HISTORICAL RESOURCES EVALUATION REPORT

Golden Gate Bridge Physical Suicide Deterrent System Project

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

Project 2006-B-17
04-MRN-101-GGHT
Federal Project #: STPL-6003(030)

Prepared for:

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SUMMARY OF FINDINGS

The Golden Gate Bridge, Highway and Transportation District (District) is proposing the Golden Gate Bridge Physical Suicide Deterrent System Project (the Project) [04-MRN-101-GGHT, Project 2006-B-17; Federal Project #: STPL-6003(030)]. The District, in cooperation with the Federal Highway Administration, is the Lead Agency. The Project under study in this report proposes construction of a suicide deterrent system that would install a physical barrier on the Golden Gate Bridge that would reduce the number of injuries and deaths associated with jumping off the Bridge. JRP Historical Consulting, LLC (JRP) prepared this Historical Resources Evaluation Report (HRER) as part of the environmental compliance for the Project. The purpose of this document is to comply with applicable sections of the National Historic Preservation Act (NHPA) 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. The properties have also been evaluated in accordance with Section 15064.5(a)(2)-(3) of the California Environmental Quality Act (CEQA) Guidelines using the criteria outlined in Section 5024.1 of the California Public Resources Code.

There is one historic property within the Focused Area of Potential Effect (APE) for this Project that has been previously evaluated and determined eligible for listing in the National Register of Historic Places (NRHP): the Golden Gate Bridge.[1] The Bridge property is also eligible for listing in the California Register of Historical Resources (CRHR) and is considered a historical resource for the purposes of CEQA. The Bridge consists of multiple contributing structures, the main spans, towers, pylons and viaducts, as well as the Round House Gift Center and the Toll Plaza Undercrossing (Bridge 34 0069), all of which are located inside the Focused APE and are addressed herein. Some contributing structures of the Bridge property are located outside the Focused APE and required no further study for this Project.[2]

This HRER provides an update of the previous inventory and evaluation documents for the Golden Gate Bridge property to confirm its contributing elements, character-defining features, historic status, and recent construction and alterations. The update concludes that the Golden Gate Bridge property and the contributing elements within the Focused APE have been "determined eligible for listing in the NRHP and the CRHR," at the national level, under NRHP Criterion C and CRHR Criterion 3, with a period of significance of 1933-1938. The Golden Gate Bridge property also remains an historical resource for the purposes of CEQA.

Non-contributing elements of the Golden Gate Bridge within the Focused APE include: the Administration Building (or Toll Plaza Building) and its ancillary structures, toll booths and canopy, and bus shelters, as well as other modern additions such as telephone booths, new signs and light standards, as well as the visitor parking area. These buildings and structures are not eligible for listing in the NRHP, or the CRHR, and are not considered historical resources for the purposes of CEQA.

[1] Fort Point National Historic Site is underneath the Golden Gate Bridge, outside the Focused APE for this project.

[2] The southern approach roadway structures of the Golden Gate Bridge are contributing elements of the bridge that are outside the Focused APE. As such, the Doyle Drive viaducts (Marina Viaduct - Bridge 34 0014, and Presidio Viaduct - Bridge 34 0019), which are individually listed in the NRHP, did not require further study.

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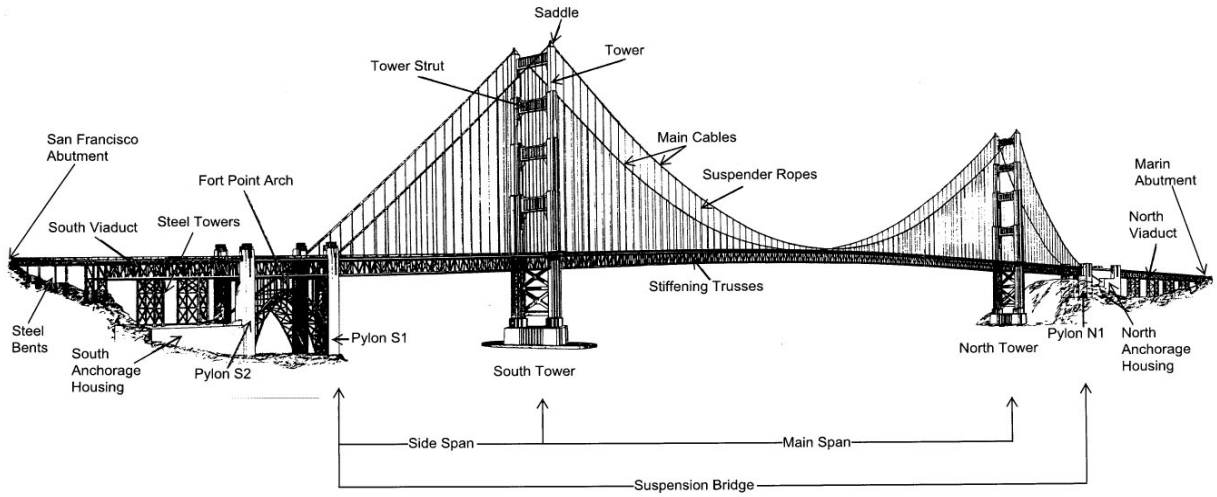
APPENDICES

1. PROJECT DESCRIPTION

The Project proposes to construct a physical suicide deterrent system along both sides of the Golden Gate Bridge (Bridge). As shown in Figures 1 and 2 (Attachment A), the Project limits are from the Marin abutment (north viaduct) to the San Francisco abutment (south viaduct). The Project APE maps are also included in Appendix A, along with Renderings 1A, 1B, 2A, 2B and 3. The APE is described below in Section 1.6.

