~	~	V
ALTERNATIVE 2 13" Quickchange Moveable Barrier	~	~	~	×	~	~	~	~	~	V
ALTERNATIVE 3 18" Quickchange Moveable Barrier	~	~	~	×	~	~	~	~	~	/
ALTERNATIVE 4 24" Quickchange Moveable Barrier	~	~	~	×	~	~	~	~	~	V
ALTERNATIVE 5 Swiftgate attached to permanent barrier	×	×	/	~	/	~	×	~	V	V
ALTERNATIVE 6 Qwick Kurb	~	×	×	~	~	×	~	~	~	V
ALTERNATIVE 7 Low Profile	×	×	×	×	×	×	×	~	~	V
ALTERNATIVE 8 Road Runner	~	×	×	×	×	×	×	~		V
ALTERNATIVE 9 No Build	V	/	×	/	~	~	V	/	~	V

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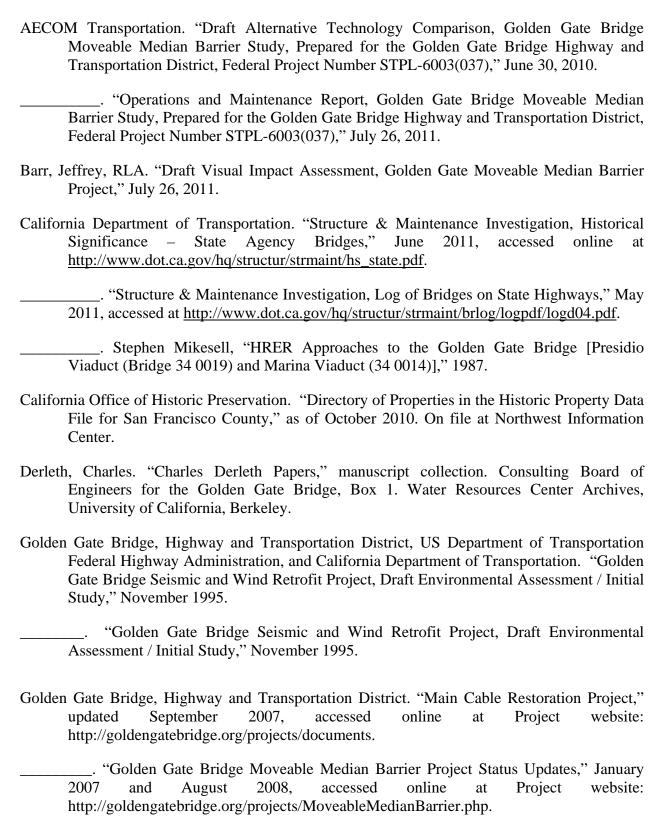
7. CONCLUSIONS

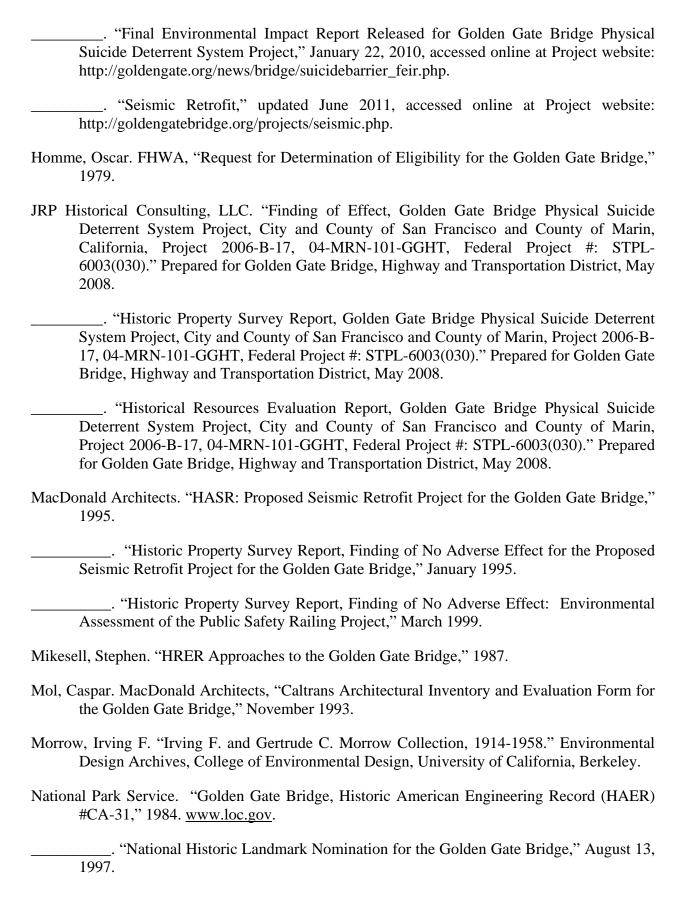
The District, in cooperation with Caltrans and the FHWA, is proposing the Golden Gate Bridge Moveable Median Barrier Project [Federal Project #: STPL-6003(037)]. The Project proposes installation of a moveable median barrier on the Golden Gate Bridge that would enhance traffic safety by providing a physical barrier to separate opposing directions of traffic.

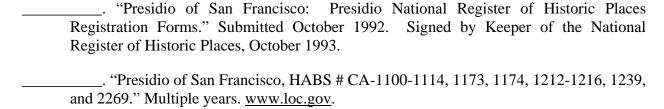
There is one historic property within the Project Area: the Golden Gate Bridge. In addition to the Bridge itself, this historic property also includes the Round House Gift Center, the Toll Plaza Undercrossing, and the southern approach road (also known as the Presidio Approach Road, or Doyle Drive) and its two viaducts, which are contributing elements. The main Golden Gate Bridge structure is Caltrans Bridge 27 0052, the undercrossing is Bridge 34 0069, and the southern approach viaducts are Bridges 34 0014 and 34 0019. The Golden Gate Bridge historic property was determined eligible for listing in the National Register of Historical Places in 1980, as described in **Section 4**.

Pursuant to Section 106 PA Stipulation X.B(1) and 36 CFR 800.5(c), the present study concludes that the proposed Golden Gate Bridge Moveable Median Barrier Project [Federal Project # STPL-6003(037)] would result in no adverse effect to the Golden Gate Bridge historic property. FHWA seeks SHPO concurrence with this finding.

8. REFERENCES







- San Francisco Planning Department, Landmarks Preservation Advisory Board, Golden Gate Bridge, case file for Landmark No. 222, 1999.
- Stahl, Frank L., and Daniel E. Mohn, and Mary C. Currie, *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 200.7* San Francisco, CA: Golden Gate Bridge, Highway and Transportation District, 2007.
- U. S. Department of the Interior. Secretary of the Interior. *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. Washington, D.C.: 1992. http://www.nps.gov/history/hps/tps/standguide/.

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9. PREPARERS' QUALIFICATIONS

Rebecca Meta Bunse, JRP Partner and MA in History (Public History, California State University, Sacramento, 1996), served as primary historian and manager for this Project. Ms. Bunse has more than twenty-one years experience working as a consulting historian on a wide variety of historical research and cultural resource management projects as a researcher, author, and project manager. Senior Historian Bryan Larson (MA Public History, California State University, Sacramento, 2005) prepared the report. Mr. Larson has been with JRP since 1998. Based their level of education and experience, Ms. Bunse and Mr. Larson qualify as historians and architectural historians under the United States Secretary of the Interior's Professional Qualification Standards (as defined in 36 CFR Part 61), and meet the Professionally Qualified Staff Standards for these disciplines in the Section 106 Programmatic Agreement (Section 106 PA), Attachment 1.

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APPENDICES

APPENDIX A: Figures

Project Location Map

Project Area Map



PROJECT LOCATION MAP

Figure 2: Limits of the Project Area



APPENDIX B: Project Correspondence

Caltrans Letter, March 23, 2010

Notification Letters and Distribution List

0129

DEPARTMENT OF TRANSPORTATION

111 Grand Avenue P.O. Box 23660 Oakland, CA 94623-0660 Tel: (510) 286-6371



Flex your power! Be energy efficient!

March 23, 2010

Jeffrey Y.F. Yee Golden Gate Bridge Highway and Transportation District P.O. Box 9000, Presidio Station San Francisco, Ca, 94129-0601

Your ref: STPL- 6003 (037)

Dear Mr. Jeffrey Yee:

Our office is in receipt of the Office of Cultural Resources' (OCRS) assessment on the Section 106 requirements for the Golden Gate Bridge Removable Median Barrier and has signed the Preliminary Environmental Studies (PES) Form. Similarly, the District Local Assistance Engineer (DLAE) and the Environmental Planner Designee have affixed their signatures to the document. The environmental scoping is therefore complete.

The following studies are required as per the PES:

- 1. Technical Study-Traffic Study (see attached letter regarding Traffic Study Notes for more information)
- 2. Technical Study- Water Quality (address in NESMI)
- 3. Technical Study-Biological Resources, Natural Environmental Studies Minimal Impact (NESMI)
- 4. Technical Memorandum- Equipment Staging (temporary and permanent staging areas as well as mapping for both)
- 5. Technical Study-Section 4(f), De minimis (for the Golden Gate Bridge and also address temporary occupancy for the for the Golden Gate Park)
- 6. Technical Study-Visual Impact Assessment (include simulations for the barriers and trucks)
- 7. Technical Study- Cultural Resources, Finding of Effect (See comments below)

 The required Finding of Effect report should explain the physical scope of the project and show that no properties other than the bridge itself will be affected. You will not need to produce an APE map. An APE map has specific requirements for signatures that are not necessary in this situation (the APE map defines the area to be studied for the HRER and the archaeological survey report, which are not needed for this project). The report, however, will need to include some form of mapping that shows this. You will not need to produce an HPSR or HRER.

Please prepare those studies at your earliest convenience and submit them to our office for review. If you have any questions regarding this letter, please contact Susan Tse at (510) 286-5743.

Sincerely,

Boris Deunert, Ph.D

3. Dermet

Senior Environmental Planner

Office of Local Assistance

cc: LA files

Distribution List for Historic Resources Interested Parties

Federal, State, & Local Government Agencies:

Carol Legard (Federal Highway Administration)
Katry Harris (National Park Service)
Katharine R. Kerr (Presidio Trust)
Advisory Council on Historic Preservation
Compliance Office
1100 Pennsylvania Avenue NW, Suite 809, Old Post Office Building Washington, DC 20004

Milford Wayne Donaldson, State Historic Preservation Officer California Office of Historic Preservation 1725 23rd Street # 100 Sacramento, CA 95816

Abby Sue, Acting Chief of Cultural Resources Golden Gate National Recreation Area National Park Service Fort Mason, Bldg. 201 San Francisco, CA 94123

Craig Middleton, Executive Director **The Presidio Trust** 34 Graham Street PO Box 29052 San Francisco, CA 94129

Robbyn L. Jackson, Chief of Cultural Resources & Museum Management National Park Service, Pacific West Region Office 1111 Jackson St., Ste. 700 Oakland, CA 94607

Tilly Chang, Deputy Director for Planning Glenn Davis, Chair, Citizens Advisory Committee **San Francisco County Transportation Authority** 100 Van Ness Ave, 26th floor San Francisco, CA 94102

Tina Tam, Senior Preservation Planner Tim Frye, Acting Preservation Coordinator San Francisco Planning Department Historic Preservation Commission 1650 Mission Street, Suite 400 San Francisco, CA 94103

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David Alumbaugh, Manager Joshua Switzky, Built Environment Lead San Francisco Planning Department City Design Group 1650 Mission Street, Suite 400 San Francisco, CA 94103

Brian Crawford, Director

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San Rafael, CA 94903

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American Society of Civil Engineering Historic Civil Engineering Landmark Program Carol Reese 1801 Alexander Bell Drive Reston, VA 20191-4400

Anne T. Kent California Room Civic Center Branch, Marin County Free Library 3501 Civic Center Drive, Room 427 San Rafael, CA 94903

Art Deco Society of California 100 Bush Street, Suite 511 San Francisco, CA 94104

Christopher Layton, President California Heritage Council P.O. Box 475046 San Francisco, CA 94147

Mary Morganti, Interim Executive Director California Historical Society 678 Mission Street San Francisco, CA 94105

Cindy Heitzman, Executive Director California Preservation Foundation 5 Third St., Ste 424 San Francisco, CA 94103

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Alison Moore, Archivist

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150 Van Ness Ave.

San Francisco. CA 94102

Gretchen Hilyard, President **DOCOMOMO US/Northern California**P.O. Box 29226

San Francisco, CA 94129-0226

Fort Point & Presidio Historical Association

P.O. Box 29163, Presidio Station San Francisco, CA 94129

Mark Buell, Chair **Golden Gate National Parks Conservancy** Building 201, Fort Mason San Francisco, CA 94102

Marin Heritage

P.O. Box 1432 San Rafael CA 94915

Anthea M. Hartig, Ph.D., Director Western Office, The Hearst Building **National Trust for Historic Preservation** 5 Third Street, Suite 707 San Francisco, CA 94103

Northern California Chapter Society of Architectural Historians

c/o Rich Sucre, Treasurer 1000 Sansome Street, Ste. 200 San Francisco, CA 94111

San Francisco Architectural Heritage

2007 Franklin Street San Francisco, CA 94109

Will Travis, Executive Director Joseph LaClair, Chief Planner **San Francisco Bay Conservation and Development Commission** 50 California Street, Suite 2600 San Francisco, CA 94111

San Francisco History Association

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Kurt Nystrom, Chief Operating Officer and Chief Financial Officer San Francisco Museum and Historical Society PO Box 420470
San Francisco, CA 94142

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Carol Legard (Federal Highway Administration)
Katry Harris (National Park Service)
Katharine R. Kerr (Presidio Trust)
Advisory Council on Historic Preservation
Compliance Office
1100 Pennsylvania Avenue NW, Suite 809, Old Post Office Building
Washington, DC 20004

Dear Sir or Madam:

The Golden Gate Bridge, Highway and Transportation District (District) is conducting a study of its proposed Golden Gate Bridge Moveable Median Barrier Project (Project) [Federal Project No. STPL-6003(037)]. The proposed Moveable Median Barrier (MMB) would be located along U.S. Highway 101 and extend across the 1.7-mile long Golden Gate Bridge (Bridge) above San Francisco Bay, between the City and County of San Francisco and Marin County. The District, in cooperation with the Federal Highway Administration and California Department of Transportation, is preparing *Environmental Studies and Preliminary Design for a Moveable Median Barrier on the Golden Gate Bridge* in accordance with the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and other applicable laws and regulations.

The purpose of the Project is to enhance traffic safety along the Bridge by providing a physical barrier to separate opposing directions of traffic. Currently, northbound (NB) and southbound (SB) traffic along the Bridge is separated by 19-inch tall, 4-inch diameter yellow hollow plastic tubes placed 50 feet and 25 feet apart on tangent and curve sections, respectively. These tubes serve to delineate opposing directions of traffic, but provide no physical protection against crossover collisions. Installation of the MMB would virtually eliminate crossover "head on" accidents on this highway facility.

The District is evaluating one "build" and one "no-build" alternative for the proposed Project. For the build alternative, the District proposes installing a barrier made up of a series of interlinked high strength steel structures filled with concrete, each unit of which measures approximately 39"x12"x32" (LxWxH). The units would have a 24"-wide steel base with four rubber feet and rest on the surface of the roadway. At completion of the Project, the semi-rigid barrier would extend 3.1 miles and could be used in 2 NB / 4 SB, 3 NB / 3 SB, and 4 NB / 2 SB lane configurations. The use of a Barrier Transfer Machine (BTM) is also proposed as part of the Project. The BTM, which would be approximately 9.5 feet wide and 51 feet long, is referred to as a "zipper truck" because the barrier is moved by one lane as the truck travels along the

median barrier laterally by one lane. Once the barrier is in place, the BTMs would be stored within the U.S. 101 right-of way. The Project will also involve modifications to the Toll Plaza. The four existing eastern most booths will be removed and three new booths reconstructed. The lane widths and heights of the three booths will increase slightly and the booths will be modified for all electronic tolling. The form of the modified Toll Plaza will remain the same.

The no-build alternative represents the future year conditions if no other actions are taken in the study area beyond what is already in place; it is the baseline condition against which all other alternatives are compared. The no-build alternative would continue the existing hollow plastic tube traffic separation measures.

The District has formed a consultant team to perform engineering and environmental technical studies to meet various state and federal environmental requirements. JRP Historical Consulting, LLC, is part of this team and is preparing a Finding of Effect (FOE) to assess the potential for the Project to impact historic architectural properties in the study area. Historic properties are potentially eligible, determined eligible, or listed in the National Register of Historic Places. The Bridge and its contributing elements have been determined eligible for listing in the National Register. The Bridge is the only historic property in the study area, which is confined to the U.S. Highway 101 right-of-way (see enclosed Project Area map). The purpose of the FOE is to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, by applying the Criteria of Adverse Effect, set forth in Title 36 Code of Federal Regulations (CFR) Part 800.5, and following the guidelines for documentation in 36 CFR 800.11.

We are contacting your organization as part of the Section 106 process (36 CFR 800.2). If you or your organization has any concerns regarding this historical resource, please respond in writing to me at the address above citing your concerns within the next thirty days. For additional information, please call me at 415-923-2023, or visit the Project website at http://goldengatebridge.org/projects/MoveableMedianBarrier.php.

Sincerely,

Jeffrey Y. Lee, PE Project Manager

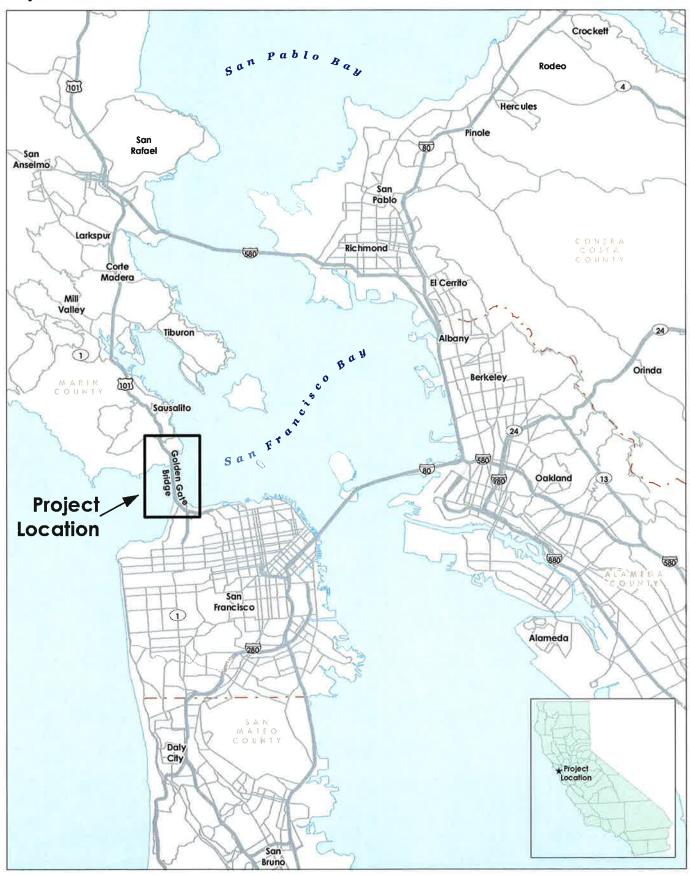
Enclosure(s): Project Location Map

Figure 1: Project Location

2.5

5 Miles

Golden Gate Bridge Moveable Median Barrier





Margie O'Driscoll, Executive Director American Institute of Architects Preservation Committee 130 Sutter Street, Suite 600 San Francisco, CA 94102

Dear Sir or Madam:

The Golden Gate Bridge, Highway and Transportation District (District) is conducting a study of its proposed Golden Gate Bridge Moveable Median Barrier Project (Project) [Federal Project No. STPL-6003(037)]. The proposed Moveable Median Barrier (MMB) would be located along U.S. Highway 101 and extend across the 1.7-mile long Golden Gate Bridge (Bridge) above San Francisco Bay, between the City and County of San Francisco and Marin County. The District, in cooperation with the Federal Highway Administration and California Department of Transportation, is preparing *Environmental Studies and Preliminary Design for a Moveable Median Barrier on the Golden Gate Bridge* in accordance with the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and other applicable laws and regulations.

