

impacts to Cavalry Hollow; therefore, the take of an additional 0.6 hectares (1.4 acres) to construct the Loop Ramp Option was not justified.

- Circle Drive Option. Since the development of the Circle Drive Option as presented in the DEIS/R, the SFDRP advanced their plans for the rehabilitation of the Palace of Fine Arts and identified the need to retain Palace Drive as a two way street. Although many configurations were developed, the Circle Drove Option remained incompatible with a two-way Palace Drive. Residents along Lyon Street were also adamant that Lyon Street should remain as a two-way street. In addition, the construction of Circle Drive would require the removal of Building 1151, the historic pool building. Since the refined Diamond Option accommodates a two-way Palace Drive and Lyon Street and retains the pool building, the Circle Drive option was eliminated.

7.7 Analysis of Harm

Under 23 CFR 774.3(c), when there exists no feasible and prudent alternative to the use of Section 4(f) property, FHWA may approve only the alternative that:

1. Causes the least overall harm in light of the statute's preservation purpose. The least overall harm is determined by balancing the following factors as applicable:
 - i) The ability to mitigate adverse impacts of each Section 4(f) property (including any measures that result in benefits to the property);
 - ii) The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection;
 - iii) The relative significance of each Section 4(f) property;
 - iv) The views of the official(s) with jurisdiction over each Section 4(f) property;
 - v) The degree to which each alternative meets the purpose and need for the project;
 - vi) After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and
 - vii) Substantial differences in costs among the alternatives.
2. The alternative selected must include all possible planning, as defined in §774.17, to minimize harm to Section 4(f) property.

Implementation of the Preferred Alternative – Refined Presidio Parkway would result in the use of *Section 4(f)* properties such as the removal of Doyle Drive and NHLD contributing Buildings 201, 204, 230, and 670. The Preferred Alternative would require 11.7 hectares (29.0 acres) of right of way which is 2.6 hectares (6.4 acres) more than the existing condition. In addition, there would be impacts to the cultural landscape of the Presidio NHLD. The existing grade of the historic

bluff would be altered as would historic vegetation features of the cultural landscape.

The Preferred Alternative has been identified as such because instead of simply replacing what currently exists (itself a 4(f) use), the project team, including the Presidio Trust as land managers (in keeping with 774.3(c)(1)(iv)) and other participating agencies, worked to design an alternative that would improve conditions within the Presidio from both traffic and aesthetic perspectives, resulting in the least overall harm to *Section 4(f)* resources, as demonstrated below. The Preferred Alternative includes all possible planning to minimize harm (as defined in 23 CFR 774.17). and after balancing all of the different aspects to this project, there is no “feasible and prudent avoidance alternative”, as defined in 23 CFR 774.17.

A full description of the measures to minimize harm to the *Section 4(f)* resources is provided in Chapter 3 and **Appendix K** in this FEIS/R under each specific element of the environment.

Following are other measures that have been developed for the Preferred Alternative to minimize harm:

- design exceptions;
- construction sequencing;
- temporary road closures;
- compensation for lost resources; and
- provisions of the *Section 106 Programmatic Agreement* (PA).

The Preferred Alternative – Refined Presidio Parkway, as described in Chapter 2, has been refined within the Doyle Drive corridor to avoid or reduce potential harm to *Section 4(f)* resources by moving project elements away from resources or using a variety of construction techniques. For example, the distance between the new roadway and the National Cemetery was maximized with non-standard lane and shoulder widths in that area under all alternatives as described below.

The avoidance, minimization, and/or mitigation measures discussion in Chapter 3 focuses primarily on the Preferred Alternative because these measures are being negotiated among the cooperating agencies and finalized in the PA and the associated archaeological and built environment treatment plans being developed for the project. Both the PA and treatment plans focus solely on the Preferred Alternative. The San Francisco County Transportation Authority (the Authority), Caltrans, and FHWA are working closely with the SHPO, the Presidio Trust, the National Park Service, the ACHP and other interested parties to ensure appropriate measures are developed and implemented.

The PA would be completed and executed prior to the *Record of Decision* (ROD). The treatment plans would be completed within three months of the ROD.