The illustration below identifies the various structural elements of the Bridge.



Main Elements of the Golden Gate Bridge

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

The Golden Gate Bridge (the Bridge) has a symmetrical design. Vertical bridge 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 1/2 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 1/2 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. Figure 2 shows a plan view of a section of the Bridge illustrating the relationship of these Bridge elements.

Several build alternatives have been developed from the three general physical concepts considered for this Project. The alternatives were developed after the first phase of the Project, wind tunnel testing, was completed. Wind tunnel testing on the generic concepts was performed first in order to determine the limiting characteristics of each concept with respect to wind. The wind tunnel testing and analysis determined that any physical addition to the Bridge would

adversely affect the Bridge's aerodynamic stability. However, testing also determined that wind devices could be installed to mitigate the adverse effects associated with the additions.

All of the build alternatives developed and included in this document require the addition of one of two different types of wind devices. The first type of wind device is called a fairing and consists of a curved element placed at two locations below the sidewalk on the top chord of the west stiffening truss. The second type of wind device is called a winglet and consists of a curved element placed above the sidewalk at the top of the alternative posts.

The fairing wind device was previously evaluated as part of the District's seismic retrofit program and has been environmentally cleared. Therefore, this report will not discuss this device. The winglet is a new feature that has not been evaluated and as such, will be discussed in this report.

The following build alternatives would impede the ability of individuals to jump from the Bridge, as well as meet additional criteria established by the Golden Gate Bridge, Highway and Transportation District (District). During the screening process, these alternatives were evaluated for their ability to meet the Project's purpose and need, which included the District's criteria. These alternatives include:

- Alternative 1A – Add Vertical System to Outside Handrail
- Alternative 1B – Add Horizontal System to Outside Handrail
- Alternative 2A – Replace Outside Handrail with Vertical System
- Alternative 2B – Replace Outside Handrail with Horizontal System
- Alternative 3 – Add Net System that Extends Horizontally from Bridge (Add Net System)

Alternatives 1A, 2A and 3 were evaluated utilizing a fairing, while Alternatives 1B and 2B were evaluated utilizing a winglet. Each build alternative design has been developed to maintain the symmetry of the Bridge. The outside handrail posts, light posts, suspender ropes and belvederes would all remain at their current locations. There would be no changes to the stiffening truss.

1.1 Build Alternatives

Alternative 1A – Add Vertical System to Outside Handrail

Alternative 1A would construct a new barrier on top of the outside handrail (and concrete rail at north anchorage housing and north pylon). The barrier would extend 8 feet vertically from the top of the 4-foot high outside handrail for a total height of 12 feet. The barrier's vertical members would be comprised of ½-inch diameter vertical rods spaced at 6 ½ inches on center, leaving a 6-inch clear space between rods. The existing rail posts would be replaced with new 12-foot high outside rail posts at the same locations and of the same cross-section, size, material, and color of the original posts. The top horizontal header would consist of a chevron-shaped

member matching the top element of the outside handrail. The vertical rods would be attached to the horizontal header and outside handrail. The entire system would be constructed of steel that would be painted International Orange, matching the material and color of the outside handrail. Transparent panels would be installed at the belvederes and towers on both sides of the Bridge. This alternative assumes that the modification to the outside handrail on the west side of the Bridge between the two main towers and the installation of the wind fairings have been completed as part of the previously approved seismic retrofit project.

Because maintenance workers would no longer be able to climb over the outside handrail to reach the below-deck maintenance traveler, gates would be located at a spacing of 150 feet on center to generally match the locations of the existing light posts and gates on the public safety railing. The gates would be 8 feet wide and 8 feet high (two 4 foot wide by 8 foot high panels), and match the appearance of the vertical system. The frame for each gate door would be constructed of 2-inch by 2-inch steel members. The gates would be located on top of the outside handrail. The outside handrail would remain in place.

Alternative 1B – Add Horizontal System to Outside Handrail

Alternative 1B would construct a new barrier on top of the outside handrail (and concrete rail at north anchorage housing and north pylon) consisting of ⅜-inch diameter horizontal steel cables at 6 inches on center leaving 5 ⅝ inches clear space between cables. The cable diameter matches the cables on the public safety railing. The new barrier would extend 8 feet above the top of the 4-foot high outside handrail for a total height of 12 feet. The existing rail posts would be replaced with new 12-foot high outside rail posts at the same locations and of the same cross-section, size, material, and color of the original posts. The entire system would be constructed of steel that would be painted International Orange, matching the material and color of the outside handrail. Transparent panels would be installed at the belvederes and towers on both sides of the Bridge.