The purpose of the Project is to enhance traffic safety along the Bridge by providing a physical barrier to separate opposing directions of traffic. Currently, northbound (NB) and southbound (SB) traffic along the Bridge is separated by 19-inch tall, 4-inch diameter yellow hollow plastic tubes placed 50 feet and 25 feet apart on tangent and curve sections, respectively. These tubes serve to delineate opposing directions of traffic, but provide no physical protection against crossover collisions. Installation of the MMB would virtually eliminate crossover "head on" accidents on this highway facility.

The District is evaluating one "build" and one "no-build" alternative for the proposed Project. For the build alternative, the District proposes installing a barrier made up of a series of interlinked high strength steel structures filled with concrete, each unit of which measures approximately 39"x12"x32" (LxWxH). The units would have a 24"-wide steel base with four rubber feet and rest on the surface of the roadway. At completion of the Project, the semi-rigid barrier would extend 3.1 miles and could be used in 2 NB / 4 SB, 3 NB / 3 SB, and 4 NB / 2 SB lane configurations. The use of a Barrier Transfer Machine (BTM) is also proposed as part of the Project. The BTM, which would be approximately 9.5 feet wide and 51 feet long, is referred to as a "zipper truck" because the barrier is moved by one lane as the truck travels along the roadway. Two BTMs would be required as part of the Project, as each machine moves the median barrier laterally by one lane. Once the barrier is in place, the BTMs would be stored

The four existing eastern most booths will be removed and three new booths reconstructed. The lane widths and heights of the three booths will increase slightly and the booths will be modified for all electronic tolling. The form of the modified Toll Plaza will remain the same.

The no-build alternative represents the future year conditions if no other actions are taken in the study area beyond what is already in place; it is the baseline condition against which all other alternatives are compared. The no-build alternative would continue the existing hollow plastic tube traffic separation measures.

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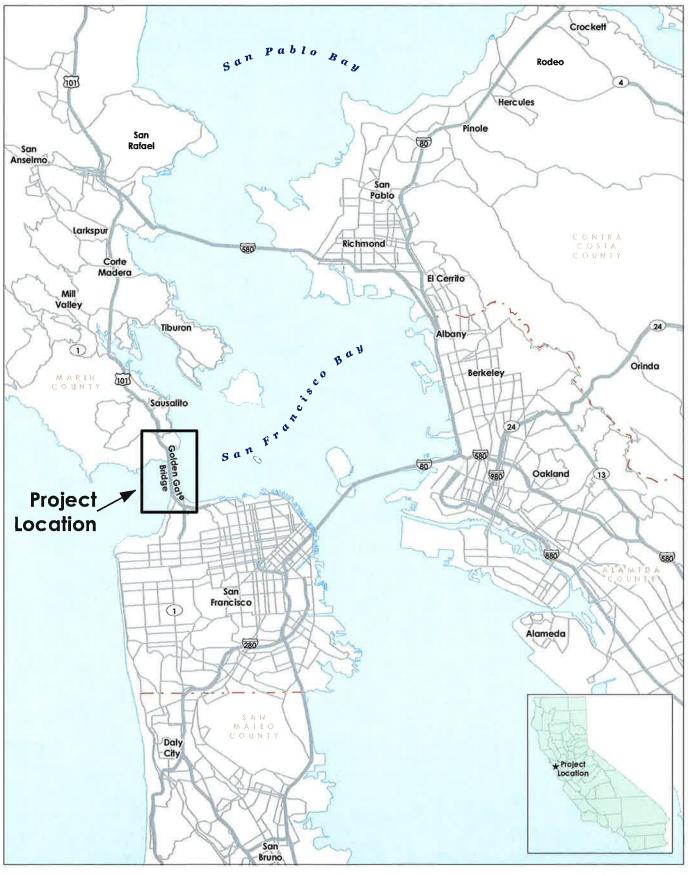
Sincerely,

Jeffrey Y. Lee, PE Project Manager

Enclosure(s): Project Location Map

Figure 1: Project Location

Golden Gate Bridge Moveable Median Barrier





American Society of Civil Engineering Historic Civil Engineering Landmark Program Carol Reese 1801 Alexander Bell Drive Reston, VA 20191-4400

Dear Sir or Madam:

The Golden Gate Bridge, Highway and Transportation District (District) is conducting a study of its proposed Golden Gate Bridge Moveable Median Barrier Project (Project) [Federal Project No. STPL-6003(037)]. The proposed Moveable Median Barrier (MMB) would be located along U.S. Highway 101 and extend across the 1.7-mile long Golden Gate Bridge (Bridge) above San Francisco Bay, between the City and County of San Francisco and Marin County. The District, in cooperation with the Federal Highway Administration and California Department of Transportation, is preparing *Environmental Studies and Preliminary Design for a Moveable Median Barrier on the Golden Gate Bridge* in accordance with the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and other applicable laws and regulations.

The purpose of the Project is to enhance traffic safety along the Bridge by providing a physical barrier to separate opposing directions of traffic. Currently, northbound (NB) and southbound (SB) traffic along the Bridge is separated by 19-inch tall, 4-inch diameter yellow hollow plastic tubes placed 50 feet and 25 feet apart on tangent and curve sections, respectively. These tubes serve to delineate opposing directions of traffic, but provide no physical protection against crossover collisions. Installation of the MMB would virtually eliminate crossover "head on" accidents on this highway facility.

The District is evaluating one "build" and one "no-build" alternative for the proposed Project. For the build alternative, the District proposes installing a barrier made up of a series of interlinked high strength steel structures filled with concrete, each unit of which measures approximately 39"x12"x32" (LxWxH). The units would have a 24"-wide steel base with four rubber feet and rest on the surface of the roadway. At completion of the Project, the semi-rigid barrier would extend 3.1 miles and could be used in 2 NB / 4 SB, 3 NB / 3 SB, and 4 NB / 2 SB lane configurations. The use of a Barrier Transfer Machine (BTM) is also proposed as part of the Project. The BTM, which would be approximately 9.5 feet wide and 51 feet long, is referred to as a "zipper truck" because the barrier is moved by one lane as the truck travels along the roadway. Two BTMs would be required as part of the Project, as each machine moves the median barrier laterally by one lane. Once the barrier is in place, the BTMs would be stored

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Jeffrey Y. Lee, PE Project Manager

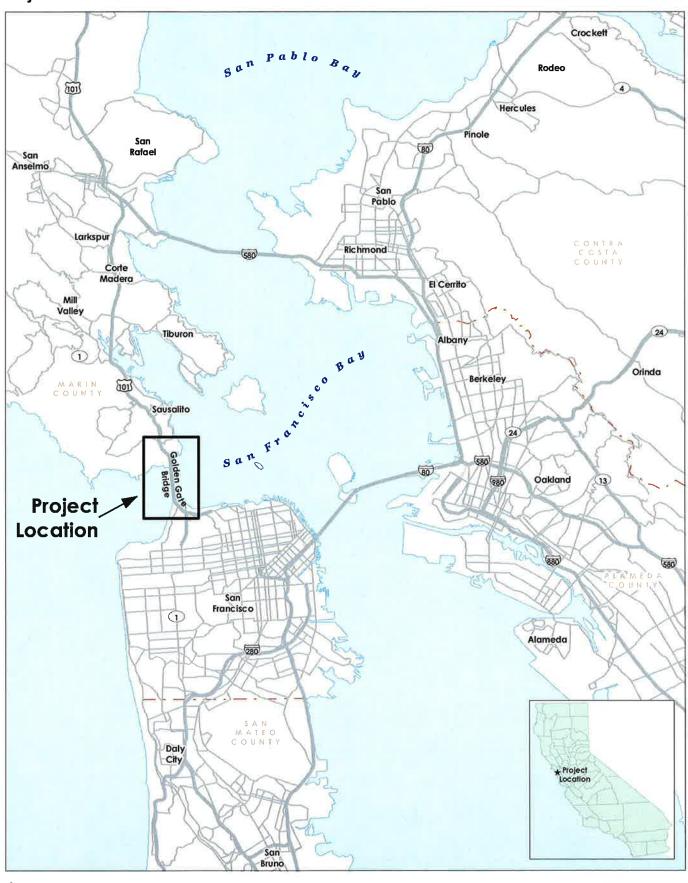
Enclosure(s): Project Location Map

Figure 1: Project Location

2.5

5 Miles

Golden Gate Bridge Moveable Median Barrier





Anne T. Kent California Room Civic Center Branch, Marin County Free Library 3501 Civic Center Drive, Room 427 San Rafael, CA 94903

Dear Sir or Madam:

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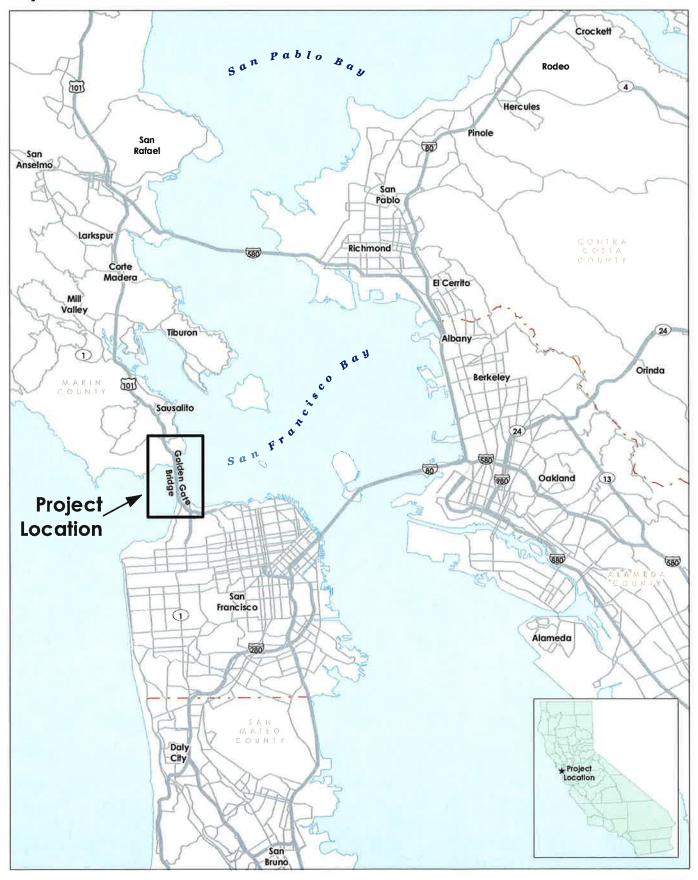
Enclosure(s): Project Location Map

Figure 1: Project Location

2.5

5 Miles

Golden Gate Bridge Moveable Median Barrier





Art Deco Society of California 100 Bush Street, Suite 511 San Francisco, CA 94104

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Jeffrey Y. Lee, PE Project Manager

Enclosure(s): Project Location Map

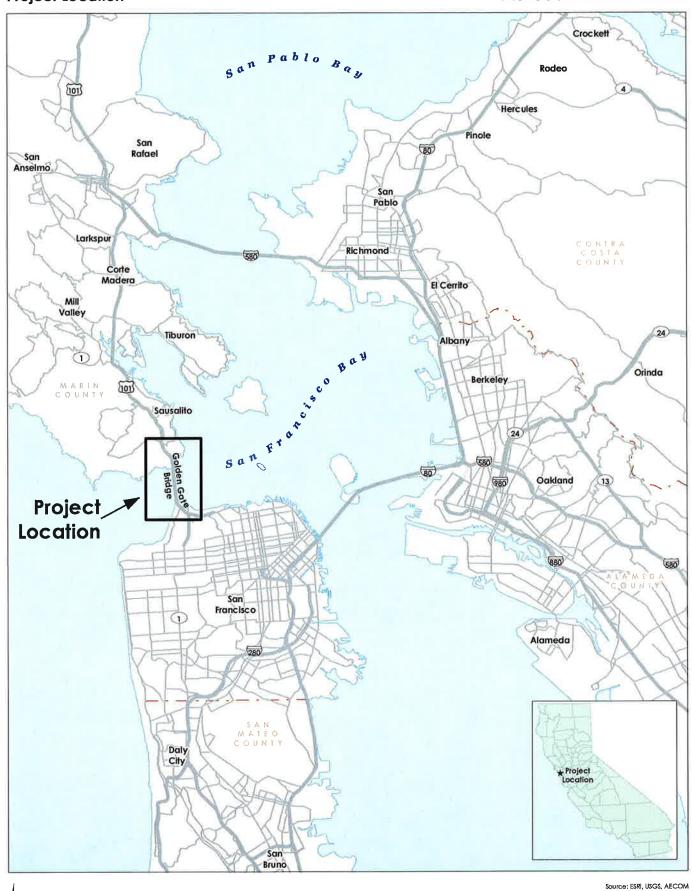
Figure 1: Project Location

2.5

5 Miles

Golden Gate Bridge Moveable Median Barrier

06/2010





Christopher Layton, President California Heritage Council P.O. Box 475046 San Francisco, CA 94147

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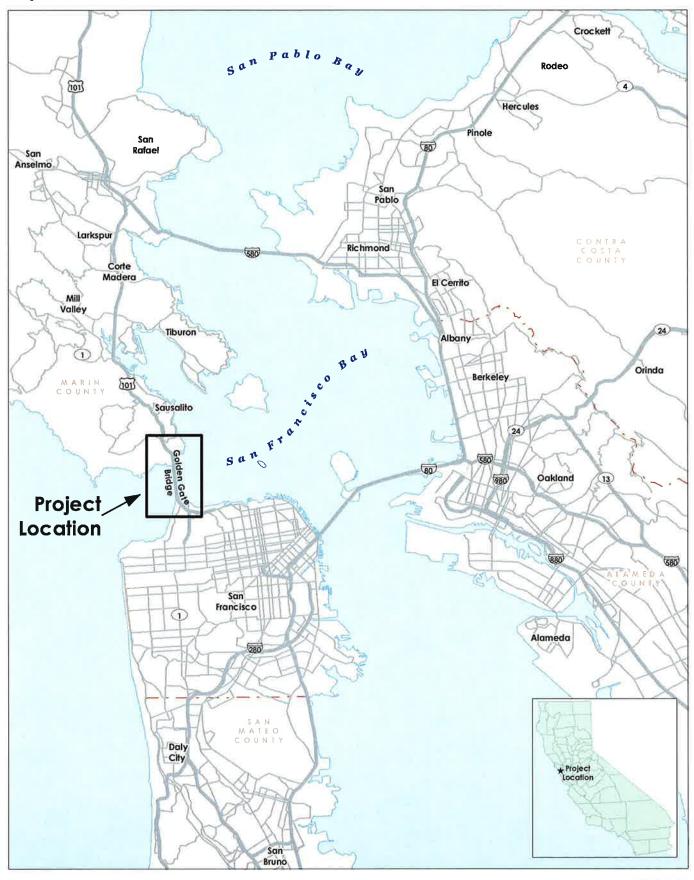
Enclosure(s): Project Location Map

Figure 1: Project Location

2.5

5 Mlles

Golden Gate Bridge Moveable Median Barrier





Mary Morganti, Interim Executive Director California Historical Society 678 Mission Street
San Francisco, CA 94105

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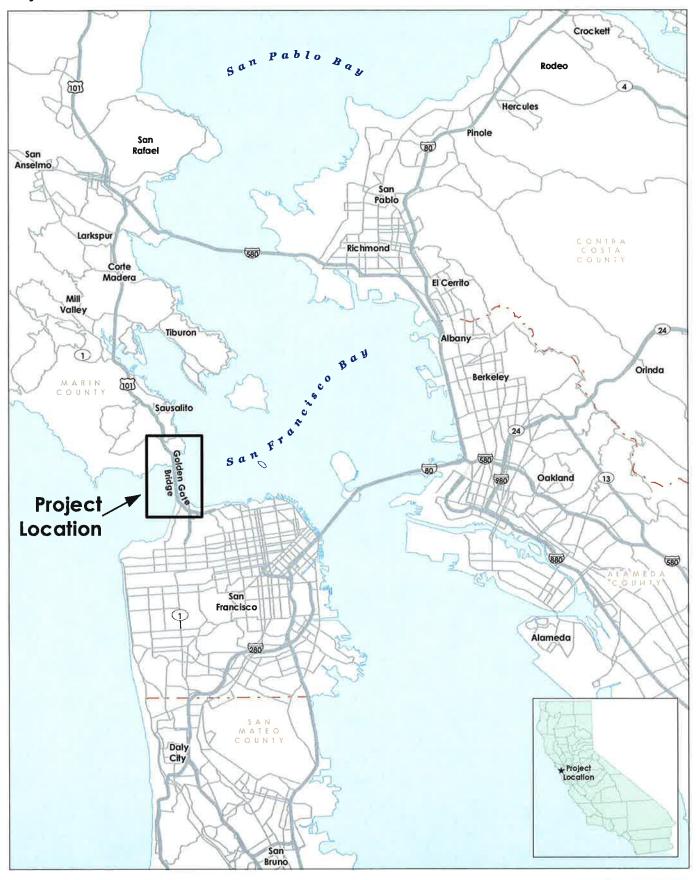
Sincefely,

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Enclosure(s): Project Location Map

Figure 1: Project Location

Golden Gate Bridge Moveable Median Barrier



5 Miles

2.5



Milford Wayne Donaldson, State Historic Preservation Officer California Office of Historic Preservation 1725 23rd Street # 100 Sacramento, CA 95816

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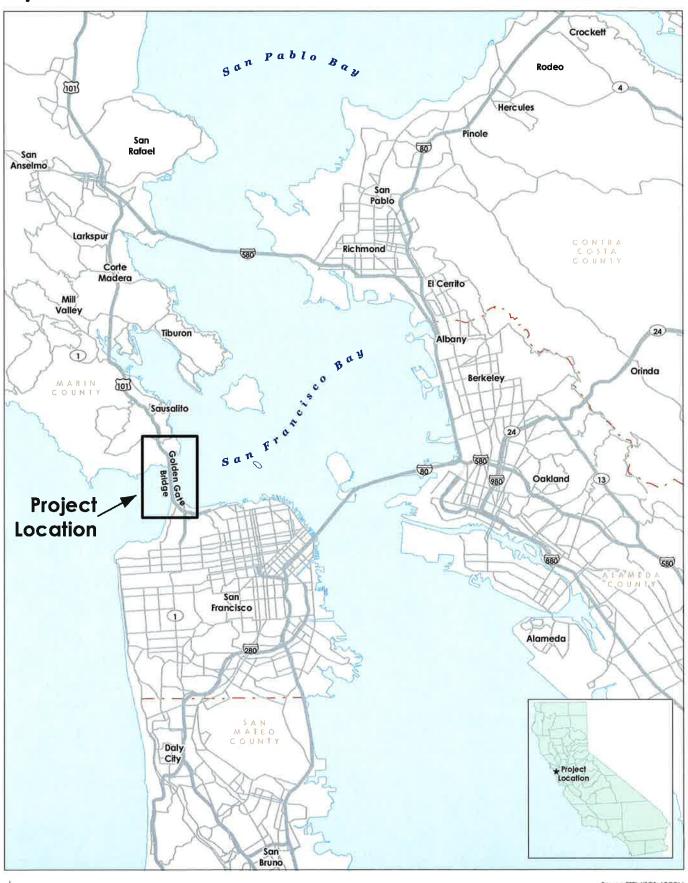
Enclosure(s): Project Location Map

Figure 1: Project Location

2.5

5 Mles

Golden Gate Bridge Moveable Median Barrier





Cindy Heitzman, Executive Director California Preservation Foundation 5 Third St., Ste 424 San Francisco, CA 94103

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We are contacting your organization as part of the Section 106 process (36 CFR 800.2). If you or your organization has any concerns regarding this historical resource, please respond in writing to me at the address above citing your concerns within the next thirty days. For additional information, please call me at 415-923-2023, or visit the Project website at http://goldengatebridge.org/projects/MoveableMedianBarrier.php.

