



Golden Gate Bridge

Physical Suicide Deterrent System Project

Project Purpose

The Golden Gate Bridge, Highway and Transportation District has investigated both physical and non-physical measures to stop people from committing suicide by jumping off the Bridge and currently utilizes several nonphysical suicide deterrent systems.

The District has commissioned the project to consider the installation of a physical suicide deterrent system on the east and west sides of the Bridge.

Project Need

The need for the project stems from the following key factors:

- The Bridge's sidewalks are open to the public and the existing outside railing along the sidewalks is four feet high
- Individuals of varying heights, weights, ages and sexes, who were not using the Bridge sidewalks for their intended purpose, have climbed over the existing railing and jumped to their death
- There is no other physical barrier preventing an individual from jumping, once the railing has been scaled
- It is estimated that approximately 1,300 individuals have committed suicide by jumping off the Bridge

Project Criteria

The District Board of Directors adopted the following criteria. A potential physical suicide deterrent system for the Bridge must:

- Impede the ability of an individual to jump off the Bridge
- Not cause safety or nuisance hazards to sidewalk users including pedestrians, bicyclists, District staff, and District contractors or security partners
- Must be able to be maintained as a routine part of the District's ongoing Bridge maintenance program and without undue risk of injury to District employees
- Not diminish ability to provide adequate security of the Bridge
- Continue to allow access to the underside of the Bridge for emergency response and maintenance activities
- Not have a negative impact on the wind stability of the Bridge
- Satisfy requirements of state and federal historic preservation laws
- Have minimal visual and aesthetic impacts on the Bridge
- Be cost effective to construct and maintain
- Not in and of itself create undue risk of injury to anyone who comes in contact with the suicide deterrent system
- Not prevent construction of a moveable median barrier on the Bridge

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Non-Physical Suicide Deterrent Measures Currently In Use Prevent Approximately 2/3 of Suicide Attempts

Crisis Phones

Eleven emergency and crisis counseling telephones are located on the Bridge sidewalks.

Bridge security staff can connect callers, at their request, to suicide prevention counselors at the San Francisco Suicide Prevention's crisis line.

Bridge Patrols

Bridge patrol officers and California Highway Patrol officers trained in suicide intervention are deployed on the Bridge.

Bridge Workers

All Bridge workers who have volunteered to assist in suicide intervention and rescue activities have received special training.

Cameras

A network of closed-circuit cameras that have the primary purpose of preserving the security of the Bridge are also available to aid in directing intervention personnel.