7.7.1 Design Exceptions

A series of design exceptions is requested for incorporation into the Preferred Alternative – Refined Presidio Parkway design. The following describes some of the key exceptions which reflect the minimization of impacts while maintaining traffic safety.

- A non-standard section between the National Cemetery and the Batteries would reduce lane-width and shoulder-width to avoid both the National Cemetery and the Batteries.
- In the Gorgas warehouse area, an exception to the design speed stopping sight distance would move the alignment north with a tighter curve to avoid the Gorgas warehouses.
- In the southbound portion of the roadway in the area of Building 106, there is additional construction complexity and staging to build the roadway in two sections to avoid any impacts to Building 106.
- At the Park Presidio Interchange the options would have non-standard design elements to provide adequate separation of the Cavalry Stables buildings from the roadway. The Loop Ramp Option would avoid the stables but would add additional costs. The Hook Ramp Option with the design exceptions would maximize the distance from the stables.

These design exceptions, while achieving other project objectives, would minimize harm to the *Section 4(f)* properties.

7.7.2 Construction Sequencing

The Preferred Alternative – Refined Presidio Parkway would use complex multi-phased construction staging in order to minimize the construction footprint - building the project within the permanent footprint as opposed to expanding beyond the new Corridor boundaries. Construction staging areas also would be limited to minimize the construction footprint.

In addition, the project would avoid construction vibration impacts by using low vibration demolition and construction techniques such as a soil cushion that absorbs vibration during the removal of the low-viaduct and using drilled or oscillated piles instead of driven piles to reduce vibration close to historic buildings.

Every practicable effort would be made to minimize the dust and noise during construction through the use of standard *Best Management Practices* (e.g., watering, covering of soil piles, and street sweeping), and standard accepted noise reduction measures (e.g., maintaining tune of equipment, limited work hours in accordance with local ordinances). Coordination with the Trust regarding location and duration of work in affected park and recreation facilities would be carried out whenever feasible. An effort would be made to keep the public informed of recreation impacts during the construction process.

7.7.3 Temporary Road Closures

Construction activities would require the periodic closure of various roadways including portions of McDowell Avenue, Crissy Field Avenue, Lincoln Boulevard, Gorgas Avenue, Halleck Street, and Marshall Street. For the Preferred Alternative – Refined Presidio Parkway, Halleck Street would be closed for most of the construction period. A *Transportation Management Plan* would address traffic impacts resulting from the construction of the project. Detours would be available and signage would be provided to direct bicyclists and pedestrians to the alternate routes. Bicycle and pedestrian access across from the Doyle Drive corridor would be maintained via Marshall Street, Crook Street, McDowell Avenue/Crissy Field Avenue, at the Lincoln Boulevard/Park Presidio Interchange, and at the Lincoln Boulevard/Golden Gate Bridge Toll Plaza.

7.7.4 Compensation

The Trust, as the land managers, would be compensated as applicable by law for the removal or permanent removal of buildings. This compensation would be determined and implemented as part of the right of way acquisition process.

7.7.5 Section 106 Programmatic Agreement (PA)

The following discussion presents measures to minimize harm for potential impacts to *Section 4(f)* historic properties. The measures taken to mitigate adverse effects of the project are being addressed in a *Programmatic Agreement* (PA) for the project under the auspices of the *Section 106* consultation process. The PA would be developed in coordination with FHWA, the SHPO, the ACHP, the federal cooperating agencies and other interested parties and would be executed in advance of the *Record of Decision* (ROD). The PA calls for a built environment treatment plan and an archaeology treatment plan to be developed to specifically address the effects of the project on NRHP-eligible properties and outlines the measures that would be implemented to mitigate these effects. The treatment plans are being developed concurrently with the PA. The PA would be completed and executed prior to the ROD with the treatment plans to be completed within three months of the ROD.

Archaeological Protection Monitoring, Discovery, Evaluation, and Treatment Plan

An archaeology monitoring, discovery, evaluation and treatment plan would be developed and implemented to outline the avoidance and protection measures that would be taken to protect the known archaeological site (CA-SFR-6/26) and to address the potential for discovery of unknown archaeological resources. A professional archaeologist who meets the Secretary of the Interior's *Professional Qualifications Standards* (48 FR 44738-9) would prepare the plan and monitor all pre-construction and construction activities in the project area.