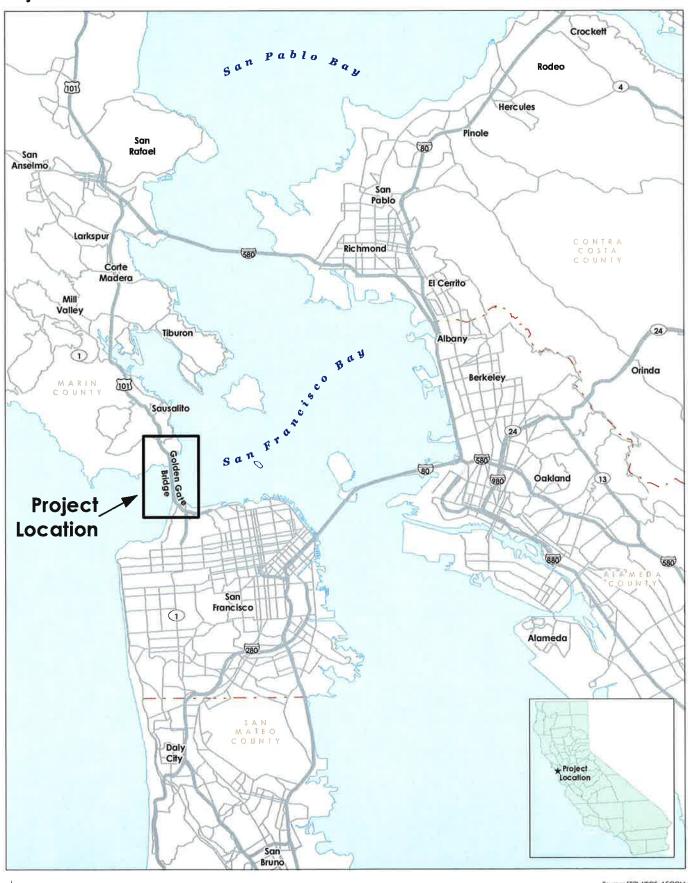
Sincefely,

Jeffrey Y. Lee, PE Project Manager

Enclosure(s): Project Location Map

Figure 1: Project Location

Golden Gate Bridge Moveable Median Barrier



5 Mlles

2.5



Brian Crawford, Director County of Marin Community Development Agency 3501 Civic Center Dr., Rm #308 San Rafael, CA 94903

Dear Sir or Madam:

The Golden Gate Bridge, Highway and Transportation District (District) is conducting a study of its proposed Golden Gate Bridge Moveable Median Barrier Project (Project) [Federal Project No. STPL-6003(037)]. The proposed Moveable Median Barrier (MMB) would be located along U.S. Highway 101 and extend across the 1.7-mile long Golden Gate Bridge (Bridge) above San Francisco Bay, between the City and County of San Francisco and Marin County. The District, in cooperation with the Federal Highway Administration and California Department of Transportation, is preparing *Environmental Studies and Preliminary Design for a Moveable Median Barrier on the Golden Gate Bridge* in accordance with the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and other applicable laws and regulations.

The purpose of the Project is to enhance traffic safety along the Bridge by providing a physical barrier to separate opposing directions of traffic. Currently, northbound (NB) and southbound (SB) traffic along the Bridge is separated by 19-inch tall, 4-inch diameter yellow hollow plastic tubes placed 50 feet and 25 feet apart on tangent and curve sections, respectively. These tubes serve to delineate opposing directions of traffic, but provide no physical protection against crossover collisions. Installation of the MMB would virtually eliminate crossover "head on" accidents on this highway facility.

The District is evaluating one "build" and one "no-build" alternative for the proposed Project. For the build alternative, the District proposes installing a barrier made up of a series of interlinked high strength steel structures filled with concrete, each unit of which measures approximately 39"x12"x32" (LxWxH). The units would have a 24"-wide steel base with four rubber feet and rest on the surface of the roadway. At completion of the Project, the semi-rigid barrier would extend 3.1 miles and could be used in 2 NB / 4 SB, 3 NB / 3 SB, and 4 NB / 2 SB lane configurations. The use of a Barrier Transfer Machine (BTM) is also proposed as part of the Project. The BTM, which would be approximately 9.5 feet wide and 51 feet long, is referred to as a "zipper truck" because the barrier is moved by one lane as the truck travels along the roadway. Two BTMs would be required as part of the Project, as each machine moves the median barrier laterally by one lane. Once the barrier is in place, the BTMs would be stored

The four existing eastern most booths will be removed and three new booths reconstructed. The lane widths and heights of the three booths will increase slightly and the booths will be modified for all electronic tolling. The form of the modified Toll Plaza will remain the same.

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Jeffrey Y. Lee, PE Project Manager

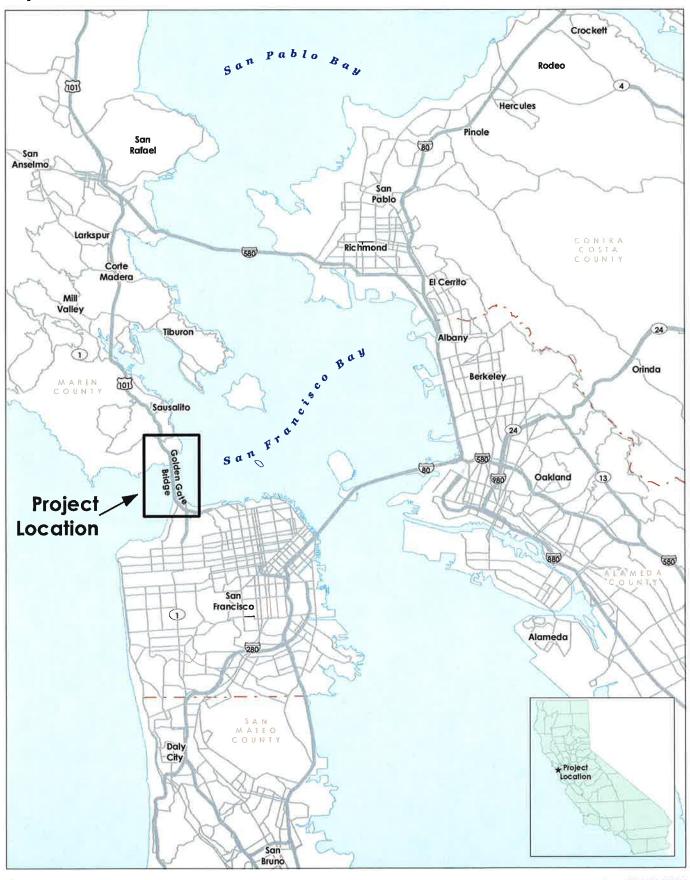
Enclosure(s): Project Location Map

Figure 1: Project Location

2.5

5 Mlles

Golden Gate Bridge Moveable Median Barrier





Alison Moore, Archivist CSAA Archives & Historical Services 150 Van Ness Ave. San Francisco, CA 94102

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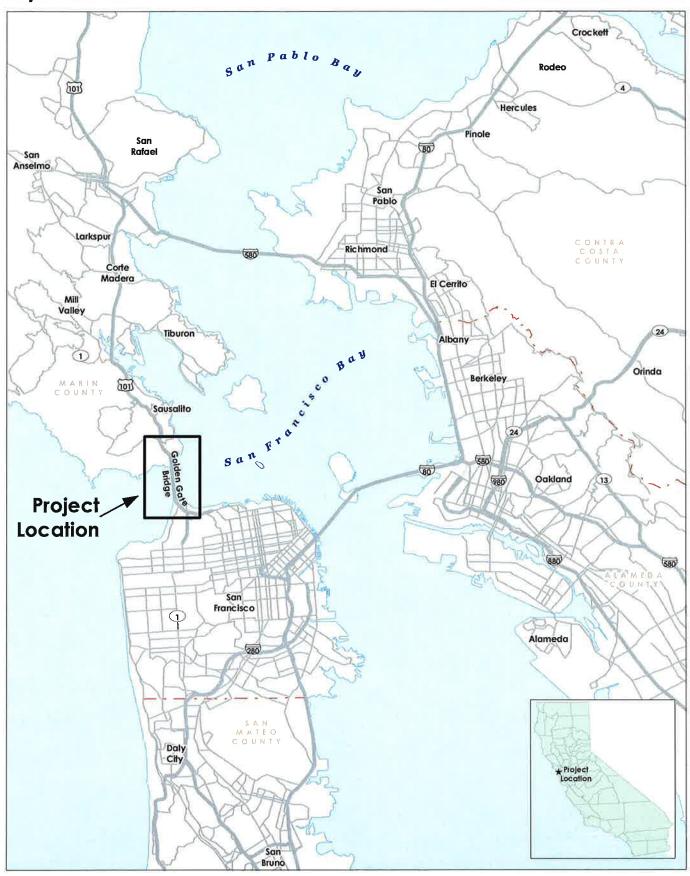
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Jeffrey Y. Lee, PE Project Manager

Enclosure(s): Project Location Map

Figure 1: Project Location

Golden Gate Bridge Moveable Median Barrier





Gretchen Hilyard, President **DOCOMOMO US/Northern California**P.O. Box 29226

San Francisco, CA 94129-0226

Dear Sir or Madam:

The Golden Gate Bridge, Highway and Transportation District (District) is conducting a study of its proposed Golden Gate Bridge Moveable Median Barrier Project (Project) [Federal Project No. STPL-6003(037)]. The proposed Moveable Median Barrier (MMB) would be located along U.S. Highway 101 and extend across the 1.7-mile long Golden Gate Bridge (Bridge) above San Francisco Bay, between the City and County of San Francisco and Marin County. The District, in cooperation with the Federal Highway Administration and California Department of Transportation, is preparing *Environmental Studies and Preliminary Design for a Moveable Median Barrier on the Golden Gate Bridge* in accordance with the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and other applicable laws and regulations.

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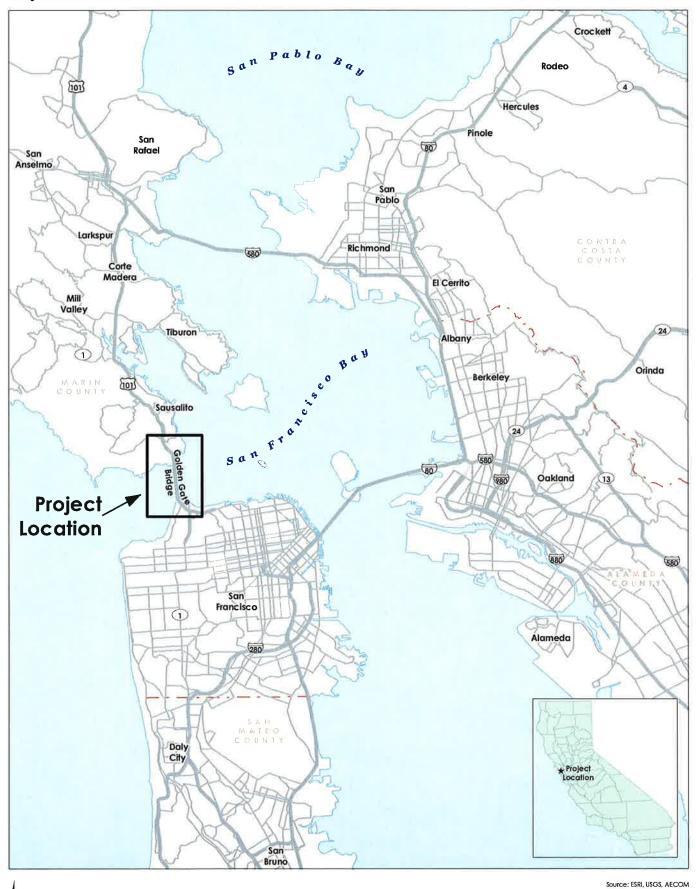
Sincefely,

Jeffrey Y. Lee, PE Project Manager

Enclosure(s): Project Location Map

Figure 1: Project Location

Golden Gate Bridge Moveable Median Barrier





Fort Point & Presidio Historical Association P.O. Box 29163, Presidio Station San Francisco, CA 94129

Dear Sir or Madam:

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Jeffrey Y. Lee, PE Project Manager

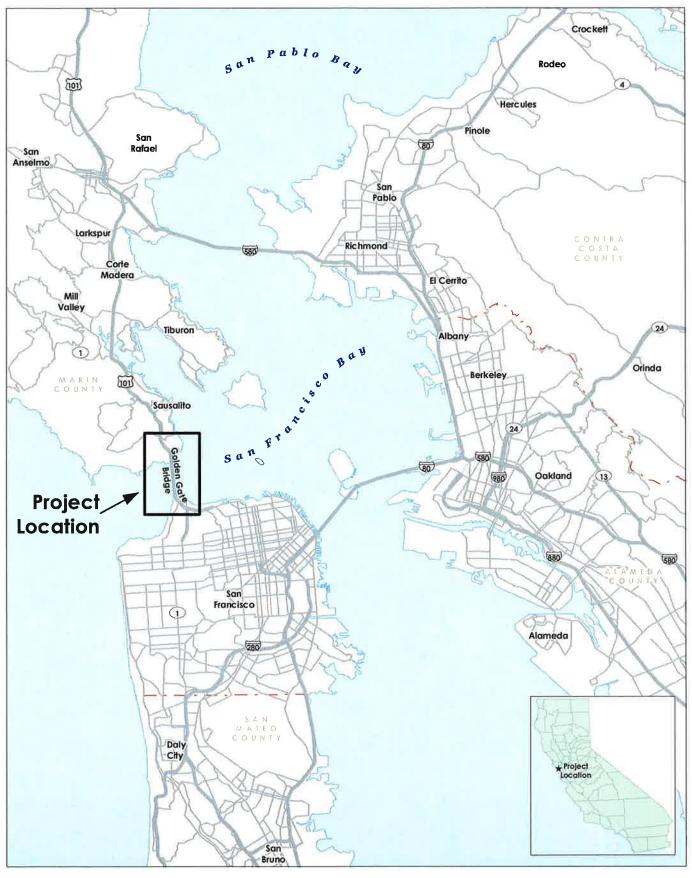
Enclosure(s): Project Location Map

Figure 1: Project Location

2.5

5 Miles

Golden Gate Bridge Moveable Median Barrier





Mark Buell, Chair **Golden Gate National Parks Conservancy** Building 201, Fort Mason San Francisco, CA 94102

Dear Sir or Madam:

The Golden Gate Bridge, Highway and Transportation District (District) is conducting a study of its proposed Golden Gate Bridge Moveable Median Barrier Project (Project) [Federal Project No. STPL-6003(037)]. The proposed Moveable Median Barrier (MMB) would be located along U.S. Highway 101 and extend across the 1.7-mile long Golden Gate Bridge (Bridge) above San Francisco Bay, between the City and County of San Francisco and Marin County. The District, in cooperation with the Federal Highway Administration and California Department of Transportation, is preparing *Environmental Studies and Preliminary Design for a Moveable Median Barrier on the Golden Gate Bridge* in accordance with the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and other applicable laws and regulations.

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The four existing eastern most booths will be removed and three new booths reconstructed. The lane widths and heights of the three booths will increase slightly and the booths will be modified for all electronic tolling. The form of the modified Toll Plaza will remain the same.

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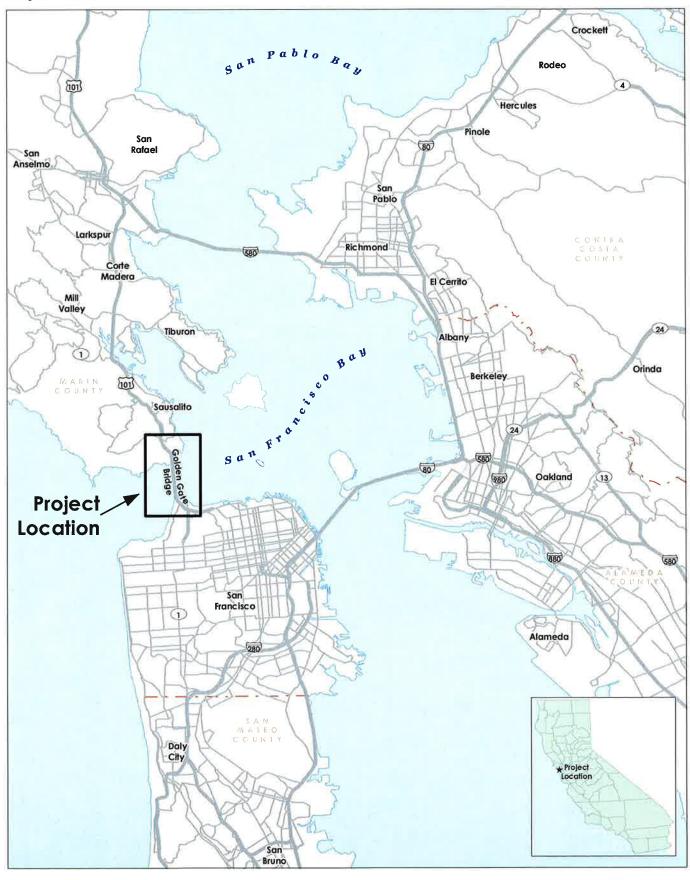
Sincefely,

Jeffrey Y. Lee, PE Project Manager

Enclosure(s): Project Location Map

Figure 1: Project Location

Golden Gate Bridge Moveable Median Barrier



5 Miles

Source: ESRI, USGS, AECOM



Abby Sue, Acting Chief of Cultural Resources Golden Gate National Recreation Area National Park Service Fort Mason, Bldg. 201 San Francisco, CA 9412

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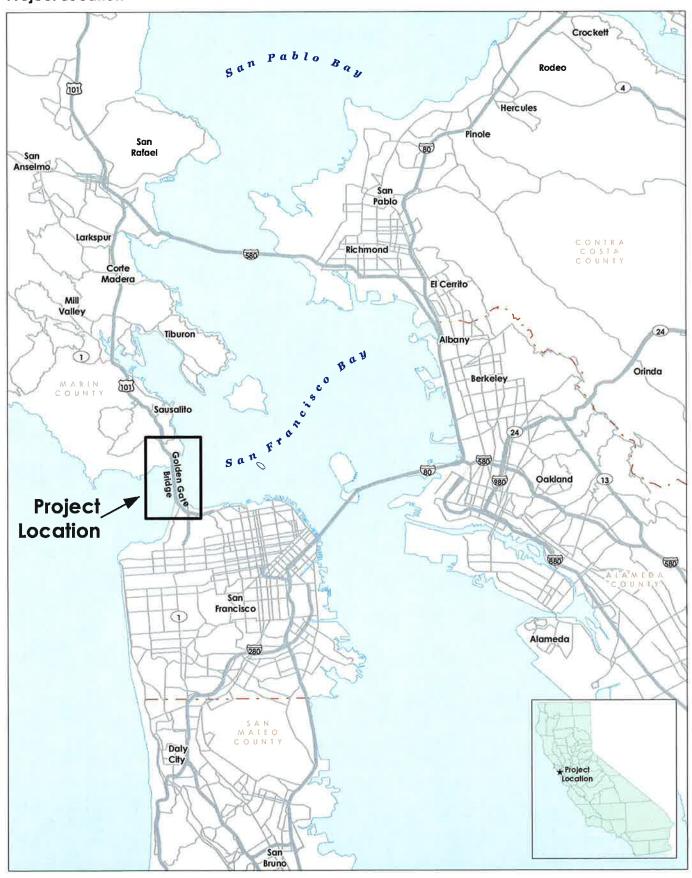
Enclosure(s): Project Location Map

Figure 1: Project Location

2.5

5 Miles

Golden Gate Bridge Moveable Median Barrier





Marin Heritage P.O. Box 1432 San Rafael CA 94915

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Sincefely,

Jeffrey Y. Lee, PE Project Manager

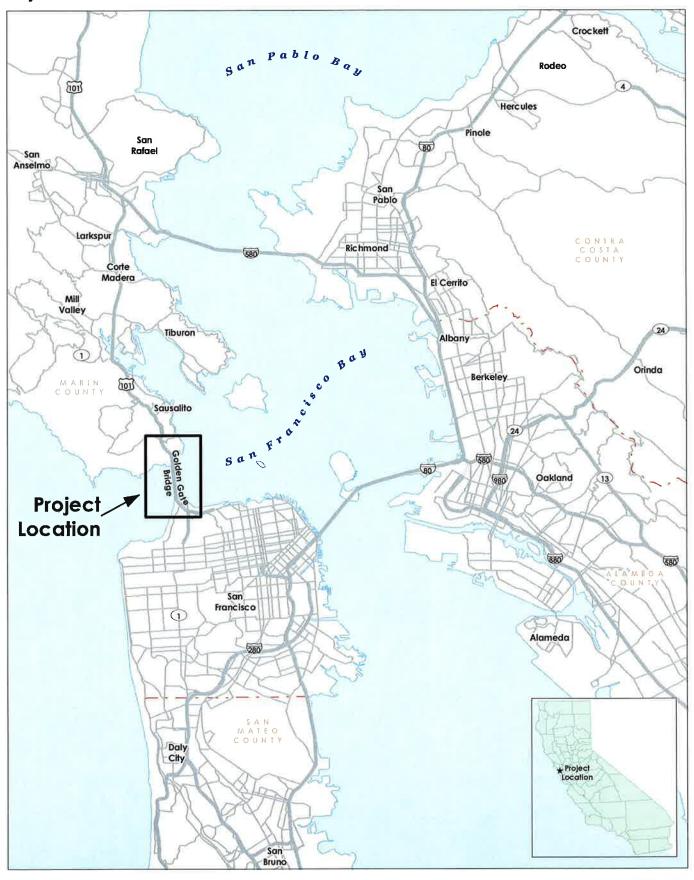
Enclosure(s): Project Location Map

Figure 1: Project Location

2.5

5 Miles

Golden Gate Bridge Moveable Median Barrier





Robbyn L. Jackson, Chief of Cultural Resources & Museum Management National Park Service, Pacific West Region Office 1111 Jackson St., Ste. 700 Oakland, CA 94607

Dear Sir or Madam:

The Golden Gate Bridge, Highway and Transportation District (District) is conducting a study of its proposed Golden Gate Bridge Moveable Median Barrier Project (Project) [Federal Project No. STPL-6003(037)]. The proposed Moveable Median Barrier (MMB) would be located along U.S. Highway 101 and extend across the 1.7-mile long Golden Gate Bridge (Bridge) above San Francisco Bay, between the City and County of San Francisco and Marin County. The District, in cooperation with the Federal Highway Administration and California Department of Transportation, is preparing *Environmental Studies and Preliminary Design for a Moveable Median Barrier on the Golden Gate Bridge* in accordance with the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and other applicable laws and regulations.