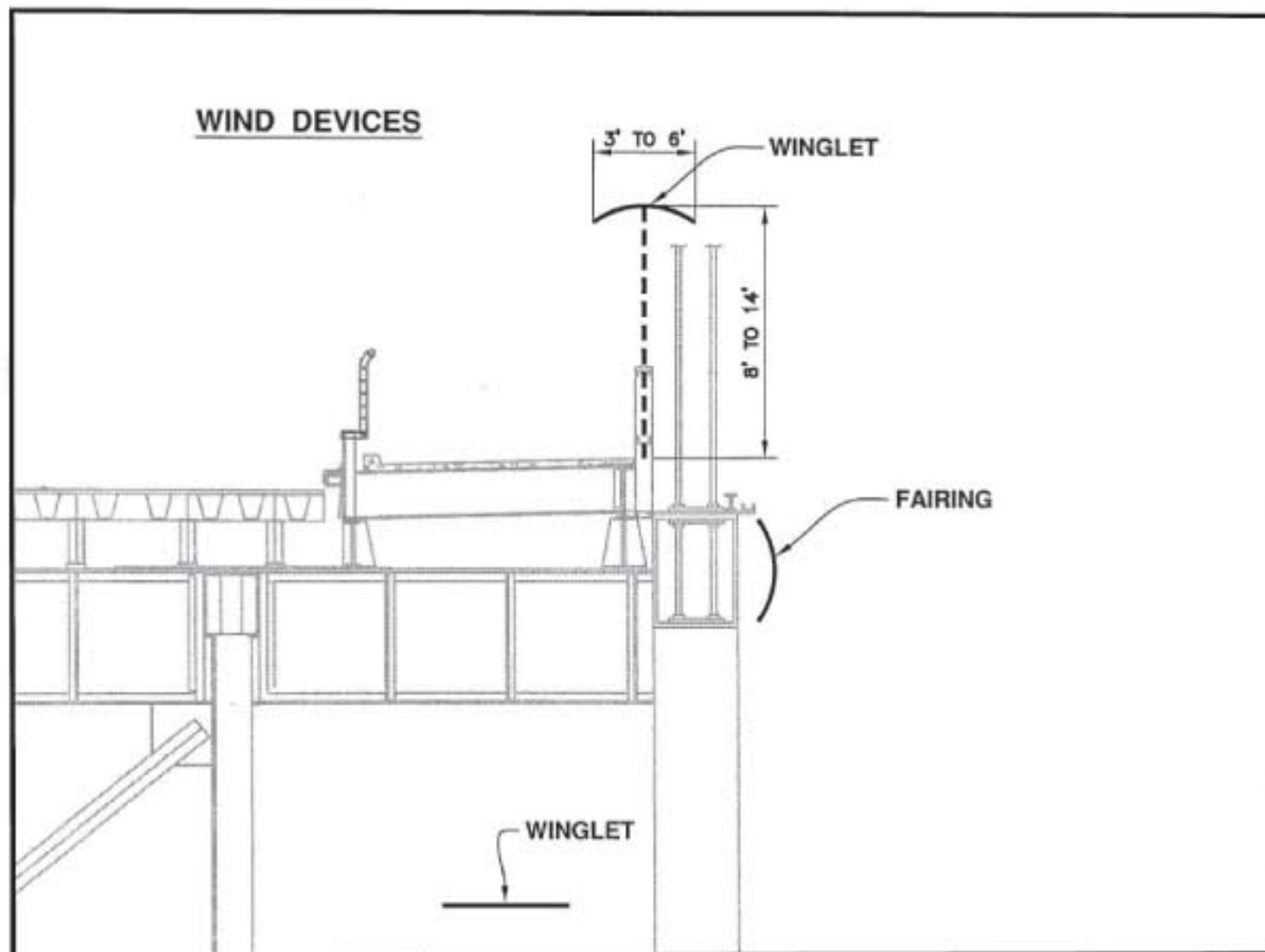


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Wind Study Findings - May 2007

WIND TUNNEL TESTING IS A PASS/TEST FAIL TEST CONDUCTED TO ENSURE THE STABILITY OF THE GOLDEN GATE BRIDGE IN HIGH WIND CONDITIONS.



THREE GENERIC CONCEPTS WERE WIND TUNNEL TESTED

- Add to existing outside railing
- Replace existing outside railing
- Extend net out horizontally

DESIGN VARIABLES DEFINED

- Heights could range from 8 to 12 feet
- Solid ratios could range from 12 to 23%
- Wind devices are needed



The wind tunnel testing confirmed that a physical suicide barrier is compatible with the placement of a moveable median barrier on the Golden Gate Bridge roadway.

The Alternatives

Alternative 1A

Adds 8-foot-tall vertical system to existing 4-foot-tall outside handrail, total height 12 feet



Alternative 2A

Replaces 4-foot outside handrail with 12-foot-tall vertical system, total height 12 feet



Alternative 3

Adds horizontal net system 20 feet below the sidewalk, extending 20 feet out from the GGB horizontally



Alternative 1B

Adds 8-foot-tall horizontal system to existing 4-foot-tall outside handrail, total height 12 feet



Alternative 2B

Replaces 4-foot outside handrail with 10-foot-tall horizontal system with winglet on top, total height 10 feet



The No Build Alternative
Continue Non-Physical Suicide Deterrent Programs



The cost estimate for all Build Alternatives is approximately \$40-50 million



Alternative 1A - Adds 8-foot-tall vertical system to 4-foot handrail
Sidewalk View South