The plan would be consistent with the Secretary of the Interior's *Standards and Guidelines for Archaeological Documentation* (48 FR 44734–37) and take into account

the Council's publication, *Treatment of Archaeological Properties: A Handbook* (ACHP 1980), and SHPO guidelines. Specifically, the plan would specify the process and schedule for conducting evaluations in areas within the APE, including where additional subsurface exploration is to be carried out; the methods, locations, and schedule for subsurface exploration; and the methods that would be used to determine whether archaeological properties are significant. It would also outline the process and schedule for conducting data recovery for significant resources found in the APE, including the research questions to be addressed through data recovery; the methods to be used in analysis, data management, and dissemination of data; and the methods to be used for data recovery, with an explanation of their relevance to the research questions. The plan would outline the procedures that would be followed in the event of an unanticipated archaeological discovery. The plan would also describe proposed curation of recovered materials and records (see Collections Management/Curation below), and the proposed methods for disseminating results of the work. The plan would also outline the process by which interested Native Americans from the Ohlone community would continue to be consulted. The plan would also outline how the project would comply with the *Native American Graves Protection and Repatriation Act* (NAGPRA) if Native American human remains are encountered during the course of the project.

Built Environment Treatment Plan

The *Built Environment Treatment Plan* (BETP) is being developed with input from the responsible agencies as well as interested parties. It would dictate a variety of tasks intended to avoid, minimize, or mitigate for impacts to the built environment. The plan outlines the following requirements:

Develop Architectural Criteria

Caltrans and SFCTA, in consultation with the Trust and NPS, would prepare architectural criteria that would be utilized, where feasible, in the design process for the project. The criteria would identify design elements for the new facility that are reminiscent of historic character-defining features while integrating the roadway into the Presidio NHL landscape. The results of the process would be incorporated into the BETP and would influence the project design as appropriate.

Conduct Vibration Studies

Prior to the commencement of any construction activity, a structural engineer would be retained who has experience working with historic buildings to assess and evaluate the stability of Building 106 and the Palace of Fine Arts pond because there is a potential for construction vibration to affect these properties. In order to determine the potential for vibration impacts, Caltrans and SFCTA, working with the consulting parties, would use existing vibration analysis to establish the level of additional analysis needed, including number and placement of receptors and their monitoring requirements. Additional studies, including in-situ testing, would be conducted as indicated. The results of these studies would

inform any additional mitigation requirements, such as changes in construction methodology, shoring, and building stabilization.

Recordation

Prior to the commencement of deconstructing Buildings 201, 204, and 230, the demolition of Building 670 and Doyle Drive, excavation within the Presidio historic landscape, as well as any construction within the vicinity of Buildings 106 and 228, recordation documentation of these resources would be conducted in accordance with the *Historic American Building Survey/ Historic American Engineering Record/ Historic American Landscape Survey* (HABS/HAER/HALS). In addition, seven areas of the Presidio NHLD would be subjected to HALS documentation including the Batteries, Bluff, Stable Area, Quartermaster Area, Gorgas Warehouse Compound, streetscapes, and landscapes totaling about 115 acres directly impacted along the Doyle Drive corridor.

The NPS HABS/HAER/HALS program would be consulted with to determine the level and kind of recordation appropriate for each contributing resource. Archival, digital and bound library-quality copies of this documentation would be developed and made available, as appropriate, to the SHPO, Caltrans, the Trust, and NPS/GGNRA Park Archives and Records Center. Other interested parties and repositories would be identified and the documentation would be distributed to them as appropriate.

Recordation/documentation methods in addition to, or other than, HABS/HAER/HALS may also be appropriate and could be proposed as mitigation for the project during the development of the cultural resources treatments plans which would be completed in Fall 2008.