The purpose of the Project is to enhance traffic safety along the Bridge by providing a physical barrier to separate opposing directions of traffic. Currently, northbound (NB) and southbound (SB) traffic along the Bridge is separated by 19-inch tall, 4-inch diameter yellow hollow plastic tubes placed 50 feet and 25 feet apart on tangent and curve sections, respectively. These tubes serve to delineate opposing directions of traffic, but provide no physical protection against crossover collisions. Installation of the MMB would virtually eliminate crossover "head on" accidents on this highway facility.

The District is evaluating one "build" and one "no-build" alternative for the proposed Project. For the build alternative, the District proposes installing a barrier made up of a series of interlinked high strength steel structures filled with concrete, each unit of which measures approximately 39"x12"x32" (LxWxH). The units would have a 24"-wide steel base with four rubber feet and rest on the surface of the roadway. At completion of the Project, the semi-rigid barrier would extend 3.1 miles and could be used in 2 NB / 4 SB, 3 NB / 3 SB, and 4 NB / 2 SB lane configurations. The use of a Barrier Transfer Machine (BTM) is also proposed as part of the Project. The BTM, which would be approximately 9.5 feet wide and 51 feet long, is referred to as a "zipper truck" because the barrier is moved by one lane as the truck travels along the roadway. Two BTMs would be required as part of the Project, as each machine moves the median barrier laterally by one lane. Once the barrier is in place, the BTMs would be stored

The four existing eastern most booths will be removed and three new booths reconstructed. The lane widths and heights of the three booths will increase slightly and the booths will be modified for all electronic tolling. The form of the modified Toll Plaza will remain the same.

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We are contacting your organization as part of the Section 106 process (36 CFR 800.2). If you or your organization has any concerns regarding this historical resource, please respond in writing to me at the address above citing your concerns within the next thirty days. For additional information, please call me at 415-923-2023, or visit the Project website at http://goldengatebridge.org/projects/MoveableMedianBarrier.php.

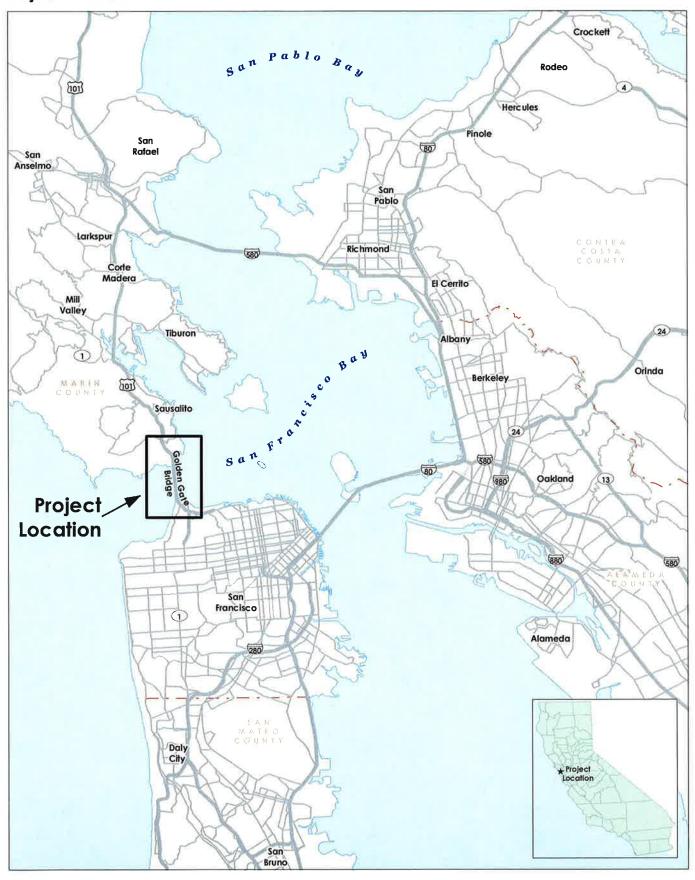
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Jeffrey Y. Lee, PE Project Manager

Enclosure(s): Project Location Map

Figure 1: Project Location

Golden Gate Bridge Moveable Median Barrier



5 Miles



Anthea M. Hartig, Ph.D., Director Western Office, The Hearst Building **National Trust for Historic Preservation** 5 Third Street, Suite 707 San Francisco, CA 94103

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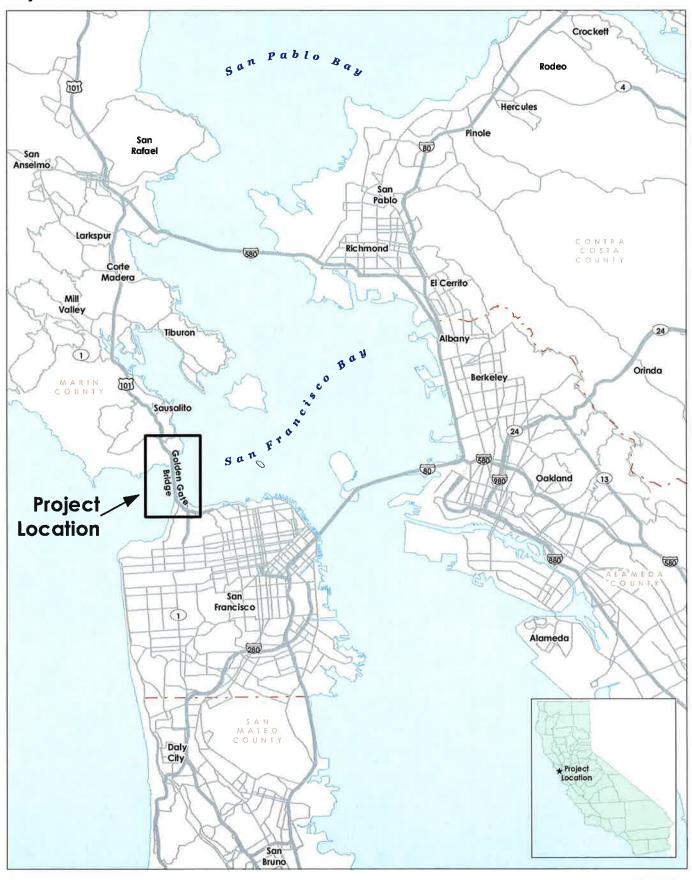
Enclosure(s): Project Location Map

Figure 1: Project Location

2.5

5 Miles

Golden Gate Bridge Moveable Median Barrier





Northern California Chapter Society of Architectural Historians

c/o Rich Sucre, Treasurer 1000 Sansome Street, Ste. 200 San Francisco, CA 94111

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Sincerely,

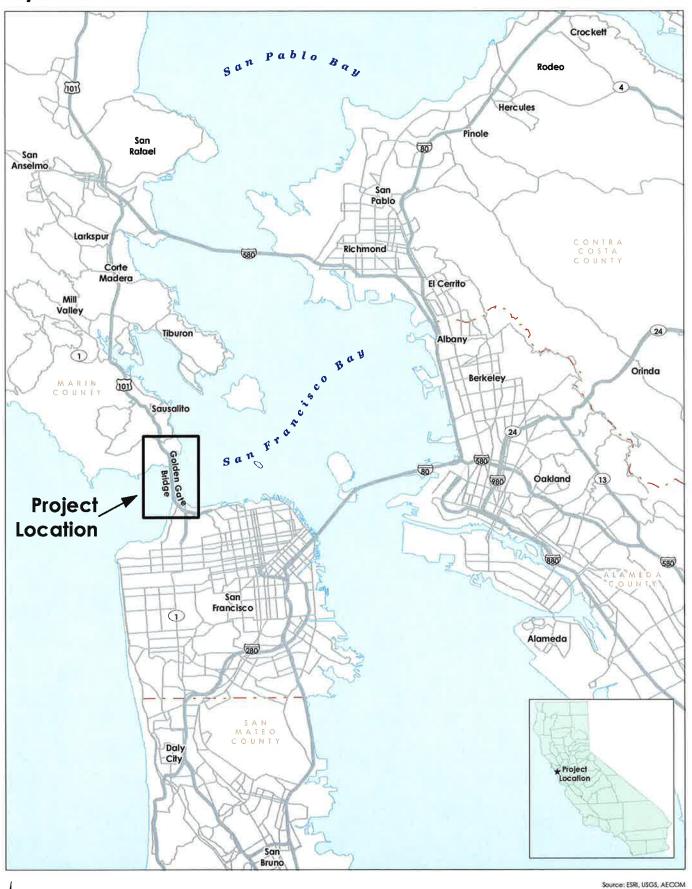
Jeffrey Y. Lee, PE Project Manager

Enclosure(s): Project Location Map

Figure 1: Project Location

Golden Gate Bridge Moveable Median Barrier

06/2010



5 Miles

2.5



San Francisco Architectural Heritage 2007 Franklin Street San Francisco, CA 94109

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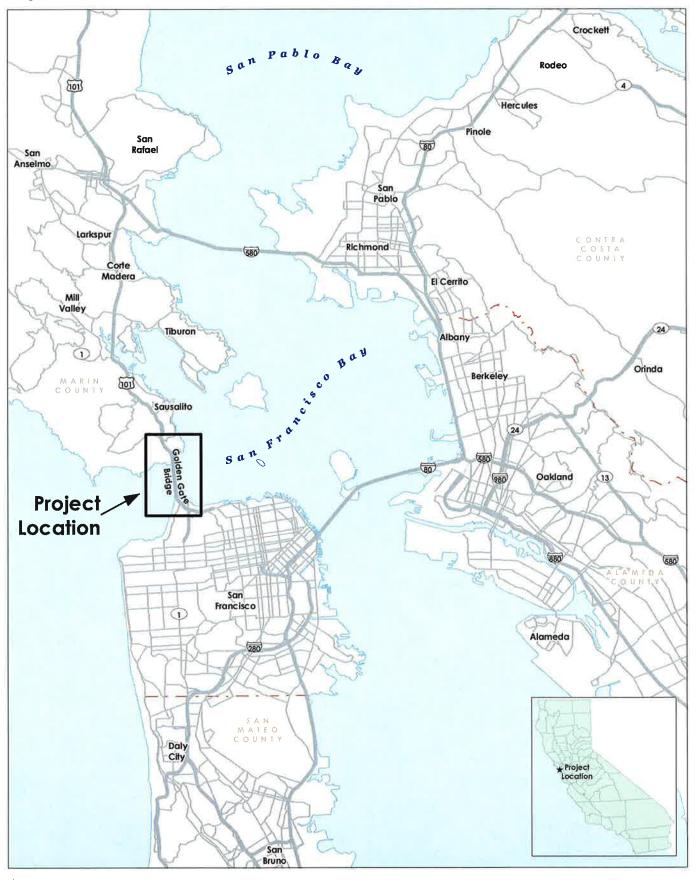
Enclosure(s): Project Location Map

Figure 1: Project Location

2.5

5 Miles

Golden Gate Bridge Moveable Median Barrier





Will Travis, Executive Director Joseph LaClair, Chief Planner San Francisco Bay Conservation and Development Commission 50 California Street, Suite 2600 San Francisco, CA 94111

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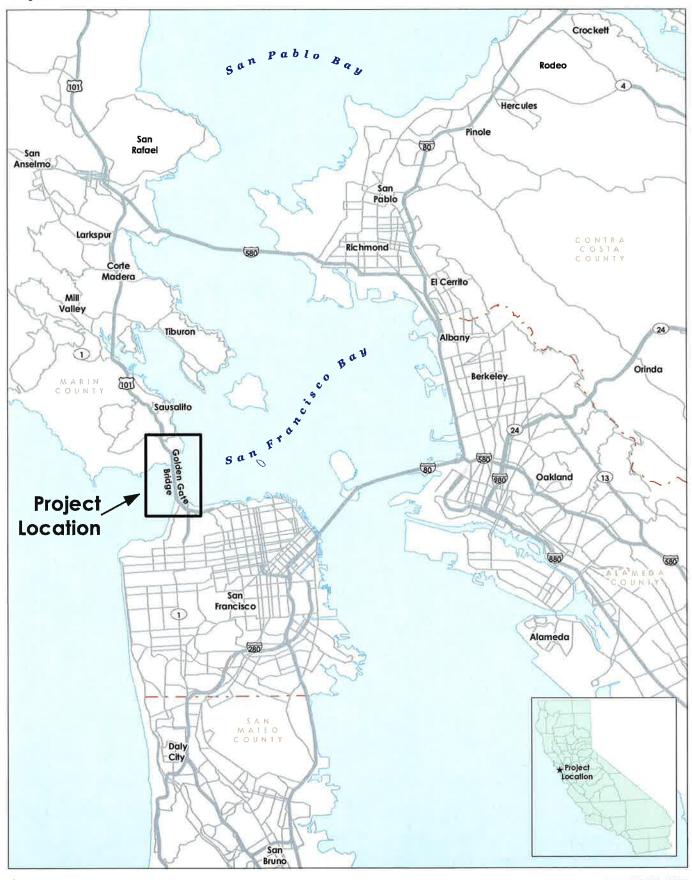
Enclosure(s): Project Location Map

Figure 1: Project Location

2.5

5 Miles

Golden Gate Bridge Moveable Median Barrier





September 30, 2011

Tilly Chang, Deputy Director for Planning Glenn Davis, Chair, Citizens Advisory Committee San Francisco County Transportation Authority 100 Van Ness Ave, 26th floor San Francisco, CA 94102

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The Golden Gate Bridge, Highway and Transportation District (District) is conducting a study of its proposed Golden Gate Bridge Moveable Median Barrier Project (Project) [Federal Project No. STPL-6003(037)]. The proposed Moveable Median Barrier (MMB) would be located along U.S. Highway 101 and extend across the 1.7-mile long Golden Gate Bridge (Bridge) above San Francisco Bay, between the City and County of San Francisco and Marin County. The District, in cooperation with the Federal Highway Administration and California Department of Transportation, is preparing *Environmental Studies and Preliminary Design for a Moveable Median Barrier on the Golden Gate Bridge* in accordance with the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and other applicable laws and regulations.

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Notification on Historical Resources Moveable Median Barrier September 30, 2011, Page 2

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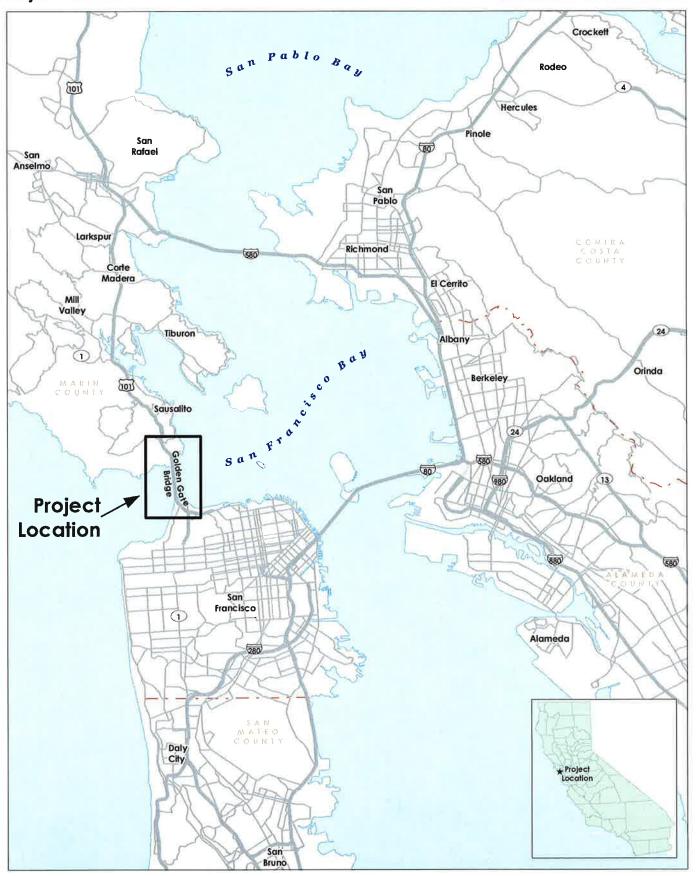
JYL/crh 2.1.19.1

Figure 1: Project Location

2.5

5 Miles

Golden Gate Bridge Moveable Median Barrier





September 30, 2011

San Francisco History Association PO Box 31907 San Francisco, CA 94131

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Notification on Historical Resources Moveable Median Barrier September 30, 2011, Page 2

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Enclosure(s): Project Location Map

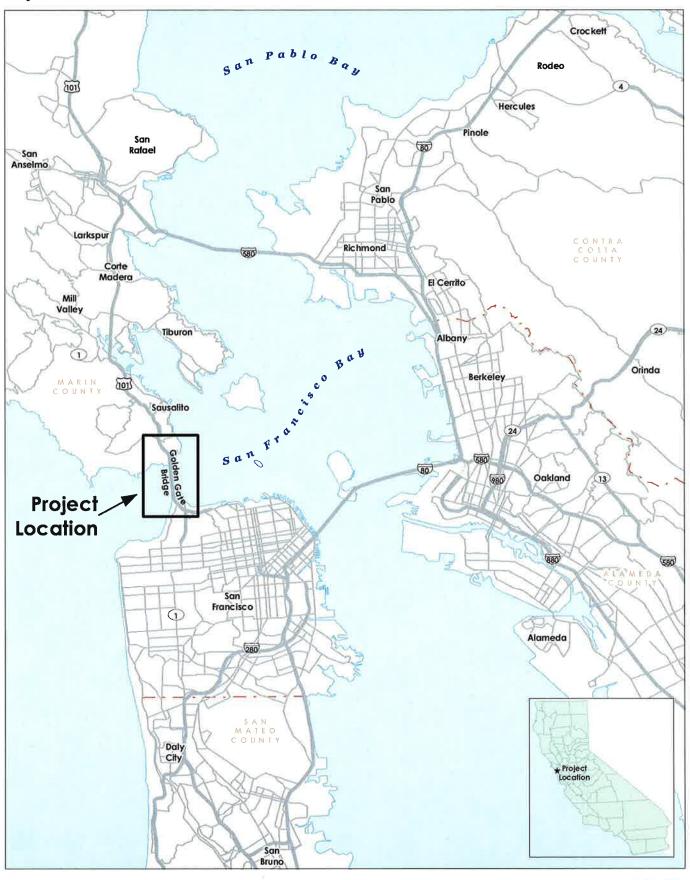
JYL/crh 2.1.19.1

Figure 1: Project Location

2.5

5 Miles

Golden Gate Bridge Moveable Median Barrier





September 30, 2011

Kurt Nystrom, Chief Operating Officer and Chief Financial Officer San Francisco Museum and Historical Society
PO Box 420470
San Francisco, CA 94142

Dear Sir or Madam:

The Golden Gate Bridge, Highway and Transportation District (District) is conducting a study of its proposed Golden Gate Bridge Moveable Median Barrier Project (Project) [Federal Project No. STPL-6003(037)]. The proposed Moveable Median Barrier (MMB) would be located along U.S. Highway 101 and extend across the 1.7-mile long Golden Gate Bridge (Bridge) above San Francisco Bay, between the City and County of San Francisco and Marin County. The District, in cooperation with the Federal Highway Administration and California Department of Transportation, is preparing *Environmental Studies and Preliminary Design for a Moveable Median Barrier on the Golden Gate Bridge* in accordance with the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and other applicable laws and regulations.