Alternative 1B - Adds 8-foot-tall horizontal system to 4-foot handrail, with winglet on top
Sidewalk View South



Alternative 2A - Replaces 4-foot handrail with 12-foot-tall vertical system
Sidewalk View South



Alternative 2B - Replaces 4-foot handrail with 10-foot-tall horizontal system, with winglet
Sidewalk View South



Alternative 3 - Add horizontal net system, 20 feet below and extending 20 feet out
View North at Tower



No Build Alternative
Sidewalk View South



Alternative 1A - Adds 8-foot-tall vertical system to 4-foot handrail
Sidewalk View North



Alternative 1B - Adds 8-foot-tall horizontal system to 4-foot handrail, with winglet on top
Sidewalk View North



Alternative 2A - Replaces 4-foot handrail with 12-foot-tall vertical system
Sidewalk View North



Alternative 2B - Replaces 4-foot handrail with 10-foot-tall horizontal system, with winglet
Sidewalk View North



Alternative 3 - Add horizontal net system, 20 feet below and extending 20 feet out
View North at Tower



No Build Alternative
Sidewalk View North



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Summary of Environmental Impact Analysis

Visual/Aesthetics

Visual / Aesthetics analysis assesses the visual impacts from 14 representative viewpoints and considers impacts to:

- existing visual conditions and on visual resources;
- viewer response considering vividness and intactness of views, unity of views, overall visual quality.

Cultural Resources/ Historic Preservation

Cultural Resources / Historic Preservation analysis reports on historic resources in the vicinity, along with addressing pertinent governing federal, state and local regulations.

Land Use

Land Use analysis identifies existing land use and transportation plans and policies that apply to the project area, describes changes that would occur as a result, evaluates the consistency of the alternatives with local and regional planning policies.

Parks & Recreation

Park & Recreational Facilities analysis describes potential impacts and benefits to park and recreational facilities in the vicinity. Impacts can be physical in nature or can be related to the users' enjoyment of the facility.

Biological Resources

Biological Resources analysis describes the regulatory setting and the existing plant and wildlife species in the project area. The location of the wildlife and potential effects that result from the alternatives are evaluated.

The following environmental issues were considered but no adverse impacts were identified: growth, farmlands/timberlands, community impacts, utilities/emergency services, traffic and transportation/pedestrian and bicycle facilities, hydrology and floodplain, water quality and storm water run-off, geology/soils/seismic/topography, paleontology, hazardous waste/materials, air quality, noise, energy, natural communities, wetlands and other waters.



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Summary of Findings

Visual/Aesthetics

- Impacts to views TOWARD the Bridge are negligible to minimally adverse with one exception - view impact is adverse from Vista Point toward the Bridge.
- For the four railing alternatives (Alts. 1A, 1B, 2A, 2B), impacts to views FROM the Bridge are adverse to strongly adverse.
- For the net alternative (Alt. 3), impacts to views FROM the Bridge are negligible with one exception of adverse at two main towers

Cultural Resources/ Historic Preservation

As the Bridge is eligible for listing in the National Register of Historic Places, any of the Build Alternatives would cause direct adverse effects because each of the Build Alternatives would alter the historic property.

Land Use

The Build Alternatives are consistent with local and regional plans and policies. Since the Build Alternatives would be constructed entirely on the Bridge, there would be no impact to the existing land use of the Bridge or the properties or recreational facilities surrounding the Bridge.

Parks & Recreation

The Build Alternatives would impact the recreational experience of users on the Bridge sidewalks. Also, should a Build Alternative go to construction, the parking lot on Merchant Road would potentially be impacted during construction if used as a staging area.

Biological Resources

The Build Alternatives would not impact any federal or state listed species or sensitive biological resources and they would not include the development or direct disturbance of plant communities or aquatic habitats.