Preparation of Historic Structures Reports and Conditions Assessments

Historic Structure Reports (HSRs) would be prepared for each historic property or contributing building within the Presidio NHLD that would be affected by the project but are not to be demolished. HSRs would be prepared for Buildings 106, 201, 228, 229 and 1167. These buildings are not expected to be adversely affected by the project, but detailed information is needed to assess what avoidance and protection measures are required to prevent adverse effects. The HSRs would be written in accordance with the standards established in *Preservation Brief 43: The Preparation and Use of Historic Structure Reports*, by Deborah Slaton, published by Heritage Preservation Services, National Park Service, 2005. The HSRs would include a history of the property/building, construction history, archaeology, architectural evaluation, conditions assessment, maintenance requirements, recommendations for proposed work, copies of original drawings and specifications, if available, current drawings if different from the original, and historic and current photographs.

Thirty-eight buildings and structures that are in close proximity to the construction area, for which no construction impacts are anticipated, would undergo a *Pre-Construction Condition Assessment* as a precautionary measure and to

provide a baseline for a post-construction assessment. The assessment procedures would focus on conditions of exterior elements, character-defining features in particular, and overall structural conditions. Written assessments would be accompanied by digital photo documentation and field drawings. The assessment would also provide information to determine best protection practices during construction for each of the assessed buildings, and result in the preparation of a field document for the architectural monitor to review the efficacy of the protective measures during construction activities in proximity of the buildings.

Stabilization /Monitoring /Security During Construction

Based on information from the *Historic Structure Reports*, before the construction phase of the project, a comprehensive stabilization/monitoring plan would be prepared. This plan would cover all potentially affected contributing elements, including historic structures and cultural landscape elements. This plan would present a detailed methodology for the protection of historic properties, such as buildings, structures, objects, and sites, including cultural landscape elements, within the project area that are in close proximity to construction activities. This plan would describe methods for the preservation, stabilization, shoring/underpinning, and monitoring of buildings, structures, and objects. The plan would also include provisions that high vibration construction techniques would be avoided in sensitive areas.

It is anticipated approximately 38 buildings would be subject to stabilization, monitoring, protection, and security procedures during the course of the project. Underpinning and/or other stabilization and protective methods would be implemented at buildings located near project construction areas and that may be susceptible to damage or inadvertent destruction. A professional historical architect or architectural historian who meets the Secretary of the Interior's *Professional Qualifications Standards* (see *36 Code of Federal Regulations Part 61*) would approve and monitor underpinning and stabilization activities. These same buildings would also require pre- and post-construction condition assessment reports.

Appropriate steps would also be taken to ensure that buildings would be protected prior to moving, deconstruction, or demolition to accommodate construction. Building 201 would be protected in place until its upper story is temporarily relocated and its lower story is deconstructed. Measures taken for Building 230 would include securing the building after it is vacated and providing security throughout the period of vacancy prior to deconstruction. Buildings 204 and 670 are currently vacant and would likely remain so until Building 204 is deconstructed and 670 is demolished. These provisions would be outlined in the BETP in consultation with the NPS and Trust Federal Preservation Officer (FPO), and would follow recommended standards established in NPS' *Preservation Brief 31: Mothballing Historic Buildings Measures for the Removal and Temporary Preservation of Historic Properties*.

Public interpretive material would be developed commensurate with the significance themes for the resources affected by the project. The *Architectural Treatment Plan* and BETP would present synchronized plans including the types of public and scholarly interpretation that would be implemented. Interpretive products would include the brochures, signage and panels, and other appropriate media for interpretation. The interpretation plans would also outline the locations where such interpretation would be installed or take place and identify any interpretation that might be needed prior to and during construction to educate Park visitors about the cultural resources protection measures being undertaken. These would in part be informed by the findings of fieldwork such as HABS/HAER/HALS recordation and archaeological monitoring. The interpretive objectives for mitigating effects to historic resources would be coordinated with the Presidio Trust's interpretive program and methodologies.

Materials that are developed as a part of mitigation for effects by this project on cultural resources would be digitized and provided to the Presidio Trust collection in electronic form. Materials would be disseminated to appropriate repositories such as the San Francisco Public Library, San Francisco Architectural Heritage, Golden Gate National Recreation Area (GGNRA), Caltrans District 4, Caltrans Transportation Library in Sacramento, and the Golden Gate Bridge Highway and Transportation District.