The purpose of the Project is to enhance traffic safety along the Bridge by providing a physical barrier to separate opposing directions of traffic. Currently, northbound (NB) and southbound (SB) traffic along the Bridge is separated by 19-inch tall, 4-inch diameter yellow hollow plastic tubes placed 50 feet and 25 feet apart on tangent and curve sections, respectively. These tubes serve to delineate opposing directions of traffic, but provide no physical protection against crossover collisions. Installation of the MMB would virtually eliminate crossover "head on" accidents on this highway facility.

The District is evaluating one "build" and one "no-build" alternative for the proposed Project. For the build alternative, the District proposes installing a barrier made up of a series of interlinked high strength steel structures filled with concrete, each unit of which measures approximately 39"x12"x32" (LxWxH). The units would have a 24"-wide steel base with four rubber feet and rest on the surface of the roadway. At completion of the Project, the semi-rigid barrier would extend 3.1 miles and could be used in 2 NB / 4 SB, 3 NB / 3 SB, and 4 NB / 2 SB lane configurations. The use of a Barrier Transfer Machine (BTM) is also proposed as part of the Project. The BTM, which would be approximately 9.5 feet wide and 51 feet long, is referred to as a "zipper truck" because the barrier is moved by one lane as the truck travels along the roadway. Two BTMs would be required as part of the Project, as each machine moves the median barrier laterally by one lane. Once the barrier is in place, the BTMs would be stored within the U.S. 101 right-of way. The Project will also involve modifications to the Toll Plaza.

Notification on Historical Resources Moveable Median Barrier September 30, 2011, Page 2

The four existing eastern most booths will be removed and three new booths reconstructed. The lane widths and heights of the three booths will increase slightly and the booths will be modified for all electronic tolling. The form of the modified Toll Plaza will remain the same.

The no-build alternative represents the future year conditions if no other actions are taken in the study area beyond what is already in place; it is the baseline condition against which all other alternatives are compared. The no-build alternative would continue the existing hollow plastic tube traffic separation measures.

The District has formed a consultant team to perform engineering and environmental technical studies to meet various state and federal environmental requirements. JRP Historical Consulting, LLC, is part of this team and is preparing a Finding of Effect (FOE) to assess the potential for the Project to impact historic architectural properties in the study area. Historic properties are potentially eligible, determined eligible, or listed in the National Register of Historic Places. The Bridge and its contributing elements have been determined eligible for listing in the National Register. The Bridge is the only historic property in the study area, which is confined to the U.S. Highway 101 right-of-way (see enclosed Project Area map). The purpose of the FOE is to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, by applying the Criteria of Adverse Effect, set forth in Title 36 Code of Federal Regulations (CFR) Part 800.5, and following the guidelines for documentation in 36 CFR 800.11.

We are contacting your organization as part of the Section 106 process (36 CFR 800.2). If you or your organization has any concerns regarding this historical resource, please respond in writing to me at the address above citing your concerns within the next thirty days. For additional information, please call me at 415-923-2023, or visit the Project website at http://goldengatebridge.org/projects/MoveableMedianBarrier.php.

Sincefely,

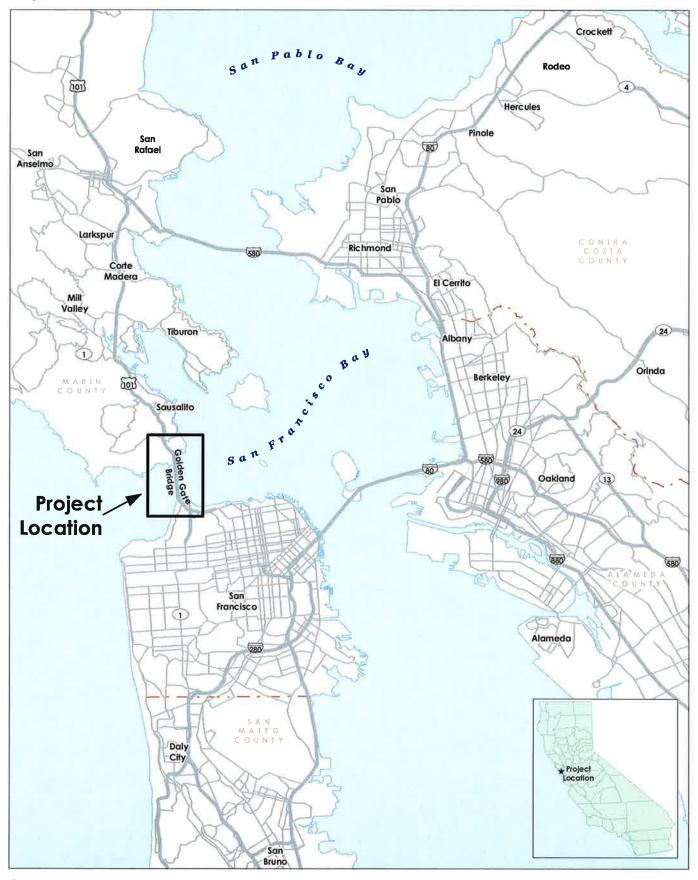
Jeffrey Y. Lee, PE Project Manager

Enclosure(s): Project Location Map

JYL/crh 2.1,19,1

Figure 1: Project Location

Golden Gate Bridge Moveable Median Barrier





September 30, 2011

David Alumbaugh, Manager Joshua Switzky, Built Environment Lead San Francisco Planning Department City Design Group 1650 Mission Street, Suite 400 San Francisco, CA 94103

Dear Sir or Madam:

The Golden Gate Bridge, Highway and Transportation District (District) is conducting a study of its proposed Golden Gate Bridge Moveable Median Barrier Project (Project) [Federal Project No. STPL-6003(037)]. The proposed Moveable Median Barrier (MMB) would be located along U.S. Highway 101 and extend across the 1.7-mile long Golden Gate Bridge (Bridge) above San Francisco Bay, between the City and County of San Francisco and Marin County. The District, in cooperation with the Federal Highway Administration and California Department of Transportation, is preparing *Environmental Studies and Preliminary Design for a Moveable Median Barrier on the Golden Gate Bridge* in accordance with the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and other applicable laws and regulations.

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Notification on Historical Resources Moveable Median Barrier September 30, 2011, Page 2

The four existing eastern most booths will be removed and three new booths reconstructed. The lane widths and heights of the three booths will increase slightly and the booths will be modified for all electronic tolling. The form of the modified Toll Plaza will remain the same.

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Sincefely,

Jeffrey Y. Lee, PE Project Manager

Enclosure(s): Project Location Map

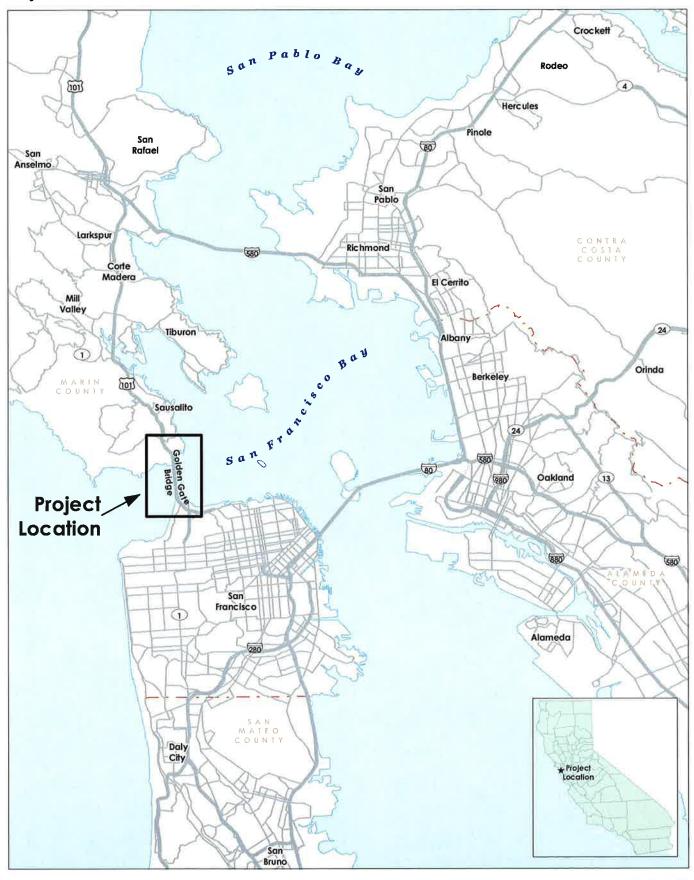
JYL/crh 2.1.19.1

Figure 1: Project Location

2.5

5 Mlles

Golden Gate Bridge Moveable Median Barrier





September 30, 2011

Tina Tam, Senior Preservation Planner Tim Frye, Acting Preservation Coordinator San Francisco Planning Department Historic Preservation Commission 1650 Mission Street, Suite 400 San Francisco, CA 94103

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The Golden Gate Bridge, Highway and Transportation District (District) is conducting a study of its proposed Golden Gate Bridge Moveable Median Barrier Project (Project) [Federal Project No. STPL-6003(037)]. The proposed Moveable Median Barrier (MMB) would be located along U.S. Highway 101 and extend across the 1.7-mile long Golden Gate Bridge (Bridge) above San Francisco Bay, between the City and County of San Francisco and Marin County. The District, in cooperation with the Federal Highway Administration and California Department of Transportation, is preparing *Environmental Studies and Preliminary Design for a Moveable Median Barrier on the Golden Gate Bridge* in accordance with the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and other applicable laws and regulations.

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Notification on Historical Resources Moveable Median Barrier September 30, 2011, Page 2

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Sincerely,

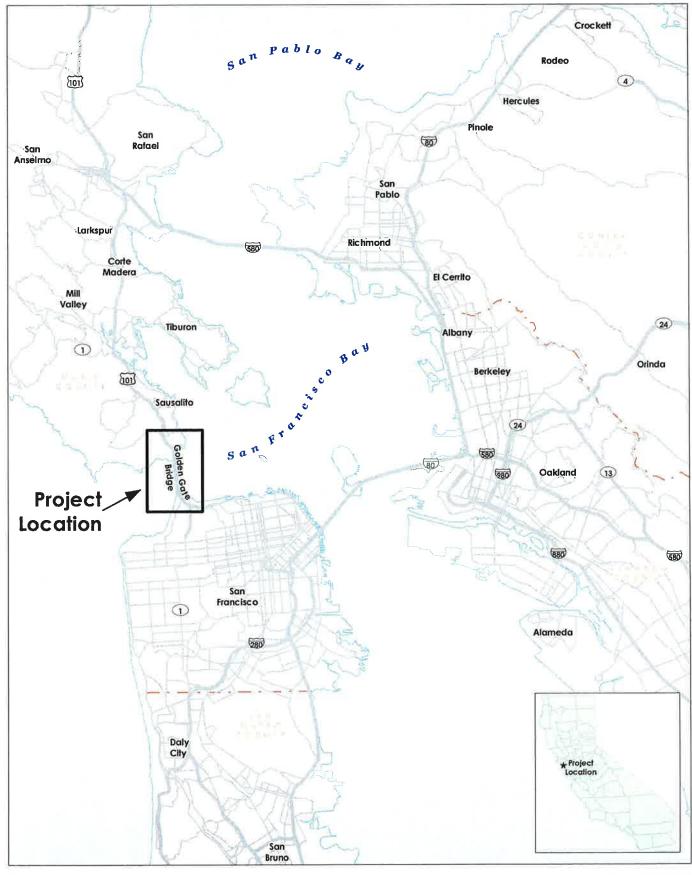
Jeffrey Y. Lee, PE Project Manager

Enclosure(s): Project Location Map

JYL/crh 2.1.19.1

Figure 1: Project Location

Golden Gate Bridge Moveable Median Barrier



5 Mlles



September 30, 2011

Craig Middleton, Executive Director
The Presidio Trust
34 Graham Street
PO Box 29052
San Francisco, CA 9412

Dear Sir or Madam:

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Notification on Historical Resources Moveable Median Barrier September 30, 2011, Page 2

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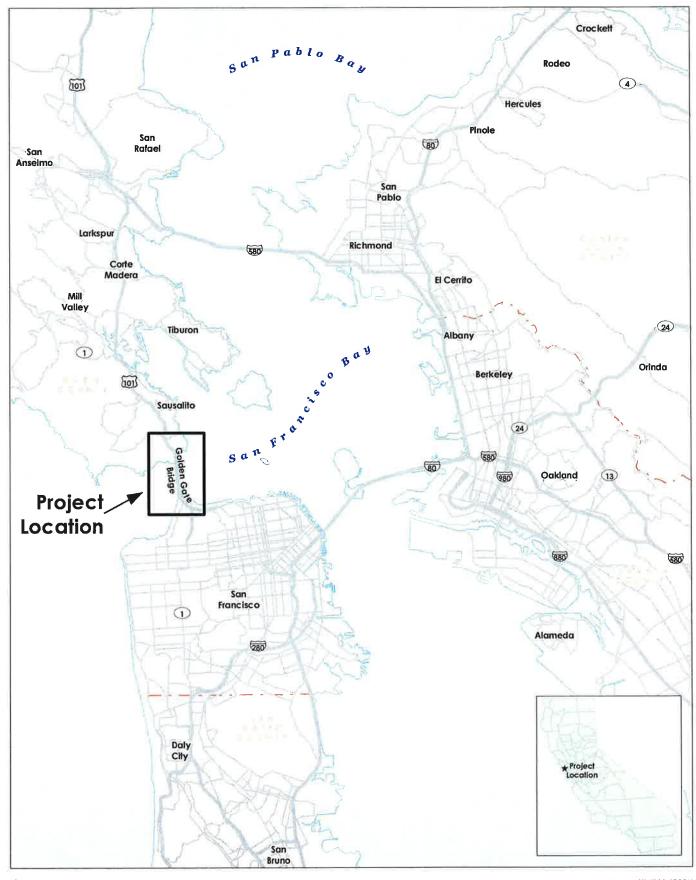
Jeffrey Y. Lee, PE Project Manager

Enclosure(s): Project Location Map

JYL/crh 2.1.19.1

Figure 1: Project Location

Golden Gate Bridge Moveable Median Barrier



5 Miles

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FOE: Golden Gate Bridge Moveable Median Barrier Project (Revised Draft)

October 2011

APPENDIX C: DPR 523 Form, Golden Gate Bridge Update (2008)

State of California – The Resources Agency
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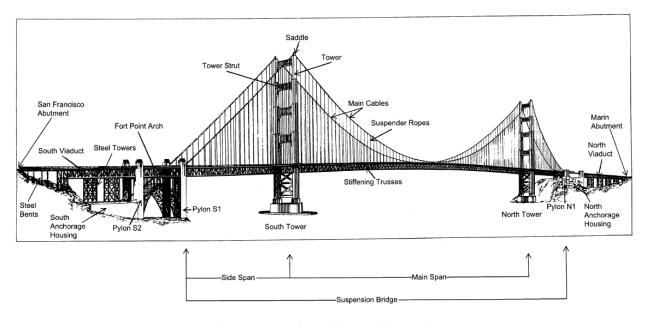
☐ Continuation ☒ Update

*Resource Name or # (Assigned by recorder) Golden Gate Bridge

P1. Other Identifier: Main and side suspension spans = Bridge 27 0052; Toll Plaza Undercrossing = Bridge 34 0069

*P3a. Description: This update form has been prepared as part of the Golden Gate Bridge Physical Suicide Deterrent System Project. The Golden Gate Bridge was previously inventoried and evaluated by two survey efforts. MacDonald Architects surveyed the bridge in November 1993 as part of the Historic Architectural Survey Report for the "Proposed Seismic Retrofit Project for the Golden Gate Bridge," completed in January 1995. Meanwhile, the Western Regional Office of the National Park Service surveyed the property for a National Historic Landmark (NHL) Nomination, completed in August 1997. These two surveys are attached to this update form. This update was prepared to incorporate the extensive information provided in these previous studies, to augment that information with descriptions of changes to the property since the mid 1990s, and to clarify and confirm the contributing elements and historic status of the property within the Focused APE for this project.

The 1993 survey and the 1997 nomination identified the main bridge structures from the Toll Plaza area on the south, to the Marin Approach Viaduct and North Abutment on the north as the primary element of the Golden Gate Bridge historic property. The Golden Gate Bridge itself is thoroughly described in the 1997 nomination and its major components are the main suspension span, suspender ropes and suspension cables, four pylons, Four Point Arch and two of each of the following structures: side suspension spans, anchorages, piers, towers, and North and South viaducts. The 1993 survey identified the Round House Gift Center building as a contributing element of the bridge property, but did not address the approach roads in much detail because they were not within the APE for that project.¹



Main elements of the Golden Gate Bridge

(Source: MacDonald Architects, "HASR: Seismic Retrofit Project, Golden Gate Bridge," [1995]).

The 1997 nomination addressed the collective system of structures that comprise the Golden Gate Bridge property and offered a detailed description of its contributing and non-contributing elements. The nomination identified the southern approach road (also known as the Presidio Approach Road, or Doyle Drive), and its two viaducts (Bridges 34 0014 and 34 0019), as contributing elements of the bridge, as well as the Round House Gift Center (originally a restaurant and traveler comfort station). The nomination did not specifically call out the small structure known as the Lincoln Boulevard Undercrossing (Bridge 34 0062), located at the north end of Doyle Drive just south of the Toll Plaza area, but the

¹ The General APE for the current project includes Doyle Drive as a contributing element, while the Focused APE for the current project encompasses the main bridge structures and the Toll Plaza to account for the proposed project footprint and construction staging areas.