A winglet would be placed on top of the outside rail posts to ensure aerodynamic stability and impede climbing over the barrier. The winglet would be a transparent 42-inch wide panel with a slight concave curvature extending approximately 2 feet over the sidewalk. The winglet would run the length of the suicide deterrent barrier, except at the north and south towers. The winglet would be notched at the suspender ropes and light posts.

Because maintenance workers would no longer be able to climb over the outside handrail to reach the below-deck maintenance traveler, gates would be located at a spacing of 150 feet on center to generally match the locations of the existing light posts and gates on the public safety railing. The gates would be 8 feet wide and 8 feet high (two 4 foot wide by 8 foot high panels), and match the appearance of the horizontal system. The frame for each gate door would be constructed of 2-inch by 2-inch steel members. The gates would be located on top of the outside handrail. The outside handrail would remain in place.

Alternative 2A – Replace Outside Handrail with Vertical System

Alternative 2A would construct a new vertical 12-foot high barrier consisting of ½-inch diameter vertical steel rods spaced at 4 ½ inches on center, leaving a 4-inch clear space between rods. A rub rail would be installed at the same height as the public safety railing (4 feet 6 inches). The existing rail posts would be replaced with new 12-foot high outside rail posts at the same locations and of the same cross-section, size, material, and color of the original posts. The top horizontal header would consist of a chevron-shaped member matching the top element of the outside handrail to be removed. The vertical rods would be attached to the header and bottom barrier element. The entire system would be constructed of steel that is painted International Orange, matching the material and color of the outside handrail. Transparent panels would be installed along the upper 8 feet at the belvederes and towers on both sides of the Bridge. This alternative assumes that the modification to the outside handrail on the west side of the Bridge between the two main towers and the installation of the wind fairings have been completed as part of the previously approved seismic retrofit project.

Because maintenance workers would no longer be able to climb over the outside handrail to reach the below-deck maintenance traveler, gates would be located at a spacing of 150 feet on center to generally match the locations of the existing light posts and gates on the public safety railing. The gates would be 8 feet wide (two 4 foot wide panels) and 12 feet high, and match the appearance of the vertical system. The frame for each gate door would be constructed of 2-inch by 2-inch steel members. A rub rail would be located at a height of 4 feet 6 inches, matching the height of the public safety railing.

Alternative 2B – Replace Outside Handrail with Horizontal System

Alternative 2B would construct a new 10 foot high barrier consisting of ⅜-inch diameter steel horizontal cables. The cables in the lower 3 ½ foot section would be spaced at 4.4 inches on center, while the cables in the upper 6 ½ foot section would be spaced 6 inches on center. A rub rail would be installed at the same height as the public safety railing (4 feet 6 inches). The existing rail posts would be replaced with new 10-foot high outside rail posts at the same locations and of the same cross-section, size, material, and color of the original posts. The entire system would be constructed of steel that would be painted International Orange, matching the material and color of the outside handrail. Transparent panels would be installed along the upper 6 ½ foot portion at the belvederes and towers on both sides of the Bridge.

A winglet would be placed on top of the rail posts to ensure aerodynamic stability and impede climbing over the barrier. The winglet would be a 42-inch wide translucent panel with a slight concave curvature extending approximately 2 feet over the sidewalk. The winglet would run the length of the suicide deterrent barrier, except at the north and south towers. The winglet would be notched at the suspender ropes and light posts.

Because maintenance workers would no longer be able to climb over the outside handrail to reach the below-deck maintenance traveler, gates would be located at a spacing of 150 feet on center to generally match the locations of the existing light posts and gates on the public safety railing. The gates would be 8 feet wide (two 4 foot wide panels) and 12 feet high, and match the appearance of the horizontal system. The frame for each gate door would be constructed of 2-inch by 2-inch steel members. A rub rail would be located at a height of 4 feet 6 inches, matching the height of the public safety railing.

Alternative 3 – Add Net System

Alternative 3 would construct a horizontal net approximately 20 feet below the sidewalk and approximately 5 feet above the bottom chord of the exterior main truss. The net would extend horizontally approximately 20 feet from the Bridge and be covered with stainless steel cable netting incorporating a grid between 4 and 10 inches. The horizontal support system would connect directly to the exterior truss and be supported by cables back to the top chord of the truss. The support system for the netting would include cables that would pre-stress the netting to help keep it taut and not allow the wind to whip the netting.

The horizontal net would consist of independent 25-foot sections that can be rotated vertically against the truss to allow the maintenance travelers to be moved. The net and the steel horizontal support system would be painted to match the International Orange Bridge color. With this alternative there would be no modifications to the above deck Bridge features. This alternative assumes that the modification to the outside handrail on the west side of the Bridge between the two main towers and the installation of the wind fairings have been completed as part of the previously approved seismic retrofit project.

1.2 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. The No-Build Alternative provides the baseline for existing environmental conditions and future conditions against which all other alternatives are compared. The No-Build Alternative would continue the existing non-physical suicide deterrent programs at the Bridge, as well as implement Bridge modifications approved as part of the seismic retrofit project.

1.3 Existing Suicide Deterrent Programs

Emergency Counseling Telephones

On November 5, 1993, by Board Resolution 93-264, the District upgraded the emergency motorist “call-box” telephone system on the Bridge sidewalks to also accommodate suicide prevention and crisis intervention calls. Additional phones were installed to expand the coverage

area with a total of 11 phones located on both sidewalks. The system was modified to allow the Bridge security staff to instantly connect callers, at their request, to trained suicide prevention counselors at San Francisco Suicide Prevention's crisis line.