Relocation

After recordation in accordance with HABS/HAER/HALS documentation, the top half of Building 201 would be deconstructed, moved, and stored to the extent feasible in accordance with the Secretary of the Interior's *Standards for the Treatment of Historic Properties: Standards for Preservation, Rehabilitation, Restoration, and Reconstruction* (1995). The process for moving the top floor of Building 201 would follow the approach outlined in *Moving Historic Buildings* (John Obed Curtis, 1979, American Association for State and Local History) and would adhere to the recommendations outlined in the feasibility report prepared for Buildings 201, 204 and 228 (Garavaglia 2007). In addition, Building 201 would be relocated by a professional mover with demonstrated experience in the successful movement of historic buildings. These efforts would be conducted in consultation with the Trust.

Alteration of Buildings

Halleck Street would be raised resulting in adverse affects to the setting of Building 228. For Building 228, the effects of raising Halleck Street adjacent to the building would be minimized by implementing design treatments, detailed in the BETP, for the sidewalk and retaining walls where the building and Halleck Street connect. This treatment would address the impact of having the ground level of Building 228 at a considerably lower elevation than Halleck Street post-construction.

Architectural Resource Protection Measures and Cultural Landscape Monitoring

Protection measures, such as environmentally sensitive area (ESA) fencing, would be used to protect known resources during construction. These measures would be implemented for contributing elements of the Presidio NHL, including buildings and historic landscaping that are in close proximity to the construction zone but are not anticipated to be impacted by demolition or construction activities related to the project. Protection measures outlined in the BETP would include, but are not limited to, shoring and other stabilization methods, fencing, scaffolding and debris netting and fire protection protocols such as no-smoking zones and other stabilization measures for structures as determined necessary to protect contributing resources or sensitive areas.

Monitoring of contributing elements of the Presidio NHL would be conducted in proximity to the project to support the protection measures for the built environment and the cultural landscape. Monitoring protocols, which would be detailed in the BETP, would include the location, frequency, and duration of monitoring for each resource type. Monitoring procedures would commence with pre-construction condition assessments of buildings and structures adjacent to the construction footprint in order to finalize monitoring requirements for built resources. If unexpected impacts to historic buildings or cultural landscape features are identified during construction, the provisions for protection, stabilization, or mitigation outlined in the BETP would be followed in consultation with the Trust FPO, NPS-GGNRA staff, the SHPO, and ACHP.

This monitoring would be conducted by a professional architectural historian and/or a professional cultural landscape historian or landscape architect as appropriate, who meets the Secretary of the Interior's *Professional Qualifications Standards*.

Rehabilitation of Buildings and Rehabilitation/Restoration of Cultural Landscape Features

The rehabilitation of the upper story of Building 201, and rehabilitation and/or restoration of cultural landscape features would be conducted in consultation with the Trust and would follow the Secretary of the Interior's *Standards for the Treatment of Historic Properties: Standards for Preservation, Rehabilitation, Restoration, and Reconstruction* (1995) and NPS Preservation Brief 36, *Protecting Cultural Landscapes: Planning, Treatment, and Management of Historic Landscapes*.

Only portions of the Presidio's 1,491 acre cultural landscape would be affected by the project. Therefore, only specific areas, or sub-areas, of the larger cultural landscape would be subject to treatment as part of the mitigation measures for the project. The total area of the Doyle Drive construction corridor is approximately 115 acres. Approximately 86 acres is covered with buildings, roads, paved areas and ornamental landscape, lawn, isolated trees and shrubs. The remainder of the construction corridor is covered with vegetation, most of

which has been designated as historic and contributors to the NHL. These areas would be defined in detail in the BETP. Replanting would require coordination with natural resource restoration prescriptions, Caltrans landscape protocols, erosion control engineering, and the Trust's *Vegetation Management Plan*.