*Required Information

State of California - The Resources Agency
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☐ Continuation ☒ Update

*Resource Name or # (Assigned by recorder) Golden Gate Bridge

nomination did consider the entire Doyle Drive feature to be a contributing element of the Golden Gate Bridge (see updated significance statement below). Railings and original light standards were identified as contributing elements of the bridge. The "Stop – Pay Toll" sign facing southbound traffic on the toll booth canopy was identified as a contributing feature; it has since been removed for installation of FasTraktm signs, as discussed below (see Figures 3 - 4 and Photograph 8). The 1997 nomination also concluded that the Sausalito Lateral (original approach to the north side of the bridge), was not a contributing element because it had not been included in the final scope of work for the original bridge project, and was not designed, built, or funded by the team that was responsible for the rest of the Golden Gate Bridge, see the attached nomination for more information. Other non-contributing elements of the bridge property identified in the 1997 nomination: Toll Plaza Building, the clock on the toll booth canopy (1949), as well as modern bus shelters, phone booths, light standards, and signs.²

Both previous surveys summarized major construction and maintenance projects undertaken through the mid 1990s that altered aspects of the Golden Gate Bridge between its completion in 1937 and 1997. Many modifications were made during that sixty year period, but the NHL nomination noted that none of these modifications had "substantially" affected the historic integrity of the bridge as a historic property. The major projects during that time included: southbound lane widening approaching toll booths in 1947; the widening of both the Marin and San Francisco approach lanes (1950s) and viaducts (early 1960s); replacement of all suspender ropes and their connections between 1973 and 1976; replacement of rivets with bolts on the suspension bridge and approaches; installation of an orthotropic steel plate roadbed (1982-1985) replacing the original reinforced concrete roadway; and addition of lower lateral bracing system and diagonal bracing at North and South viaducts. In addition, during the early 1980s, the North and South approach viaducts underwent a substantial seismic upgrade.³ Neither of the previous surveys devoted much description to the Vista Point on the Marin County side of the bridge, also known as the Golden Gate Observation Area. California Division of Highways designed and built this facility just east of US 101, adjacent to the North Abutment in 1961-1962. It was not part of the original bridge design and construction project and is not a contributing element of the bridge property.⁴

Other, smaller scale alterations completed between 1937 and 1997 included: addition of a bicycle bridge at the northern pylon in 1968-69 to connect to west sidewalk; removal of original toll booths in the 1980s; and replacement of light fixtures and retention of original light standards (compare light fixture in Figure 2, with Photographs 6-7). Other facilities that underwent changes in the 1980s: the addition of a west sidewalk on the North Approach (there was none originally); east side walk on North Approach widened; North Approach concrete guardrails replaced with metal. This work included removal of "... the structural steel sidewalk framing, including traffic curb, pedestrian railing and electrolier standards, [for transport] to the Napa yard for sandblasting, rehabilitation, and painting. Corrosion damage to individual frame members and railings was repaired and in some cases badly damaged members were replaced." About ten years later, the Golden Gate Bridge and Highway Transportation District (District) replaced over one mile (6,557 linear feet) of pedestrian hand

² Caspar Mol, MacDonald Architects, "Caltrans Architectural Inventory and Evaluation Form for the Golden Gate Bridge," November 1993, 39-41; National Park Service, "National Historic Landmark Nomination for the Golden Gate Bridge," August 13, 1997, 9-10; Frank L. Stahl, Daniel E. Mohn, and Mary C. Currie, *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007* (San Francisco, CA: Golden Gate Bridge, Highway and Transportation District, 2007), 102, 122-144, 155-156, 170, 178, 180-182. This 2007 report, a supplement to *The Golden Gate Bridge, Report of the Chief Engineer, September 1937* by Joseph B. Strauss, provides a comprehensive history of the improvements and other modification to the bridge since its completion in 1937.

³ MacDonald Architects, "Caltrans Evaluation Form, Golden Gate Bridge," November 1993, 39-41; National Park Service, "NHL Nomination, Golden Gate Bridge," August 13, 1997, 9-10; San Francisco Historical Photograph Collection, Image #AAD-1470, August 1947, San Francisco Public Library; District, "Golden Gate Bridge Lighting Facts," http://goldengatebridge.org/research/, accessed January 2008; Stahl, et al., *The Golden Gate Bridge: Report of the Chief Engineer, May 2007*, 102, 122-144, 155-156, 170, 178, 201.

⁴ San Francisco Historical Photograph Collection, San Francisco Public Library; GGNRA, *Cultural Landscape Report for Fort Baker* (GGNRA 2005), 20, 44.

⁵ Stahl, et al., *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007*, 140-141. **DPR 523L (1/95)**

State of California – The Resources	Agency
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Primary #	38-001336	
HRI #		
Trinomial		
	NRHP Status Code _	2S2

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☐ Continuation ☒ Update

*Resource Name or # (Assigned by recorder) <u>Golden Gate Bridge</u>

railings on the west side of the bridge with replicas of the originals. See Figures 2, 5 and 6, as well as Photographs 5, 6, and 9 for various historic and current views of the sidewalks and railings.⁶

Other than the second, on-going seismic retrofit project that began in 1997, the most extensive new construction on the Golden Gate Bridge since the 1997 nomination was the installation of new Public Safety Railing between the roadway lanes and each sidewalk in 2003 (Photograph 6). This 4.5' tall railing consists of steel posts set approximately 12.5' apart horizontal pipe rails with horizontal cables and horizontal pipe rails at the top (Photograph 6). The posts were secured to the extant steel curb barrier between the sidewalk and the roadway. The FasTraktm project (2000-2005) required modifications to the toll booth canopy, including the removal of the "Stop – Pay Toll" sign that the 1997 nomination considered to be a contributing feature of the bridge. The sign was removed in 2000, and in 2003 the toll canopy roof was replaced and the 1949 neon clock, which had ceased to function and was not repairable, was replaced with a replica (Photograph 8).

The District is currently conducting a three-phase seismic retrofit program on the Golden Gate Bridge that began in 1997. Phase 1, completed in 2002, retrofitted the Marin (north) Approach Viaduct. Retrofit of the San Francisco (south) Approach Viaduct, San Francisco (south) Anchorage Housing, Fort Point Arch, and Pylons S1 and S2 will be completed as part of Phase 2 (see Photograph 7). The retrofit of the Main Suspension Bridge and Marin (north) Anchorage Housing will be completed under Phase 3, scheduled to start in 2007.

The Public Safety Railing Project and the seismic retrofit program currently underway were subject to Section 106 effects analysis and CEQA impacts analysis. No adverse effects to character-defining features or the qualities that qualify the Golden Gate Bridge for listing in the NRHP were identified for either project. SHPO concurred with these findings, as shown in the attached correspondence, and the previous determination that the Golden Gate Bridge is eligible for listing in the NRHP remains valid.

- *P3b. Resource Attributes: (List attributes and codes) (HP19) Bridge
- *P8. Recorded by: Meta Bunse, JRP Historical Consulting, LLC, 1490 Drew Ave, Suite 110, Davis, CA 95618
- *P9. Date Recorded: March, August, and November 2007

*P11. Report Citation: <u>JRP Historical Consulting, LLC, "Historical Resources Evaluation Report, Golden Gate Bridge Physical Suicide Deterrent System Project," Project 2006-B-17, 04-MRN-101-GGHT, Federal Project #: STPL-6003(030) (May 2008)</u>

⁶ National Park Service, "NHL Nomination, Golden Gate Bridge," August 13, 1997, 9; Stahl, et al., *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007*, 144.

⁷ Stahl, et al., *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May* 2007, 49, 185-186, 193, 194, 243-248; District, "Toll History," and "Golden Gate Bridge FasTrak System Timeline," http://goldengatebridge.org/research/, accessed January 2008.

⁸ MacDonald Architects, "HASR: Proposed Seismic Retrofit Project for the Golden Gate Bridge," (1995); District, "Overview of Golden Gate Bridge Seismic Retrofit Updated January 2007," http://goldengatebridge.org/projects/retrofit.php, accessed online February 26, 2008.

⁹ Frank L. Stahl,et al., 243-244; Donald MacDonald, MacDonald Architects, "Historic Property Survey Report, Finding of No Adverse Effect: Environmental Assessment of the Public Safety Railing Project" (March 1999) 1-2 and 6; Donald MacDonald and Caspar Mol, MacDonald Architects, "Historic Property Survey Report, Finding of No Adverse Effect for the Proposed Seismic Retrofit Project for the Golden Gate Bridge," (January 1995); District, FHWA, and Caltrans, "Golden Gate Bridge Seismic and Wind Retrofit Project, Draft Environmental Assessment / Initial Study," (November 1995).

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
UPDATE SHEET

Primary #	38-001336	
HRI # Trinomial		
	NRHP Status Code	2S2

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☐ Continuation ☒ Update

*Resource Name or # (Assigned by recorder) <u>Golden Gate Bridge</u>

*B10. Significance: This update form has been prepared as part of the Golden Gate Bridge Physical Suicide Deterrent System Project to supplement previous surveys of the Golden Gate Bridge history property and to clarify its historic status and contributing elements. The Bridge is a multi-component historic structure that has been determined eligible for listing in the NRHP, OHP Status Code 2. A collection of agency correspondence regarding the historic status of the bridge and its contributing elements is included in the Historic Property Survey Report and Historical Resources Evaluation Report prepared for this project.

The Golden Gate Bridge has been recognized by several local, state, and federal programs. It was designated as California State Historic Landmark No. 974 in 1990, which automatically listed the property in the California Register of Historical Resources (CRHR). The Golden Gate Bridge and its approaches have been documented by the Historic American Engineering Record (HAER No. CA-31), and the bridge has been recognized by the American Society of Civil Engineers on at least three separate occasions: as one of the Seven [engineering] Wonders of the World in 1955, as a National Civil Engineering Landmark in 1984, and as a Monument of the Millennium in 2001. The Golden Gate Bridge is also San Francisco City Landmark No. 222. Currently, Caltrans lists this bridge as Category 2 (eligible for listing in the NRHP) in its Caltrans Historic Bridge Inventory. The Golden Gate Bridge is also considered to be a historical resource for the purposes of California Environmental Quality Act (CEQA).

The Golden Gate Bridge was determined eligible for listing in the NRHP in 1980, under Criteria A, B, and C, at the national level of significance, with a period of significance of 1933-1938. FHWA Region 9 requested the determination in 1979 when the bridge was about 42 years old, but the California State Historic Preservation Officer, and the Advisory Council for Historic Preservation agreed that the bridge was exceptionally important. Subsequent research and at least three additional inventory and evaluation efforts have refined the eligibility analysis and expanded the identification of the contributing elements of the property and its character-defining features. Caltrans Architectural Historian Stephen Mikesell, who is now Deputy SHPO, evaluated the approaches to the bridge and concluded that the Presidio Viaduct (Bridge 34 0019) and Marina Viaduct (34 0014) were eligible for individual listing in the NRHP, and as contributing elements of the Golden Gate Bridge and SHPO concurred (see the attached correspondence).

As discussed above, the bridge was then evaluated in 1993 for a proposed seismic project, and then again in 1997 for a proposed NHL nomination. The 1997 nomination proposed significance under Criterion C only. The supporting documentation and analysis under Criterion C significance appears to be accurate and is proposed as the correct area of significance in this updated evaluation. The NPS has produced and revised guidelines for the evaluation of historic properties since the time of the 1980 determination and the argument for eligibility under Criteria A and B is no longer adequate. The request for determination argued that bridge was eligible under Criterion A for its association with the history of the Golden Gate Strait and went on to describe the events and trends in California history that took place through the

National Park Service, National Historic Landmark Nomination; California OHP, "Directory of Properties in the Historic Property Data File for San Francisco County," as of December 2007, http://www.dot.ca.gov/hq/structur/strmaint/hs_state.pdf, on file with Northwest Information Center; Caltrans, "Structure & Maintenance Investigation, Historical Significance—State Agency Bridges," November 2007; Homme, FHWA, "Request for Determination of Eligibility for the Golden Gate Bridge," 1979; Stephen Mikesell, "HRER Approaches to the Golden Gate Bridge," 1987; Snyder, Memorandum to SHPO re: Presidio Viaduct and Marina Viaduct, April 3,1990; and Nissley at ACHP, Letter to Markle at FHWA, re: Marina Viaduct Seismic Retrofit, 1994. Caltrans and California Office of Historic Preservation records indicate that the Golden Gate Bridge has been the subject of historic evaluation for many years. The Keeper of the National Register determined the bridge to be eligible for the NRHP in 1977 (Status 2S1) and in 1980 a consensus determination was made, resulting in a Status 2S2 (determined eligible for separate listing). Caltrans Architectural Historian Stephen Mikesell evaluated the approaches to the bridge and concluded that the Presidio Viaduct (Bridge 34 0019) and Marina Viaduct (34 0014) were eligible for listing in the NRHP as contributing elements of the Golden Gate Bridge and SHPO concurred.

¹¹ National Park Service, National Historic Landmark Nomination; Golden Gate Bridge, HAER # CA-31 (1984); Presidio of San Francisco, HABS # CA-1100-1114, 1173, 1174, 1212-1216, 1239, and 2269; San Francisco Planning Department, Landmarks Preservation Advisory Board, Golden Gate Bridge, case file for Landmark No. 222, 1999; Caltrans, "Structure & Maintenance Investigation, Historical Significance–State Agency Bridges," November 2007.

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entrance that the strait provides to San Francisco Bay and points beyond prior to construction of the bridge. The bridge does not, however, have direct or important associations with any of the events or trends mentioned in the request for determination, which is a required aspect of eligibility under Criterion A. The request also proposed that the bridge was eligible for listing under Criterion B, for its association with its lead proponent and engineer, Joseph B. Strauss. Criterion B is intended for direct personal association with a historically significant individual, and is usually applied to the place where the individual conducted his or her important work, such as a studio, work place, or home. The association of the bridge with Strauss more accurately falls under Criterion C, as the work of a master engineer. The Golden Gate Bridge property, therefore, does not appear to meet Criterion A or Criterion B. 12

There is ample documentation and analysis to support eligibility of the bridge property under Criterion C, as an important example of: suspension bridge technology, Art Deco design, and the work of more than one master engineer and architect. Please refer to the attached copies of the 1993 evaluation, 1997 nomination, and the 1987 evaluation of the Presidio Approach Road for discussion of eligibility under Criterion C. The 1997 nomination listed eight major engineers and architects who contributed to the project, including Joseph B. Strauss and Irving F. Morrow, of Morrow & Morrow, San Francisco, who served as consulting architect on the original Golden Gate Bridge design and construction project. Both Strauss and Morrow recognized the important historic nature of the setting of the Bridge from the earliest stages of the project. Strauss noted the importance of the history of the area in his initial site investigations, and his respect for existing historic structures directly affected a major component of the final Bridge: the Fort Point Arch (see Figure 1 and Photograph 7).

[In the in 1920s]... the newly created Golden Gate Bridge District was raising tens of millions of dollars through bond sales for a bridge that would span the Golden Gate from Fort Point to Lime Point. Chief Engineer Joseph Strauss initially concluded that Fort Point sat on the optimal location for a huge concrete caisson anchoring the bridge's San Francisco end. After touring the empty fort, however, he changed his mind. In a 1937 memorandum to the bridge's Board of Directors, Strauss wrote: "While the old fort has no military value now, it remains nevertheless a fine example of the mason's art. Many urged the razing of this venerable structure to make way for modern progress. In the writer's view it should be preserved and restored as a national monument..."

Strauss made some additional calculations and concluded that the fort could be spared by moving the southern anchorage several hundred feet south. However, in order to make up the difference in the total length, he would have to add a 'bridge within the bridge,' and consequently designed a steel arch in the southern anchorage to span the old fort. Fort Point would be overshadowed by the new bridge, but it would be preserved. ... But the bridge crews went to extraordinary lengths to preserve one of the fort's most outstanding examples of military engineering, the granite seawall. A tall concrete bridge pylon was planned for the north side of the fort, directly atop the seawall. Instead of demolishing the wall or burying it with concrete, Strauss had it dismantled, stored, and re-erected once the pylon was finished.¹³

Strauss probably discussed this in detail with Irving Morrow, who in addition to consulting on the bridge project, was the San Francisco District Officer of the Historic American Buildings Survey (HABS) at the time. Morrow oversaw submittal

¹² USDI, National Park Service, "Guidelines for Applying the National Register Criteria for Evaluation," *National Register Bulletin 15* (Washington DC: GPO, 1990; revised 1991-1997; revised for Internet 1995-2002), 16.

¹³ John Martini, Fort Point: Sentry at the Golden Gate, ([San Francisco]: Golden Gate National Park Association, c1991), np. The 1997 nomination indicated that the Castillo de San Joaquin was probably destroyed by construction of the bridge, which seems to be confirmed by Martini's history of Fort Point, which continues: "Although the main casemated portion of Fort Point was spared during construction, some of the outworks of the fort had to be demolished to make way for the southern bridge anchorage. Early in the excavation process, the bluff south of the fort was cut back several hundred feet, destroying the counterscarp gallery and ten-gun battery. Bridge excavators also uncovered a long-buried adobe shed believed to be a powder magazine from the Castillo de San Joaquin. After its location was noted and photographed, the hut was demolished; it stood in a location too critical for it to be preserved."

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of seven photographs of the fort property made by Roger Sturtevant in May 1934, and possibly additional material that has not been digitized by the Library of Congress HABS Program.¹⁴

Although these bridge designers obviously appreciated the history of the Golden Gate and the military facilities surrounding the site, their design aesthetic looked forward rather than back and their finished product was ultimately a triumph of both bridge engineering and Art Deco design. Consulting architect Morrow was involved with the project from an early point, by about 1930, and continued to collaborate with Strauss and the rest of the Board of Engineers for the next seven years.¹⁵ This early and consistent involvement in the design for the bridge as consulting architect is evident in his design of the largest components, such as the towers, as well as the human-scale elements of the bridge like the handrails and light standards. The Board of Engineers engaged Morrow for the "architectural work" of the main towers above the water line including the metal sheathing of the struts, the above ground anchorages (north and south), toll houses, service buildings, and "hand rail, seats, and electroliers" by 1931, and ultimately, he also designed the treatments of the concrete piers and pylons, the arch over Fort Point, and the color of the bridge.¹⁶

The minutes of the Board of Engineers' meetings, and correspondence and reports by Morrow and Strauss also reveal that the designers accounted for the pedestrian and motorist experience and use of the bridge. Strauss claimed in 1933 that "... the extraordinary scenic setting that this one site alone presents...will make it a signtseer's Mecca. For the same reason, it is the only bridge the decks of which will afford the incomparable view that has made the Golden Gate famous. To permit that view, the sidewalks are built as broad promenades, with rest seats at intervals." The "rest seats" were not ultimately constructed, but visitor experience and views remained central to the design of several elements of the bridge at the deck level. The Board of Engineers specifically addressed the hand railings again in July 1934, while discussing their attempt "to avoid conflict with the vision of motorists" and remain consistent with the European precedence of railings about one meter high (roughly 3.3 feet). The engineers ultimately decided that it was "...impossible to improve the position of the handrailing without changing the sidewalk level [and] the decision was to leave the railing height at 4 feet."

After the bridge opened in May 1937, Morrow summarized his design goals for the bridge, which he considered to be "predominantly 'industrial' in character," explaining that:

Architectural work on the Golden Gate Bridge was not an act of posthumous deification, but proceeded concurrently with the development of the engineering design. The ideal actualizing design work was to repudiate the devastating obligation to be artistic. Superfluous features were excluded, and interest was secured by the proportioning and handling of necessities.

¹⁴ Historic American Buildings Survey, Data Sheets for HABS CA-1239, Library of Congress, accessed online: www.loc.gov; HABS, Catalogue of the Measured Drawings and Photographs of the Survey in the Library of Congress, March 1, 1941 (Washington, D.C.: US GPO, 1941), 48.

¹⁵ Consulting Board of Engineers for the Golden Gate Bridge, Minutes, July 16 and 17, 1934, Charles Derleth Papers, Box 1, Water Resources Center Archives, University of California, Berkeley.

¹⁶ Irving F. Morrow to Joseph B. Strauss, February 19, 1931, and "Architectural Work on the Golden Gate Bridge," typescript, June 14, 1937, "Irving F. Morrow (and Gertrude C. Morrow) Collection, 1914-1958," Project III.14, Environmental Design Archives, College of Environmental Design, University of California, Berkeley.