To comply with international convention regarding emergency telephones, the signs above the telephone call boxes were modified in color from black on yellow to white on blue. The wording was changed from "Emergency Telephone" to "Emergency Telephone and Crisis Counseling" and the international "telephone" icon was added. Further, in 2006, additional signs with blue with white lettering were added directly above the telephone call boxes that read: "Crisis Counseling, There is Hope, Make the Call. The Consequences of Jumping from this Bridge are Fatal and Tragic."

The phones are used both by potentially suicidal persons seeking assistance and by members of the public who wish to alert District authorities to persons that may be contemplating suicide. In recent years, the proliferation of cellular telephones has also increased the incidence of reporting by the general public of potential persons contemplating suicide.

Public Safety Patrols

On February 23, 1996, under Board Resolution 93-34, a Public Safety Patrol was initiated on the Bridge sidewalks with suicide prevention as one of its primary objectives. The patrols started on April 1, 1996. Under this program, the District's existing Bridge Patrol Program was re-oriented with an emphasis on patrolling the Bridge east sidewalk. The initial patrols were performed on foot and by scooter. In August, 1999, the Board authorized the formation of a bicycle unit within the Bridge Patrol ranks. Today the majority of sidewalk patrolling is done on bicycles. In December 2001, as a result of heightened security concerns, the Board authorized the hiring of additional Bridge patrol officers to expand the Bridge's security force. These new officers are trained in suicide prevention and intervention. In early 2003, the California Highway Patrol (CHP) deployed its own bicycle patrol officers on the Bridge, increasing law enforcement coverage even further. CHP officers are also trained in suicide intervention.

Employee Training

All Bridge security personnel, as well as several Bridge ironworkers who have volunteered to assist in suicide intervention and rescue activities, have received special training. In 2004, the District, CHP, and the U.S. Park Police jointly sponsored an intensive full-day training session on crisis intervention and suicide prevention. This course was attended by more than 120 law enforcement officers, District security and ironworker personnel. The course was conducted by a nationally renowned expert in the field of crisis intervention and by personnel from San Francisco Suicide Prevention, Inc.

Surveillance Cameras

In the 1960s, closed-circuit cameras were installed at the Bridge towers to remotely monitor traffic conditions. As a result of security system upgrades in the mid 1990s and again following September 11, 2001, additional cameras were installed at other locations on and around the Bridge. This network of cameras aids in directing intervention personnel.

1.4 Seismic Retrofit Project

Immediately following the 1989 Loma Prieta earthquake, a vulnerability study for the Bridge was conducted that concluded if a high magnitude earthquake centered near the Bridge occurred, there would be a substantial risk of impending collapse of the San Francisco and Marin Approach Viaducts and the Fort Point Arch, and extensive damage to the remaining Bridge structures. After determining that retrofitting the Bridge would be more cost-effective than replacement, a construction phasing plan was developed in 1996 to retrofit the Bridge. The seismic retrofit modifications were designed to maintain the historic and architectural appearance of the Bridge. The following phasing plan reflected the degrees of structural vulnerabilities:

- Phase I retrofit the Marin (north) Approach Viaduct
- Phase II retrofit the San Francisco (south) Approach Viaduct, San Francisco (south) Anchorage Housing, Fort Point Arch, and Pylons S1 and S2
- Phase III will retrofit the Main Suspension Bridge and Marin (north) Anchorage Housing and North Pylon

Phase I of the seismic retrofit project was completed in 2002. Phase II of the seismic retrofit project was completed in 2008. The third and final phase has been divided into two construction projects: Phase IIIA and Phase IIIB. Phase IIIA, which was awarded on March 28, 2008, will retrofit the north anchorage housing and north pylon. It is scheduled to be completed in 3 years. Phase IIIB, the seismic retrofit of the main span and towers, is planned to start in 20010. Phase IIIB includes a wind retrofit of the suspended span, including the replication of the west outside handrail between the Towers and the installation of wind fairings along the same length.

Wind Retrofit of West Handrail

In accordance with the findings of the wind study report conducted for the seismic retrofit project, the vertical members under the outside handrail on the west side of the Bridge between the two main towers will be modified to reduce the effects of the wind on the handrail. The retrofit modification will replace the existing vertical members and bottom rail with narrower members. The new vertical members will be spaced at 5 inches on center, which will help to increase the porosity of the handrail by allowing the wind to pass through the pickets more freely thus reducing the wind loads inducted upon these elements. The top rail and main support posts would remain unchanged.

Wind fairings will be installed at the west outer edge of the sidewalk and the top chord of the main stiffening truss. A quarter round fairing, with a radius of 19 inches, would be placed at the sidewalk's edge and a half round fairing, with a radius of 25 inches would be placed along the top chord of the stiffening truss. The fairings will be painted to match the existing Bridge color. The fairings radius and diameter will be equivalent to the width of the edge of sidewalk and top chord of the stiffening truss of which they cover. This will retain the same scale and the same

relationship of solids and voids of the main suspension truss's elevation. This modification was previously approved as part of the seismic retrofit project.