To the extent feasible the effects of reconstructing portions of streets contributing to the Presidio NHLD would be minimized. In particular, Halleck Street, which would be raised to accommodate the new Doyle Drive, would be reconstructed to minimize visual effects where adjacent to Building 228. The walkway by the building would be reconstructed at the same elevation as the building in order to minimize the appearance of the building having sunk into the streetscape. Buildings, structures, objects, and sites that are contributors to the Presidio NHLD that were not to be demolished, but are inadvertently damaged, would also be restored in accordance with the Secretary of the Interior's *Standards for the Treatment of Historic Properties: Standards for Preservation, Rehabilitation, Restoration, and Reconstruction* (1995).

Minor Repairs and Reconstruction

Inadvertent damage to historic properties, or to their contributing elements, would be repaired in accordance with the Secretary of the Interior's *Standards for Treatment of Historic Properties Standards for Preservation, Rehabilitation, Restoration, and Reconstruction* (1995). This would include damage to contributing elements such as landscaping, curbs, fencing, and related features, as well as contributing buildings, structures, and objects.

Salvage

Buildings 204 and 230, and the lower story of Building 201, would be deconstructed and the materials salvaged in consultation with the Trust FPO and in accordance with the *Presidio Trust Policy for Waste Minimization in Construction and Demolition*. At a minimum, all historic elements identified by the Trust FPO as being desired for preservation and/or reuse would be salvaged. Salvaged materials would include such elements as structural members, siding, windows, hardware, lighting and plumbing fixtures, and all such items that might be used in preserving and repairing other buildings of a similar vintage and construction. Salvaged materials would be transported and transferred to the responsibility of the Trust at a location to be designated by the Trust FPO and the Trust salvage coordinator. Materials that are salvaged would be documented and cataloged as part of the salvage process. Where feasible, historic vegetation would also be salvaged. Excavation for the Doyle Drive Project may also uncover historic hardscape, such as paths and stairways. Material such as brick and cobblestones would also be subject to recordation and salvage. This mitigation would be coordinated with monitoring measures defined in the *Architectural Treatment Plan*.

After Doyle Drive has been recorded in accordance with the appropriate level of documentation as determined by the NPS program of the HAER, all elements identified by the Golden Gate Bridge Highway and Transportation District as being desired for preservation and/or reuse would be salvaged. Because Doyle

Drive would continue to be used by the traveling public, and the light standards, a contributing element of Doyle Drive, continue to deteriorate, they would be replaced on an as needed basis as public health and safety require, prior to the demolition of the facility. Because any removed standards would be considerably deteriorated, they would not be offered to the Golden Gate Bridge Highway and Transportation District, but would be disposed of properly.

Conduct Post-Construction Condition Assessment, and a Re-evaluation of Resources

Following completion of construction of the new Doyle Drive, a post-construction conditions assessment and re-evaluation would be conducted pursuant to NRHP criteria, of specific buildings that were previously identified as contributors to the Presidio NHLD and portions of the cultural landscape of the Presidio NHLD to assess whether they still retain sufficient historic integrity to convey their significance.

National Historic Landmark Nomination for the Golden Gate Bridge

An NHL nomination was originally prepared by the National Park Service for the Golden Gate Bridge in 1997, but to date, the bridge has not been so designated. Current seismic reinforcement carried out by the Golden Gate Bridge Highway and Transportation District, in addition to the replacement of the contributing Doyle Drive, would have altered this property, necessitating that the contributing elements be redefined for it to be nominated as a NHL. Following completion of construction of the new Doyle Drive, the NHL nomination form would be updated and submitted to the National Park Service.

Collections Management /Curation

The treatment plans would establish a comprehensive collection program which would be implemented as part of the project for materials discovered during excavation, as well as for records created in support of historic preservation efforts. The program would include a complete collections management protocol that would include accessioning and cataloging, curatorial and preservation treatment, and disposition of these materials into a collections management facility designated by the Trust. This program would be developed in consultation with the Trust FPO.

7.8 Coordination/Officials With Jurisdiction

Agency coordination is integral to the Doyle Drive Project to ensure compatibility with plans and policies in addition to balancing the various resources interests such as cultural, biological and visual. More than 100 interagency coordination meetings have been held thus far.

The two primary agencies having jurisdiction over the Presidio are the Presidio Trust, which is the land manager responsible for long range planning in Area B (within which most of the proposed Doyle Drive project occurs) and the