¹⁷ "Physical Characteristics of the Golden Gate Bridge compiled by Joseph B. Strauss, Chief Engineer," typescript, received January 28, 1933, "Irving F. Morrow (and Gertrude C. Morrow) Collection, 1914-1958," Project III.21, Environmental Design Archives, College of Environmental Design, University of California, Berkeley.

¹⁸ Consulting Board of Engineers for the Golden Gate Bridge, Minutes, July 16 and 17, 1934, Charles Derleth Papers, Box 1, Water Resources Center Archives, University of California, Berkeley.

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This was true, asserted Morrow, of not only the major structural components, but also the "handrails, electroliers, etc., where of concrete are reduced to lowest terms, and where of metal are designed of structural steel shapes, utilizing appropriate techniques of fabrication and assembly to motivate design." ¹⁹

The Golden Gate Bridge, as evaluated in the 1997 nomination, is a system of contributing structures that rely upon each to achieve the overall effect of their design. The basic components of the main suspension span and side spans, the pylons, approach viaducts, and Fort Point Arch, are also interconnected with the other contributing elements: the Presidio Approach Road and the Round House. The verbal boundary of the property is delineated in the attached 1997 nomination. The Toll Plaza Undercrossing (34 0069) is also an original component of the Golden Gate Bridge that appears to be eligible as a contributing element of the bridge, but was not individually evaluated in the 1993 or 1997 surveys. The Toll Plaza Undercrossing (34 0069) is also listed in the NRHP as a contributing element of the Presidio of San Francisco National Historic Landmark.²⁰ The tunnel-like undercrossing is a single span concrete tee beam structure designed to allow vehicular traffic and pedestrians to cross from one side of the roadway to the other underneath the Toll Plaza using surface streets. The west side of the bridge is directly underneath the Administration Building (a non-contributing element because of integrity loss, according to both the 1993 and 1997 surveys), as shown in Figure 1 and Photographs 10-11. The rest of the bridge carries the lanes of traffic as they pass through the toll booths. Caltrans bridge logs indicate that the undercrossing is about 33' long and 291' wide, and that it has not undergone major widening or extension since it was completed in 1936.²¹ The 1997 nomination included the Toll Plaza area within the proposed NHL boundaries because the plaza serves as the southern ending of the main bridge element and links it to the contributing southern approach road. The Toll Plaza Undercrossing was constructed as part of the original Golden Gate Bridge and its Toll Plaza and, therefore, appears to be a contributing element of the property.

The primary character-defining elements and decorative features of the bridge and its contributing elements are its major structural elements (the suspension bridge anchorages, pylons, piers, towers, main span and side spans), the plate girder bridge, arch bridge, and truss bridges of the approaches, the southern approach roadway (Doyle Drive), main suspension cables, Round House, and Toll Plaza Undercrossing. The Art Deco / Moderne design of these structures is a high ranking character-defining feature of all of these structures and their use within the overall bridge. The railings from the original construction and railings replicated to match original, as well as the layout of the sidewalks – width and construction around piers and pylons – that allow pedestrian use of bridge are essential character-defining features of the property. Although the sidewalks have been extended and widened, they continue to serve as important, human scale features of the bridge that make it readily accessible to the commuting and visiting public.

Other character-defining features that are important in conveying the artistic value of the property are the electroliers, or light standards, the International Orange paint color, and remaining concrete railings. The previous evaluations specifically identified the light standards and pedestrian railings as contributing elements of the property, and both were designed by consulting architect Irving F. Morrow. "In addition to recommending the red vermilion (known as "international orange") paint color that still graces the Bridge today, Mr. Morrow was largely responsible for the architectural enhancements that define the Bridge's Art Deco form. The pedestrian railings were simplified to modest, uniform posts placed far enough apart to allow motorists an unobstructed view. The electroliers (light posts) took on a lean, angled form and decorative cladding was added to the portal bracing of the main towers."

*Required Information

¹⁹ Irving F. Morrow to Ernest Born, September 26, 1938, "Irving F. Morrow (and Gertrude C. Morrow) Collection, 1914-1958," Project III.14, Environmental Design Archives, UC, Berkeley.

²⁰ National Park Service, "National Historic Landmark Nomination for the Golden Gate Bridge," August 13, 1997; Caltrans, "2006 Statewide Historic Bridge Inventory Update," and see HRER, Appendix D.

²¹ Caltrans, "Structure & Maintenance Investigation, Log of Bridges on State Highways," July 2007, accessed online at: http://www.dot.ca.gov/hq/structur/strmaint/brlog/logpdf/logd04.pdf.

²² Stahl, et al., *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May* 2007, 173. **DPR 523L (1/95)**

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Overall, the Golden Gate Bridge has lost some historic integrity through the course of seventy years of operation, maintenance, and improvements. Nevertheless, previous effects analysis has not identified adverse effects to the character-defining features of the bridge, and the property clearly conveys its significance as an excellent example of the incorporation of architectural styling to 1930s state-of-the art engineering, as clarified by this update and as recognized by the state, local, and federal historic preservation programs described herein.

*B11. Additional Resource Attributes: (HP4) Ancillary building (Round House Gift Center building)

***B12**. **References**: Please also consult references included with the attached 1993 and 1997 surveys. Additional references consulted for the preparation of this update form include:

California Department of Transportation, "Structure & Maintenance Investigation, Historical Significance – State Agency Bridges," November 2007, accessed online: http://www.dot.ca.gov/hq/structur/strmaint/hs_state.pdf.

______, "Structure & Maintenance Investigation, Log of Bridges on State Highways," July 2007, accessed online at: http://www.dot.ca.gov/hq/structur/strmaint/brlog/logpdf/logd04.pdf.

_____, Stephen Mikesell, "HRER Approaches to the Golden Gate Bridge [Presidio Viaduct (Bridge 34 0019) and Marina Viaduct (34 0014)]," 1987.

California Office of Historic Preservation, "Directory of Properties in the Historic Property Data File for San Francisco County," as of December 2007, on file with Northwest Information Center.

District, "Golden Gate Bridge Lighting Facts," http://goldengatebridge.org/research/, accessed January 2008.

______, "Overview of Golden Gate Bridge Seismic Retrofit Updated January 2007" accessed online February 26, 2008 http://goldengatebridge.org/projects/retrofit.php.

______, "Toll History," and "Golden Gate Bridge FasTrak System Timeline," http://goldengatebridge.org/research/, accessed January 2008.

Historic American Buildings Survey, Presidio of San Francisco, HABS # CA-1100-1114, 1173, 1174, 1212-1216, 1239, and 2269.

______, Catalogue of the Measured Drawings and Photographs of the Survey in the Library of Congress, March 1, 1941 (Washington, D.C.: US GPO, 1941).

Historic American Engineering Record, Golden Gate Bridge, HAER # CA-31 (1984).

Homme, Oscar. FHWA, "Request for Determination of Eligibility for the Golden Gate Bridge," 1979.

MacDonald Architects. "HASR: Proposed Seismic Retrofit Project for the Golden Gate Bridge," (1995).

Martini, John. Fort Point: Sentry at the Golden Gate. [San Francisco]: Golden Gate National Park Association, c1991.

Mol, Caspar. MacDonald Architects, "Caltrans Architectural Inventory and Evaluation Form for the Golden Gate Bridge," November 1993.

National Park Service, "National Historic Landmark Nomination for the Golden Gate Bridge," August 13, 1997.

Stahl, Frank L., and Daniel E. Mohn, and Mary C. Currie, *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007* (San Francisco, CA: Golden Gate Bridge, Highway and Transportation District, 2007).

San Francisco Historical Photograph Collection. San Francisco Public Library. Accessed online at: http://sfpl.org/librarylocations/sfhistory/sfphoto.htm

San Francisco Planning Department, Landmarks Preservation Advisory Board, Golden Gate Bridge, case file for Landmark No. 222, 1999.

*B14. Evaluator: Meta Bunse *Date of Evaluation: April 2008

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Figures:



Figure 1. Detail of 1937 photograph showing Toll Plaza and bridge administration building, with west entrance to the Toll Plaza Undercrossing (34 0069) visible underneath the southern end of the building. (San Francisco History Center, San Francisco Public Library)





Figure 2. Photographs of sidewalk, railing, light standards and roadway. At left, just days before the bridge opened in May 1937, with original light fixtures. (San Francisco History Center, San Francisco Public Library) At right, showing replaced light fixtures, by photographer Jet Lowe, 1984. (HAER CA-31, www.loc.gov). See Photograph 6, below for a view of the new public safety railing.

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Figure 3. Detail of 1950 photograph showing "Stop – Pay Toll" sign for northbound traffic. Original light standard with suspended light fixture visible at right. (San Francisco History Center, San Francisco Public Library)



Figure 4. Toll Plaza in 1952, showing clock at center of toll canopy as installed in 1949. (District, 2007 *Report of the Chief Engineer*)

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Figure 5. Photograph of east sidewalk, facing North Viaduct before 1980s sidewalk widening and extension projects. Arrow indicates no west sidewalk north of Pylon N1. (District, 2007 *Report of the Chief Engineer*)

Figure 6. Specifications of original sidewalks when the bridge opened in May 1937, as described in the 2007 *Report of the Chief Engineer*:

Separated from the roadway by a 2 foot 6 inch high steel traffic curb, the Bridge, as built, included a pedestrian walkway along its east and west faces. This walkway consisted of a 3½ inch thick concrete slab supported by steel framework extending from the roadway structure and was approximately 14½ inches higher than the roadway. The sidewalks were originally constructed as follows:

West Sidewalk, from the San Francisco abutment north to pylon N2, it was 10 feet wide, with the following exceptions:

- From pylon S2 to S1, the portion over the Fort Point arch, the sidewalk was 16 feet wide.
- The sidewalk remained at 10 feet up to just north of pylon N1, where it flared out to 33 feet to pylon N2.
- There was no sidewalk at all north of pylon N2.

East Sidewalk, from the San Francisco abutment to pylon N2, the sidewalk was 10 feet wide, with the following exceptions:

- From pylon S2 to S1, the portion over the Fort Point arch, the sidewalk was 16 feet wide.
- The sidewalk remained at 10 feet up to just north of pylon N1, where it flared out to 33 feet to pylon N2.
- From pylon N2 to the Marin abutment the sidewalk was 6 feet wide. 23

²³ Stahl, et al., *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May* 2007, 105. **DPR 523L (1/95)**

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Photographs:



Photograph 1. View of west side of bridge, camera facing south, August 2007. [Source: MacDonald Architects]



Photograph 2. View of east side of bridge from Fort Point, camera facing north, August 2007. [Source: MacDonald Architects]

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Photographs:



Photograph 3. View of west side of the bridge showing South Viaduct, camera facing northeast, August 2007. [Source: MacDonald Architects]



Photograph 4. View of North Viaduct from Vista Point, camera facing south.

[Source: MacDonald Architects]

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Photographs:



Photograph 5. View of bridge deck and towers (right), camera facing north, March 2007. [Source: JRP Historical Consulting, LLC]

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Photographs:



Photograph 6. View of north viaduct, showing safety railing, camera facing north, November 2007. [Source: JRP Historical Consulting, LLC]



Photograph 7. Seismic retrofit in progress at Fort Point Arch, camera facing northwest, March 2007. [Source: JRP Historical Consulting, LLC]

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Photograph 8. Toll booths and canopy, camera facing northeast, March 2007. [Source: JRP Historical Consulting, LLC]



Photograph 9. Southbound lanes approaching Toll Plaza, view northeast, March 2007. [Source: JRP Historical Consulting, LLC]

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Photograph 10. West side of Toll Plaza Undercrossing (34 0069), view north, April 2008. [Source: JRP Historical Consulting, LLC]



Photograph 11. East side of Toll Plaza Undercrossing (34 0069), view southwest, April 2008. [Source: JRP Historical Consulting, LLC]

FOE: Golden Gate Bridge Moveable Median Barrier Project (Revised Draft)

October 2011

APPENDIX D: Golden Gate Bridge Historic Status

OHP Historic Properties Data File

006948 38-001336 SR 101 GOLDEN GATE BRIDGE SAN FRANCISCO 1933 NAT.REG. 38-0043 06/26/97 7J

PRESERVATION * * * MARIN County. Page 199 10-05-10 ROPERTY-NUMBER PRIMARY-# STREET.ADDRESS...... NAMES...... CITY.NAME...... OWN YR-C OHP-PROG. PRG-REFERENCE-NUMBER STAT-DAT NRS CRIT

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HIST.SURV. 4101-0663-0000 01/01/80 252 HIST.RES. SHL-0974-0000 06/18/87 1CL PROJ.REVW. 10/28/77 25

701 records listed.

		District 04			
Marin C	ounty				
Bridge Number	Bridge Name	Location	Historical Significance	Year Built \	Year Wid/Ext
27 0002	FORBES OH	04-MRN-101-13.25-SRF	5. Bridge not eligible for NRHP	1957	1987
27 0003	ARROYO DE SAN JOSE	04-MRN-101-18.15	5. Bridge not eligible for NRHP	1928	1964
27 0004	MILLER CREEK	04-MRN-101-15.35	5. Bridge not eligible for NRHP	1952	1987
27 0006	NORTH BRANCH GALLINAS CREEK	04-MRN-101-13.99-SRF	5. Bridge not eligible for NRHP	1951	1961
27 0007	CALIFORNIA PARK OVERHEAD	04-MRN-101-9.63-SRF	5. Bridge not eligible for NRHP	1958	2003
27 0008	CORTE MADERA CREEK	04-MRN-101-8.47-LKSP	5. Bridge not eligible for NRHP	1957	2004
27 0008K	CORTE MADERA CREEK	04-MRN-101-8.47-LKSP	5. Bridge not eligible for NRHP	1959	
27 0008S	CORTE MADERA CREEK	04-MRN-101-8.47-LKSP	5. Bridge not eligible for NRHP	1961	1975
27 0009	WORNUM DRIVE UC	04-MRN-101-8.02-CMAD	5. Bridge not eligible for NRHP	1929	1975
27 0010	RICHARDSON BAY BR & SEP	04-MRN-101-4.03-SAUS	5. Bridge not eligible for NRHP	1957	1973
27 0011L	NOVATO CREEK	04-MRN-037-11.96-NVTO	5. Bridge not eligible for NRHP	1959	
27 0011R	NOVATO CREEK	04-MRN-037-11.96-NVTO	5. Bridge not eligible for NRHP	1959	
27 0012	SIMONDS SLOUGH	04-MRN-037-13.04-NVTO	5. Bridge not eligible for NRHP	1959	
27 0013	PETALUMA RIVER	04-MRN-037-14.47	5. Bridge not eligible for NRHP	1958	
27 0014	NORTH SAN PEDRO ROAD UC	04-MRN-101-12.69-SRF	5. Bridge not eligible for NRHP	1979	1987
27 0014S	NORTH SAN PEDRO ROAD UC	04-MRN-101-12.69-SRF	5. Bridge not eligible for NRHP	1970	
27 0018	COYOTE CREEK	04-MRN-00142	5. Bridge not eligible for NRHP	1954	
27 0019	REDWOOD CREEK	04-MRN-001-6.02	5. Bridge not eligible for NRHP	1926	1970
27 0020	OLEMA CREEK	04-MRN-001-22.81	5. Bridge not eligible for NRHP	1928	
27 0021	OLEMA CREEK	04-MRN-001-22.96	5. Bridge not eligible for NRHP	1928	
27 0022	LAGUNITAS CREEK OVERFLOW	04-MRN-001-28.39	5. Bridge not eligible for NRHP	1929	
27 0023	LAGUNITAS CREEK	04-MRN-001-28.51	5. Bridge not eligible for NRHP	1929	
27 0024	LAGUNITAS CREEK OVERFLOW	04-MRN-001-28.56	5. Bridge not eligible for NRHP	1929	
27 0025	ELLIS CREEK	04-MRN-001-34.97	5. Bridge not eligible for NRHP	1931	
27 0026	WALKER CREEK	04-MRN-001-44.45	5. Bridge not eligible for NRHP	1982	
27 0027	STEMPLE CREEK	04-MRN-001-47.41	5. Bridge not eligible for NRHP	1982	
27 0028	ESTERO AMERICANO	04-MRN-001-50.47	5. Bridge not eligible for NRHP	1925	
27 0030	LINCOLN AVENUE UC	04-MRN-101-12.19-SRF	5. Bridge not eligible for NRHP	1938	1987
27 0033S	SAN RAFAEL HARBOR	04-MRN-101-10.81-SRF	5. Bridge not eligible for NRHP	1941	1953
27 0034	LINDEN LANE UC	04-MRN-101-11.64-SRF	5. Bridge not eligible for NRHP	1947	1987
27 0035L	SAN RAFAEL VIADUCT	04-MRN-101-10.72-SRF	5. Bridge not eligible for NRHP	1965	1971
27 0035R	SAN RAFAEL VIADUCT	04-MRN-101-10.72-SRF	5. Bridge not eligible for NRHP	1941	1971
27 0038	SAUSALITO ROAD UC	04-MRN-10132-SAUS	5. Bridge not eligible for NRHP	1935	1969
27 0039	FORT CRONKHITE TUNNEL UC	04-MRN-000-0-SAUS	1. Bridge is on NRHP	1918	1994
27 0040L	WALDO TUNNEL	04-MRN-10189-SAUS	2. Bridge is eligible for NRHP	1937	
27 0040R	WALDO TUNNEL	04-MRN-10189-SAUS	2. Bridge is eligible for NRHP	1954	
27 0042	WALDO UNDERCROSSING	04-MRN-101-3.33-SAUS	5. Bridge not eligible for NRHP	1943	1996
27 0050	COLEMAN SCHOOL POC	04-MRN-101-11.41-SRF	5. Bridge not eligible for NRHP	1969	
27 0052	GOLDEN GATE BRIDGE	04-MRN-101-L.01	Bridge is eligible for NRHP	1937	
27 0054	FALLON CREEK	04-MRN-001-47.6	5. Bridge not eligible for NRHP	2001	
27 0056	TOMASINI CANYON	04-MRN-001-29.85	5. Bridge not eligible for NRHP	1925	1978
27 0059	LUCAS VALLEY ROAD UC	04-MRN-101-14.71-SRF	5. Bridge not eligible for NRHP	1952	1987
27 0060F	S101-E580 CONNECTOR OC	04-MRN-101-9.94-SRF	5. Bridge not eligible for NRHP	2009	