1.5 Construction Activities

Construction Staging Areas

Five potential staging areas have been identified. Four of the construction staging areas are located on the northern side of the Bridge in Marin County below the Marin Approach and Span 4 backspan. The four proposed construction staging areas on the north side of the Bridge would be located on existing parking lots and maintenance areas currently used for the Bridge operations. One staging area is located adjacent to the Bridge Toll Plaza within the City and County of San Francisco. This staging area would be located to the west of the Toll Plaza in an existing parking lot. Construction equipment and materials would be located within one or more of these construction staging areas. Storage of construction equipment and materials on-site would be limited to the staging areas.

Construction Activities

Construction of the new barrier would be done in sections, beginning on the west side of the Bridge and ending on the east side of the Bridge. Sidewalk and lane closures may be necessary during limited periods. Construction may take place during non-peak hours to minimize impacts to vehicles and other users of the Bridge. Lane closures would only be permitted during non-peak hours. It is anticipated that it would take 12 to 18 months per side to complete construction.

1.6 Area of Potential Effect

The Area of Potential Effects (APE) for the Project was established by the District, the cultural resources consultant team, Alicia Otani, PQS Principal Architectural Historian, H.P. Tang, Local Assistance Engineer, and Moe Shakeria, Caltrans Project Manager. The APE was signed on November 2, 2007, and is provided in Figure 3, Appendix A.

The APE for historic architectural resources includes two areas: General APE and Focused APE. The General APE was developed to encompass both the project area, and the contributing elements of the Golden Gate Bridge historic property that extend past the project area, namely the appurtenant approach viaducts (the Doyle Drive viaducts in San Francisco County). The Focused APE encompasses only those portions of the Golden Gate Bridge property that may be potentially affected by the Project: the main Bridge structures where the proposed Project would be constructed, and the construction staging areas in the Toll Plaza area and along Conzelman Road. The Project has no potential to effect historic properties outside of the Focused APE. Please refer to Section 4 for a description of the cultural resources addressed in this HRER.

The general environment of this Project is visually spectacular and culturally rich. Located at the mouth of San Francisco Bay, the Bridge spans the Golden Gate Strait, from Fort Point at the northwestern tip of the San Francisco Peninsula to Lime Point at the southeastern end of the

Marin Headlands, east of Fort Baker. 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 intensifies the visual power of the Bridge. From its north-south alignment, the Bridge provides panoramic views of the rugged beauty and urban diversity that surround it, encompassing the Marin hills, the Presidio of San Francisco Historic Landmark District, the skyline of San Francisco, Alcatraz and Angel Islands of San Francisco Bay, and the wide expanse of the Pacific Ocean and coastline.[3]

[3] 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; NPS, "Presidio of San Francisco: Presidio National Register of Historic Places Registration Forms," signed by Keeper of the National Register of Historic Places, October 1993.

2. RESEARCH AND FIELD METHODS

2.1 Research Methods

The Golden Gate Bridge has been the subject of extensive documentation and historical analysis since the time of its construction (1933-1938). The preparers of this HRER, JRP Historical Consulting, LLC, (JRP) understood that the main Bridge structures would be subject to inventory and evaluation when this Project began in the Fall of 2006, and this was confirmed when the Focused APE was established in November 2007 Figure 3, Appendix A. JRP, therefore, began background research on this property and its surroundings during the initial stages of the Project and this research has continued throughout the on-going refinement of the Project alternatives, project meetings, fieldwork, and effects analysis. This research included pre-field, background, and resource-specific research through review of previous studies of the Golden Gate Bridge, as well as archival research focused upon the location of the proposed Project: the railings, sidewalk, and visitor experience of the Bridge. The most detailed previous studies and most relevant archival sources are listed below, and a comprehensive list of materials consulted appears in Section 7.

- National Park Service, "National Historic Landmark Nomination for the Golden Gate Bridge," (August 13, 1997), submitted to SHPO but not designated as NHL.
- Caspar Mol, MacDonald Architects, "Caltrans Architectural Inventory and Evaluation Form for the Golden Gate Bridge," November 1993, prepared for the "HASR: Proposed Seismic Retrofit Project for the Golden Gate Bridge," (1995).
- Charles Derleth Papers, manuscript collection, including Consulting Board of Engineers for the Golden Gate Bridge. Water Resources Center Archives, University of California, Berkeley.
- Irving F. Morrow (and Gertrude C. Morrow) Collection, 1914-1958, including drawings, plans, and sketches for the Golden Gate Bridge. Environmental Design Archives, College of Environmental Design, University of California, Berkeley.
- 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.

Research also included the recognized sources of information about historical resources in California. JRP requested a records search at the Northwest Information Center in March 2007. JRP also reviewed the NRHP, the Office of Historic Preservation (OHP) Determinations of Eligibility for the NRHP, *California Inventory of Historic Resources*, *California Historical Landmarks*, and California Points of Historical Interest to identify the current status of the Bridge and its contributing elements, and to identify any other resources in the Focused APE.