	I	District 04		
San Frai	ncisco County			
Bridge Number	Bridge Name	Location	Historical Significance	Year Year Built Wid/Ex
34 0001	SUNSET BLVD UC	04-SF-035-2.12-SF	5. Bridge not eligible for NRHP	1931
34 0002	LAKESIDE EQUESTRIAN & PUC	04-SF-0351-SF	5. Bridge not eligible for NRHP	1922 1956
34 0003	SFOBB WEST BAY	04-SF-080-6.35-SF	1. Bridge is on NRHP	1936 1962
34 0004	YERBA BUENA CROSSING	04-SF-080-7.72-SF	1. Bridge is on NRHP	1936 1962
34 0007L	SFOBB EAST-SPAN SKYWAY OAKLAND TOUCHDOWN	04-SF-080-8.7-SF	5. Bridge not eligible for NRHP	2008
34 0007R	SFOBB EAST-SPAN SKYWAY OAKLAND TOUCHDOWN	04-SF-080-8.7-SF	5. Bridge not eligible for NRHP	2008
34 0012	MISSION STREET OC	04-SF-280-R3.11-SF	5. Bridge not eligible for NRHP	1963
34 0012Y	MISSION STREET OC	04-SF-000-0-SF	5. Bridge not eligible for NRHP	1951
34 0014	MARINA VIADUCT	04-SF-101-8.33-SF	1. Bridge is on NRHP	1936
34 0015	WEST PACIFIC AVENUE UC	04-SF-001-6.18-SF	1. Bridge is on NRHP	1939
34 0016	PRESIDIO TUNNEL	04-SF-001-6.33-SF	1. Bridge is on NRHP	1938
34 0017	KOBBE AVENUE UC	04-SF-001-6.67-SF	1. Bridge is on NRHP	1939
34 0018	RUCKMAN AVENUE UC	04-SF-001-6.86-SF	1. Bridge is on NRHP	1939
34 0019	PRESIDIO VIADUCT	04-SF-101-9.14-SF	1. Bridge is on NRHP	1936 1939
34 0020	N101-S1 CONNECTOR UC	04-SF-101-9.47-SF	5. Bridge not eligible for NRHP	1939 1955
34 0021	ALEMANY BLVD OC	04-SF-001-R.11-SF	5. Bridge not eligible for NRHP	1950 1966
34 0022	JFK DRIVE UC	04-SF-001-4.45-SF	1. Bridge is on NRHP	1936
34 0023G	N1-N101 CONNECTOR PUC	04-SF-001-7.07-SF	1. Bridge is on NRHP	1939
34 0024	HILLTOP PUC	04-SF-03525-SF	5. Bridge not eligible for NRHP	1956
34 0025G	N101-S1 CONNECTOR PUC	04-SF-101-9.42-SF	5. Bridge not eligible for NRHP	1939
34 0026	ALEMANY BLVD UC	04-SF-280-R.46-SF	5. Bridge not eligible for NRHP	1966 1972
34 0030	THIRD STREET UC	04-SF-10177-SF	5. Bridge not eligible for NRHP	1954 1970
34 0030S	THIRD STREET UC	04-SF-10177-SF	5. Bridge not eligible for NRHP	1955
34 0031	HARKNESS AVENUE POC	04-SF-1017-SF	5. Bridge not eligible for NRHP	1970
34 0032	SILVER AVENUE OC	04-SF-101-1.77-SF	5. Bridge not eligible for NRHP	1954
34 0033	ALEMANY CIRCLE UC	04-SF-101-2.03-SF	5. Bridge not eligible for NRHP	1950
34 0034	CESAR CHAVEZ UC	04-SF-101-2.92-SF	5. Bridge not eligible for NRHP	1951 1968
34 0034S	CESAR CHAVEZ UC	04-SF-101-2.95-SF	5. Bridge not eligible for NRHP	1974
34 0035	23RD STREET OC	04-SF-101-3.37-SF	5. Bridge not eligible for NRHP	1953
34 0040G	N1-S101 CONNECTOR OC	04-SF-001-6.97-SF	Bridge hat engine for Willing Bridge is on NRHP	1939
34 0044	BROTHERHOOD WAY UC	04-SF-001-R.31-SF	5. Bridge not eligible for NRHP	1952
34 0045	CORTLAND AVENUE UC	04-SF-101-2.28-SF	5. Bridge not eligible for NRHP	1950 1968
34 0046	SOUTHERN FREEWAY VIADUCT	04-SF-280-R4.4-SF	5. Bridge not eligible for NRHP	1964
34 0040 34 0047S	BAYSHORE BLVD UC	04-SF-101-2.84-SF	Bridge not eligible for NRHP	1950
34 0048	18TH STREET POC	04-SF-101-3.96-SF	Bridge not eligible for NRHP	1953 1968
34 0050	25TH STREET POC	04-SF-101-3.22-SF	Bridge not eligible for NRHP	1953
	22ND STREET POC			
34 0051 34 0054Z		04-SF-101-3.53-SF	5. Bridge not eligible for NRHP5. Bridge not eligible for NRHP	1953 1955 1993
	TERMINAL SEPARATION	04-SF-080-5.45-SF	•	1955 1993
34 0056	PAUL AVENUE UC	04-SF-101-1.11-SF	Bridge not eligible for NRHP Bridge not eligible for NRHP	1954 1970
34 0057L	BACON STREET UC	04-SF-101-1.41-SF	Bridge not eligible for NRHP Bridge not eligible for NRHP	1954
34 0057R	BACON STREET UC	04-SF-101-1.41-SF	5. Bridge not eligible for NRHP	1960
34 0060	COUNTY LINE UC	04-SF-10101-SF	5. Bridge not eligible for NRHP	1954 1972
34 0061	BLANKEN AVENUE UC	04-SF-10118-SF	5. Bridge not eligible for NRHP	1954



ISCO COUNTY Bridge Name SUNSET BLVD UC LAKESIDE EQUESTRIAN & PUC SFOBB WEST BAY YERBA BUENA CROSSING SFOBB EAST-SPAN SKYWAY OAKLAND TOUCHDOWN SFOBB EAST-SPAN SKYWAY OAKLAND TOUCHDOWN MISSION STREET OC MISSION STREET OC MARINA VIADUCT		Historical Significance 5. Bridge not eligible for NRHP 5. Bridge not eligible for NRHP 1. Bridge is on NRHP 1. Bridge is on NRHP 5. Bridge not eligible for NRHP 5. Bridge not eligible for NRHP	Year Built V 1931 1922 1936 1936 2008	Wid/Ext 1956
Bridge Name SUNSET BLVD UC LAKESIDE EQUESTRIAN & PUC SFOBB WEST BAY YERBA BUENA CROSSING SFOBB EAST-SPAN SKYWAY OAKLAND TOUCHDOWN SFOBB EAST-SPAN SKYWAY OAKLAND TOUCHDOWN MISSION STREET OC MISSION STREET OC MARINA VIADUCT	04-SF-035-2.12-SF 04-SF-0351-SF 04-SF-080-6.35-SF 04-SF-080-7.72-SF 04-SF-080-8.7-SF 04-SF-080-8.7-SF 04-SF-280-R3.11-SF	5. Bridge not eligible for NRHP5. Bridge not eligible for NRHP1. Bridge is on NRHP1. Bridge is on NRHP5. Bridge not eligible for NRHP	Built V 1931 1922 1936 1936	Wid/Ext
LAKESIDE EQUESTRIAN & PUC SFOBB WEST BAY YERBA BUENA CROSSING SFOBB EAST-SPAN SKYWAY OAKLAND TOUCHDOWN SFOBB EAST-SPAN SKYWAY OAKLAND TOUCHDOWN MISSION STREET OC MISSION STREET OC MARINA VIADUCT	04-SF-0351-SF 04-SF-080-6.35-SF 04-SF-080-7.72-SF 04-SF-080-8.7-SF 04-SF-080-8.7-SF 04-SF-280-R3.11-SF	5. Bridge not eligible for NRHP1. Bridge is on NRHP1. Bridge is on NRHP5. Bridge not eligible for NRHP	1922 1936 1936	
SFOBB WEST BAY YERBA BUENA CROSSING SFOBB EAST-SPAN SKYWAY OAKLAND TOUCHDOWN SFOBB EAST-SPAN SKYWAY OAKLAND TOUCHDOWN MISSION STREET OC MISSION STREET OC MARINA VIADUCT	04-SF-080-6.35-SF 04-SF-080-7.72-SF 04-SF-080-8.7-SF 04-SF-080-8.7-SF 04-SF-280-R3.11-SF	 Bridge is on NRHP Bridge is on NRHP Bridge not eligible for NRHP 	1936 1936	
YERBA BUENA CROSSING SFOBB EAST-SPAN SKYWAY OAKLAND TOUCHDOWN SFOBB EAST-SPAN SKYWAY OAKLAND TOUCHDOWN MISSION STREET OC MISSION STREET OC MARINA VIADUCT	04-SF-080-7.72-SF 04-SF-080-8.7-SF 04-SF-080-8.7-SF 04-SF-280-R3.11-SF	 Bridge is on NRHP Bridge not eligible for NRHP 	1936	
SFOBB EAST-SPAN SKYWAY OAKLAND TOUCHDOWN SFOBB EAST-SPAN SKYWAY OAKLAND TOUCHDOWN MISSION STREET OC MISSION STREET OC MARINA VIADUCT	04-SF-080-8.7-SF 04-SF-080-8.7-SF 04-SF-280-R3.11-SF	5. Bridge not eligible for NRHP		1962
SFOBB EAST-SPAN SKYWAY OAKLAND TOUCHDOWN MISSION STREET OC MISSION STREET OC MARINA VIADUCT	04-SF-080-8.7-SF 04-SF-280-R3.11-SF	• •	2008	1962
MISSION STREET OC MISSION STREET OC MARINA VIADUCT	04-SF-280-R3.11-SF	5. Bridge not eligible for NRHP	2000	
MISSION STREET OC MARINA VIADUCT		<u> </u>	2008	
MARINA VIADUCT	04-SE-000-0-SE	5. Bridge not eligible for NRHP	1963	
	04-01-000-0-0F	5. Bridge not eligible for NRHP	1951	
WEST BASIES AVENUE US	04-SF-101-8.33-SF	1. Bridge is on NRHP	1936	
WEST PACIFIC AVENUE UC	04-SF-001-6.18-SF	1. Bridge is on NRHP	1939	
PRESIDIO TUNNEL	04-SF-001-6.33-SF	1. Bridge is on NRHP	1938	
KOBBE AVENUE UC	04-SF-001-6.67-SF	1. Bridge is on NRHP	1939	
RUCKMAN AVENUE UC	04-SF-001-6.86-SF	1. Bridge is on NRHP	1939	
PRESIDIO VIADUCT	04-SF-101-9.14-SF	1. Bridge is on NRHP	1936	1939
N101-S1 CONNECTOR UC	04-SF-101-9.47-SF	5. Bridge not eligible for NRHP	1939	1955
ALEMANY BLVD OC	04-SF-001-R.11-SF	5. Bridge not eligible for NRHP	1950	1966
JFK DRIVE UC	04-SF-001-4.45-SF	1. Bridge is on NRHP	1936	
N1-N101 CONNECTOR PUC	04-SF-001-7.07-SF	1. Bridge is on NRHP	1939	
HILLTOP PUC	04-SF-03525-SF	5. Bridge not eligible for NRHP	1956	
N101-S1 CONNECTOR PUC	04-SF-101-9.42-SF	5. Bridge not eligible for NRHP	1939	
ALEMANY BLVD UC	04-SF-280-R.46-SF	5. Bridge not eligible for NRHP	1966	1972
THIRD STREET UC	04-SF-10177-SF	•	1954	1970
THIRD STREET UC			1955	
HARKNESS AVENUE POC		•	1970	
SILVER AVENUE OC		•		
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				1972
OCCIVITI LINE OC	0- 01 - 10 10 1 - 01	o. Dilage not eligible for NIVLIF	1354	131/
ATTHSACC2NBCSB1122TPBB	LEMANY BLVD UC HIRD STREET UC HIRD STREET UC ARKNESS AVENUE POC	LEMANY BLVD UC HIRD STREET UC HIRD STREET UC ARKNESS AVENUE POC LEMANY CIRCLE UC ESAR CHAVEZ UC BESAR	LEMANY BLVD UC 04-SF-280-R.46-SF 5. Bridge not eligible for NRHP HIRD STREET UC 04-SF-10177-SF 5. Bridge not eligible for NRHP HIRD STREET UC 04-SF-10177-SF 5. Bridge not eligible for NRHP HIRD STREET UC 04-SF-10177-SF 5. Bridge not eligible for NRHP ARKNESS AVENUE POC 04-SF-10177-SF 5. Bridge not eligible for NRHP ILVER AVENUE OC 04-SF-101-1.77-SF 5. Bridge not eligible for NRHP ILVER AVENUE OC 04-SF-101-2.03-SF 5. Bridge not eligible for NRHP ESAR CHAVEZ UC 04-SF-101-2.92-SF 5. Bridge not eligible for NRHP ESAR CHAVEZ UC 04-SF-101-2.92-SF 5. Bridge not eligible for NRHP BRID STREET OC 04-SF-101-3.37-SF 5. Bridge not eligible for NRHP BRID STREET OC 04-SF-001-6.97-SF 1. Bridge is on NRHP ROTHERHOOD WAY UC 04-SF-001-R.31-SF 5. Bridge not eligible for NRHP OUTHERN FREEWAY VIADUCT 04-SF-101-2.28-SF 5. Bridge not eligible for NRHP AYSHORE BLVD UC 04-SF-101-3.96-SF 5. Bridge not eligible for NRHP BTH STREET POC 04-SF-101-3.39-SF 5. Bridge not eligible for NRHP ESTH STREET POC 04-SF-101-3.35-SF 5. Bridge not eligible for NRHP AVSHORE BLVD UC 04-SF-101-3.35-SF 5. Bridge not eligible for NRHP ERMINAL SEPARATION 04-SF-080-5.45-SF 5. Bridge not eligible for NRHP AVENUE UC 04-SF-101-1.11-SF 5. Bridge not eligible for NRHP ACON STREET UC 04-SF-101-1.41-SF 5. Bridge not eligible for NRHP 5. Bridge not eligibl	LEMANY BLVD UC 04-SF-280-R.46-SF 5. Bridge not eligible for NRHP 1966 HIRD STREET UC 04-SF-10177-SF 5. Bridge not eligible for NRHP 1954 HIRD STREET UC 04-SF-10177-SF 5. Bridge not eligible for NRHP 1955 ARKNESS AVENUE POC 04-SF-1017-SF 5. Bridge not eligible for NRHP 1970 ILVER AVENUE OC 04-SF-1017-SF 5. Bridge not eligible for NRHP 1954 LEMANY CIRCLE UC 04-SF-101-2.03-SF 5. Bridge not eligible for NRHP 1950 ESAR CHAVEZ UC 04-SF-101-2.92-SF 5. Bridge not eligible for NRHP 1951 ESAR CHAVEZ UC 04-SF-101-2.92-SF 5. Bridge not eligible for NRHP 1951 ESAR CHAVEZ UC 04-SF-101-3.37-SF 5. Bridge not eligible for NRHP 1954 ESAR CHAVEZ UC 04-SF-101-3.37-SF 5. Bridge not eligible for NRHP 1954 ESAR CHAVEZ UC 04-SF-101-3.37-SF 5. Bridge not eligible for NRHP 1953 1-STO CONNECTOR OC 04-SF-010-3.35-SF 5. Bridge not eligible for NRHP 1953 1-STO CONNECTOR OC 04-SF-010-2.84-SF 5. Bridge not eligible for NRHP 1952



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San Francisco County						
Bridge Number	Bridge Name	Location	Historical Significance	Year Year Built Wid/Ext		
34 0062	LINCOLN BLVD UC	04-SF-101-9.71-SF	1. Bridge is on NRHP	1938 1955		
34 0063S	ALEMANY CIRCLE UC	04-SF-101-2.2-SF	5. Bridge not eligible for NRHP	1950		
34 0064K	ALEMANY CIRCLE UC	04-SF-101-2-SF	5. Bridge not eligible for NRHP	1954		
34 0069	TOLL PLAZA UC	04-SF-101-9.85-SF	1. Bridge is on NRHP	1936		
34 0070	280/101 IC - S101 (UPPER), N101 TO N280 (LOWER)	04-SF-101-1.63-SF	5. Bridge not eligible for NRHP	1960		
34 0070E	280/101 IC -S280 TO S101(UPP), N101 TO N280(LOWER) 04-SF-280-R4.07-SF	5. Bridge not eligible for NRHP	1966		
34 0070H	280/101 IC - NB280 & SB280 TO SB101 (WU LINE)	04-SF-101-1.48-SF	5. Bridge not eligible for NRHP	1960		
34 0071F	ALEMANY BLVD UC (RW LINE)	04-SF-101-1.94-SF	5. Bridge not eligible for NRHP	1960		
34 0072L	SFWD WATER MAIN UC	04-SF-280-R4.05-SF	5. Bridge not eligible for NRHP	1960		
34 0073	ALEMANY BLVD OC	04-SF-280-R3.87-SF	5. Bridge not eligible for NRHP	1963		
34 0074	ALEMANY BLVD OC	04-SF-280-R3.28-SF	5. Bridge not eligible for NRHP	1963		
34 0075	JUSTIN DRIVE OC	04-SF-280-R3.23-SF	5. Bridge not eligible for NRHP	1963		
34 0076	ST MARYS POC	04-SF-280-R3.53-SF	5. Bridge not eligible for NRHP	1963		
34 0077	CENTRAL VIADUCT	04-SF-101-R4.25-SF	5. Bridge not eligible for NRHP	1955		
34 0078	THERESA STREET POC	04-SF-280-R2.62-SF	5. Bridge not eligible for NRHP	1964		
34 0079K	SAN JOSE AVENUE UC	04-SF-280-R2.72-SF	5. Bridge not eligible for NRHP	1964		
34 0079L	SAN JOSE AVENUE UC	04-SF-280-R2.7-SF	5. Bridge not eligible for NRHP	1964		
34 0079R	SAN JOSE AVENUE UC	04-SF-280-R2.7-SF	5. Bridge not eligible for NRHP	1964		
34 0079S	SAN JOSE AVENUE UC	04-SF-280-R2.69-SF	5. Bridge not eligible for NRHP	1964		
34 0080	BRANCH EAST UC	04-SF-280-R2.75-SF	5. Bridge not eligible for NRHP	1964		
34 0081	MONTEREY BLVD ON-RAMP OC	04-SF-280-R2.69-SF	5. Bridge not eligible for NRHP	1964		
34 0082	PAULDING STREET OC	04-SF-280-R2.21-SF	5. Bridge not eligible for NRHP	1964 1970		
34 0083	BADEN STREET OC	04-SF-280-R2.47-SF	5. Bridge not eligible for NRHP	1964		
34 0085	ROUTE 280/82 SEPARATION	04-SF-280-R.71-SF	5. Bridge not eligible for NRHP	1964 1971		
34 0085S	SICKLES AVENUE UC	04-SF-280-R.75-SF	5. Bridge not eligible for NRHP	1964		
34 0086	SAN JOSE AVENUE OC	04-SF-280-R.9-SF	5. Bridge not eligible for NRHP	1964		
34 0087	SAN JOSE AVENUE OC	04-SF-280-R1.46-SF	5. Bridge not eligible for NRHP	1964		
34 0088	BAYSHORE VIADUCT	04-SF-101-4.12-SF	5. Bridge not eligible for NRHP	1955		
34 0089	LYELL STREET UC	04-SF-280-R2.89-SF	5. Bridge not eligible for NRHP	1964 1972		
34 0090	MONTEREY BLVD EB OC	04-SF-280-R2.82-SF	5. Bridge not eligible for NRHP	1964		
34 0091	MONTEREY BLVD WB OC	04-SF-280-R2.87-SF	5. Bridge not eligible for NRHP	1964		
34 0092Y	BOSWORTH STREET UC	04-SF-280-R2.9-SF	5. Bridge not eligible for NRHP	1964		
34 0093	HAVELOCK STREET POC	04-SF-280-R-SF	5. Bridge not eligible for NRHP	1964 1970		
34 0094	OCEAN AVENUE OC	04-SF-280-R1.77-SF	5. Bridge not eligible for NRHP	1964		
34 0095	GENEVA AVENUE OC	04-SF-280-R1.65-SF	Bridge not eligible for NRHP	1964		
34 0096	WHIPPLE AVENUE POC	04-SF-280-R1.06-SF	Bridge not eligible for NRHP	1964 1992		
34 0098	20TH STREET OC	04-SF-280-R6.39-SF	Bridge not eligible for NRHP	1968		
34 0099	18TH STREET OC	04-SF-280-R6.57-SF	Bridge not eligible for NRHP	1968		
34 0100	CHINA BASIN VIADUCT	04-SF-280-R6.61-SF	Bridge not eligible for NRHP	1971 1974		
34 0100	FAITH STREET POC	04-SF-101-2.61-SF	Bridge not eligible for NRHP	1968		
34 0102	BAYSHORE BLVD OC	04-SF-10156-SF	Bridge not eligible for NRHP	1900		
	BAYSHORE BLVD VIADUCT	04-SF-10156-SF 04-SF-101-1.14-SF	· ·	1970		
34 0104			Bridge not eligible for NRHP Bridge not eligible for NRHP			
34 0105	MARIPOSA STREET RR SEPARATION / 280 SB ONRAM	F U4-3F-20U-K0.00-3F	5. Bridge not eligible for NRHP	1968		