Other than the Golden Gate Bridge, and the other properties in the General APE, no other historic resources were identified in these sources within the Focused APE.[4]

The Golden Gate Bridge historic property and the extensive previous investigations of its history provided the basis for the historical context presented in Section 3 of this HRER, as well as additional research conducted for the Project. JRP historians Rebecca Meta Bunse and Christopher McMorris conducted archival research in the Environmental Design Archives and Water Resources Center Archives at UC Berkeley in June 2007. This research supplemented on-going review of material from Golden Gate Bridge Highway & Transportation District Files, and material collected from various libraries and repositories, including: California Department of Transportation, District 4, Maps Files; Historic Photograph Collection, San Francisco Public Library; Historic American Buildings Survey, Library of Congress; California Room and Government Documents at the California State Library in Sacramento; Bancroft Library at UC Berkeley; and University of California, Davis. Refer to the references listed in Section 6 for a complete listing of materials consulted, and to Section 7 for JRP staff professional qualifications.

JRP assisted the District in the preparation of a letter to interested parties that was sent on April 29, 2008 seeking comment and information pertaining to the historic significance of the Golden Gate Bridge and the potential effect the Project may have on the character-defining features of the property. Copies of the draft letter to interested parties and the list of recipients are in Appendix C. Responses received will be summarized in this report and the environmental document for the project.

2.2 Field Methods

The Golden Gate Bridge historic property was subject to extensive inventory and evaluation as part of two survey efforts in the 1990s: the 1993 survey prepared for the seismic retrofit project, and the 1997 National Historic Landmark nomination. The Focused APE for the current Project established that the Bridge property subject to survey for this HRER consists of the main Golden Gate Bridge structure (Bridge 27 0052), and two contributing elements: the Round House Gift Center and the Toll Plaza Undercrossing (Bridge 34 0069). JRP, in consultation with Alicia Otani, PQS Principal Architectural Historian, Caltrans District 4, and Jennifer Darcangelo, Chief Office of Cultural Resource Studies, Caltrans District 4, designed an inventory and evaluation update strategy for the property to recognize the extensive information provided in the previous studies and augment that work with current description of changes to the property since the mid 1990s. JRP historians conducted fieldwork at the Bridge on March 8, 2007, and November 20, 2007, to collect updated recordation information and to photograph the property. Staff of MacDonald Architects, who are part of the design team for this Project, also made photographs

[4] California Office of Historic Preservation, Directory of Properties - Historic Property Data File for San Francisco County (as of December 2007); Department of Parks and Recreation, *California Inventory of Historic Resources*, (Sacramento: Department of Parks and Recreation, March 1976); Office of Historic Preservation, *California Historical Landmarks*, (Sacramento: California State Parks, 1996); and Office of Historic Preservation, *California Points of Historical Interest*, (Sacramento: California State Parks, May 1992); National Park Service, National Register Information System database: http://www.nr.nps.gov/ (accessed November 2007 and February 2008).

of the Bridge in August 2007, and JRP incorporated some of these images in the updated recordation of the historic property as well.

JRP prepared the DPR 523 form update to present: a summary of previous inventory and evaluation efforts, updated inventory and evaluation of the Toll Plaza Undercrossing (34 0069), confirmation of the current historic status and character-defining features of the Golden Gate Bridge historic property (see Appendix B), and digitized copies of the previous survey forms for the property (Appendix D). A copy of the Caltrans 2006 Statewide Historic Bridge Inventory Update for the bridges within the APE is also included in Appendix D.

3. HISTORICAL OVERVIEW

This HRER has been prepared as part of the Project to clarify the historic status and contributing elements of the Golden Gate Bridge, a multi-component historic structure that has been determined eligible for listing in the NRHP, OHP Status Code 2. The general historical context within which the Bridge should be evaluated is contained in the 1997 National Historical Landmark (NHL) Nomination prepared by the Western Regional Office of the National Park Service (NPS). A copy of this nomination, as well as a previous evaluation of the Bridge prepared in 1993, are included with the DPR 523 form update in Appendix B. The correspondence in Appendix D includes an evaluation of the Presidio Approach Road (Doyle Drive) viaducts prepared in 1987. A collection of additional agency correspondence regarding the historic status of the Bridge and its contributing elements is also included in Appendix E.

There is ample historic context provided in the previous evaluations of this property to demonstrate its historic significance. The 1997 NHL nomination provides the 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 Section 5 for a discussion of the conclusions of the previous studies and this HRER.

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.

> [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.[5]

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 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.[6]

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.[7] 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.[8]

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 sightseers' 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

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[5] 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."

[6] Historic American Buildings Survey, Data Sheets for Fort Point 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.

[7] 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.

[8] 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.

intervals."[9] 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."[10]

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.

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."[11]

[9] "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.

[10] 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.

[11] 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.

4. DESCRIPTION OF CULTURAL RESOURCES

This HRER 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. 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 included in the attached DPR 523 form update. Please refer to the detailed property descriptions provided in those surveys, in addition to the supplemental description provided in this section.

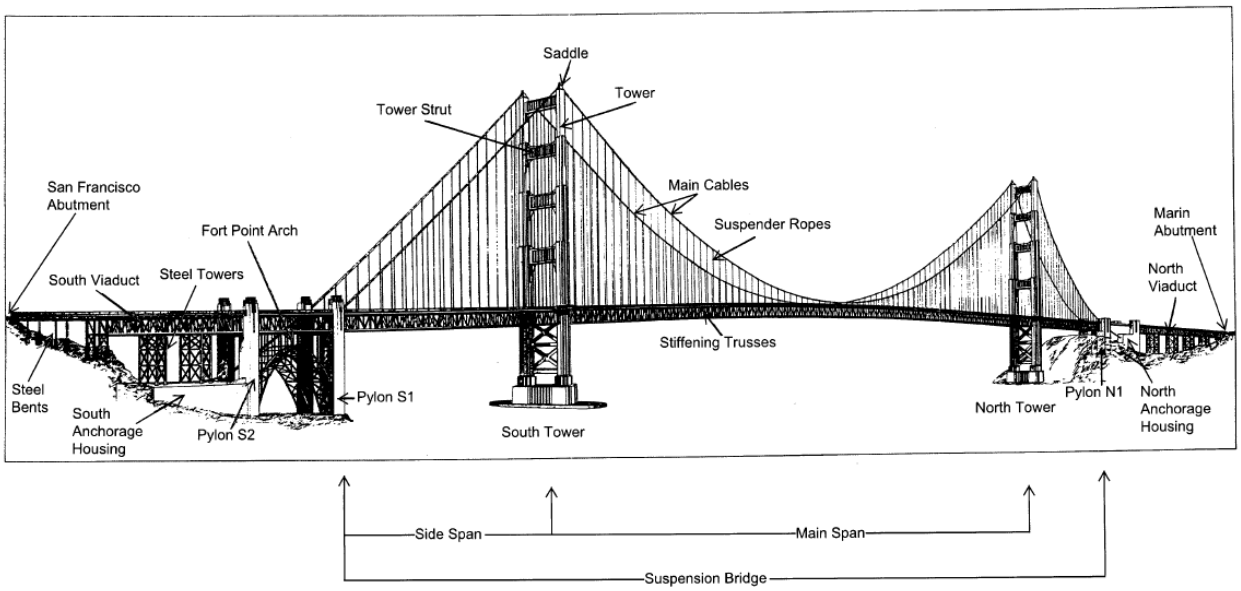
Several historic properties are located within the General APE for this Project: the Golden Gate Bridge (Bridge 27 0052); individually listed historic highway bridges (Marina Viaduct 34 0014 and Presidio Viaducts 34 0019); Fort Point National Historic Site; Presidio of San Francisco National Historic Landmark District; and Forts Baker, Barry and Cronkhite Historic District. Portions of the General APE are located within the boundaries of the Presidio of San Francisco National Historic Landmark District. The Fort Point National Historic Site is located under the Fort Point Arch between Pylon S1 and S2 of the Bridge. None of these properties were subject to further study because they were outside the Focused APE, except for the main Golden Gate Bridge structures and select contributing elements described below.[12]

The Focused APE for historic architectural resources consists of the Golden Gate Bridge (Bridge 27 0052) historic property. The contributing elements of the Bridge located within the Focused APE are the Round House Gift Center and the Toll Plaza Undercrossing (Bridge 34 0069). The Golden Gate Bridge, Round House, and Toll Plaza Undercrossing, were subject to updated inventory and evaluation in the attached DPR 523 form update.

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 major components of the Golden Gate Bridge 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 (see illustration below).[13]

[12] Fort Point National Historic Site (CA-SFr-48H). San Francisco, California, underneath Fort Point Arch, Golden Gate Bridge. Listed in the NRHP in 1970 for significance in architecture, military history and maritime history (Criteria A and C). Fort Point is also a contributing element of the Presidio National Historic Landmark District (outside the Focused APE). The marker for California State Landmark No. 82 memorializes an earlier fort – Castillo de San Joaquin – established near where Fort Point was later built after the US Army cut away the cliffs in the 1850s (marker at the southeast corner of the Fort Wall, Fort Point, San Francisco, below Golden Gate Bridge). Fort Point was photographed for the Historic American Buildings Survey in 1934, 1968, 1975, and 1983 (Survey number HABS CA-1239).

[13] 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.



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 nomination did consider the entire Doyle Drive feature to be a contributing element of the Golden Gate Bridge. 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.[14]

The Toll Plaza Undercrossing is an original component of the Bridge. 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 Figure 1. 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.[15]

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

[15] Caltrans,"Structure & Maintenance Investigations, Log of Bridges on State Highways," November 2007, accessed online at: http://www.dot.ca.gov/hq/structur/strmaint/brlog/logpdf/logd04.pdf; Caltrans, "2006 Statewide Historic Bridge Inventory Update."

Railings and original light standards are contributing elements of the Bridge. The "Stop – Pay Toll" sign facing southbound traffic on the toll booth canopy was identified as a contributing feature, but it has since been removed for installation of FasTrak™ signs, as discussed below (see Figures 3 and 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. 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.[16]

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.[17] 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.[18]

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

[16] 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.

[17] 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.

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

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."[19] About ten years later, the District replaced over one mile (6,557 linear feet) of pedestrian hand railings on the west side of the Bridge with replicas of the originals. See Figures 2, 5 and 6, and Photographs 5, 6, and 9 for various historic and current views of the sidewalks and railings.[20]

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.[21]

Other than the 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 FasTrak[tm] project (2000-2005) required modifications to the toll booth canopy, including the removal of the "Stop – Pay Toll" sign, a contributing feature of the Bridge in the 1997 nomination. The sign was removed in 2000. The toll canopy roof was replaced in 2003 and the 1949 neon clock, which had ceased functioning was not repairable, and was replaced with a replica (Photograph 8).[22]

The completed 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.[23] SHPO concurred with these findings, as shown in the

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[19] Stahl, et al., *The Golden Gate Bridge: Report of the Chief Engineer, Volume II, May 2007*, 140-141.

[20] 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.

[21] 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.

[22] 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.

[23] 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).

attached correspondence, and the previous determination that the Golden Gate Bridge is eligible for listing in the NRHP remains valid.

5. FINDINGS AND CONCLUSIONS

This HRER has been prepared as part of the Golden Gate Bridge Physical Suicide Deterrent System Project to clarify the contributing elements and historic status of the Golden Gate Bridge, a multi-component historic structure that has been determined eligible for listing in the NRHP, at the national level of significance, under Criterion C, with a period of significance of 1933-1938. It carried OHP Status Code 2. Overall, the Golden Gate Bridge has lost some historic integrity through the course of seventy years of operation, maintenance, and improvements. Nevertheless, 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.

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).[24] 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.[25] The Golden Gate Bridge is also considered to be a historical resource for the purposes of CEQA.

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[24] 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, on file with Northwest Information Center; Caltrans, "Structure & Maintenance Investigation, Historical Significance–State Agency Bridges," November 2007, http://www.dot.ca.gov/hq/structur/strmaint/hs_state.pdf. See the correspondence attached to this HRER, including: 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.

[25] 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.

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 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 the 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 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.[26]

The Golden Gate Bridge 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 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. Caltrans bridge logs indicate that the undercrossing has not undergone major widening or extension since it was completed in 1936.[27] The 1997 nomination included

[26] Homme, FHWA, "Request for Determination of Eligibility for the Golden Gate Bridge," 1979; 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.

[27] 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.

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 the 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."[28]

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.

In summary, there is one historic property within the Focused APE for this Project: the Golden Gate Bridge. The findings of this HRER, and the historic status of the Bridge and the contributing elements of the Bridge studied for this Project, are summarized below.

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

Historic Status Category	Finding
a) Historic properties listed in the National Register.	Toll Plaza Undercrossing (Bridge 34 0069), listed as contributing element of the Presidio of San Francisco National Historic Landmark, OHP Status Code 1.
b) Historic properties previously determined eligible for the National Register.	Golden Gate Bridge (and contributing elements), determination of eligibility 1980 and subsequent updates, OHP Status Code 2.
c) Resources previously determined not eligible for the National Register.	Administration Building (or Toll Plaza Building) and its ancillary structures, bus shelters; telephone booths, modern signs and light standards, and visitor parking area, OHP Status Code 6.
d) Historic properties determined eligible for the National Register as a result of the current study (refer to relevant evaluations in attached supporting documentation).	Toll Plaza Undercrossing (Bridge 34 0069), as a contributing element of the Golden Gate Bridge historic property, OHP Status Code 3.
e) Resources determined not eligible for the National Register as a result of the current study (refer to relevant evaluations in attached supporting documentation).	None
f) Resources for which further study is needed because evaluation was not possible (e.g., archaeological sites that require a test excavation to deter-mine eligibility).	None
g) Historical resources for the purposes of CEQA	Golden Gate Bridge, and its contributing elements, California State Landmark No.974, City of San Francisco Landmark No. 222, and OHP Status Code 2.
h) Resources that are not historical resources under CEQA, per CEQA Guide-lines §15064.5, because they do not meet the California Register criteria outlined in PRC §5024.1.	Administration Building (or Toll Plaza Building) and its ancillary structures, bus shelters; telephone booths, modern signs and light standards, and visitor parking area, OHP Status Code 6.

6. REFERENCES

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7. 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. Her duties included APE delineation, archival research, field work, evaluation and effects analysis, as well as report writing, review, editing. Ms. Bunse has eighteen years experience working as a consulting historian and architectural historian on a wide variety of historical research and cultural resources management projects, as a researcher, author, and project manager. Based on her level of education and experience, Ms. Bunse qualifies as a historian and architectural historian under the United States Secretary of the Interior's Professional Qualification Standards (as defined in 36 CFR Part 61), and meets the Professionally Qualified Staff Standards for these disciplines in the Section 106 Programmatic Agreement (Section 106 PA) Attachment 1.

JRP Partner Christopher McMorris (MS in Historic Preservation, Columbia University) served as architectural historian for this Project and contributed to archival research, evaluation, and effects analysis. Mr. McMorris has ten years experience working as a consulting historian and architectural historian on a wide variety of historical research and cultural resources management projects. He qualifies as an architectural historian and historian under the United States Secretary of the Interior's Professional Qualification Standards (as defined in 36 CFR Part 61), and meets the Professionally Qualified Staff Standards for these disciplines in the Section 106 Programmatic Agreement (Section 106 PA) Attachment 1.

APPENDICES