As focused studies have not been conducted to determine if bird collisions would be likely at the transparent panels in Alternatives 1A, 1B, 2A, 2B or in the netting in Alternative 3, it is assumed that the use of the panels or netting may adversely affect various bird species.

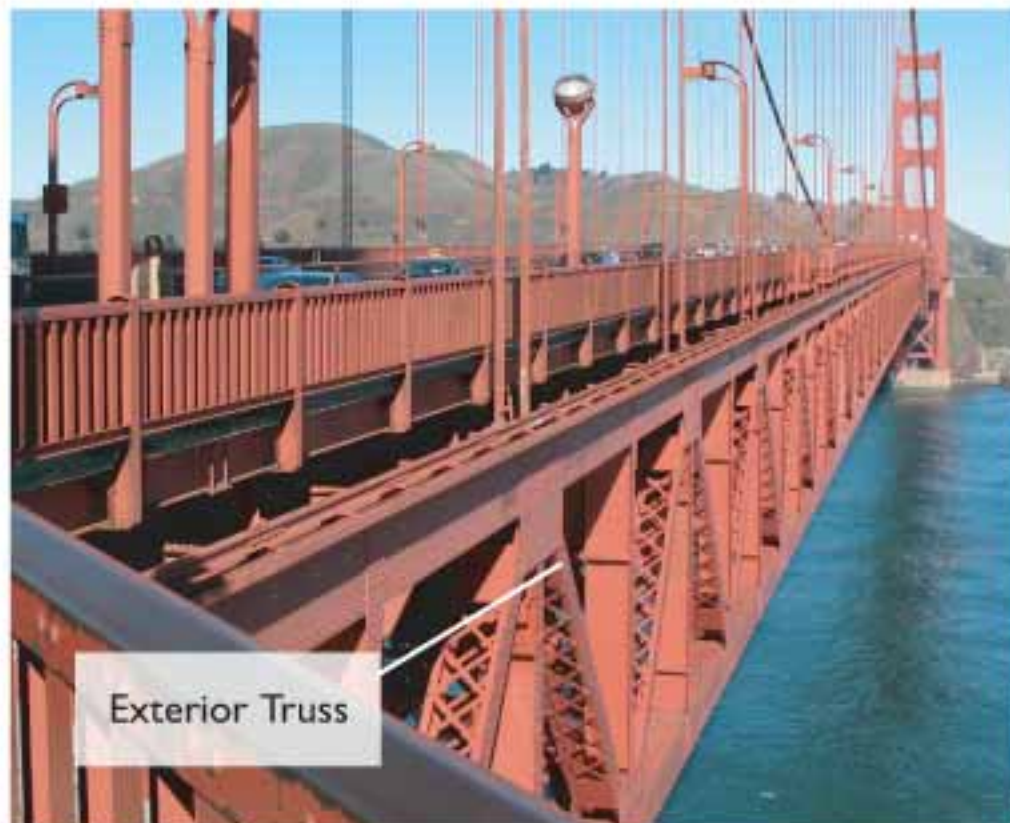
The Bridge provides potentially suitable nesting habitat for the peregrine falcon, and should an active nest of the species be present, construction related activities may result in the abandonment of the nest.

If a Build Alternative is selected, the District would retain the services of a qualified avian biologist to further evaluate the potential of birds to nest and/or collide with the transparent panels and netting. Further, should it be found that the use of the transparent panels or netting pose a substantial collision risk to birds, appropriate design measures would be implemented.

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Cultural Resources / Historic Preservation Analysis Findings



As the Bridge is eligible for listing in the National Register of Historic Places, any of the Build Alternatives would cause direct adverse effects because each of the Build Alternatives would alter the historic property.

Direct Adverse Effects

Complete or partial removal and/or alteration of character-defining features of the Bridge, specifically the 4-foot-tall outside handrail and the exterior truss.

Indirect Adverse Effects

- Introduction of visual elements out of character with the original design of the historic property.
- Change in the character of its use as a historic property by changing the original design of the 4-foot-tall outside handrail which allows pedestrians and bicyclists to lean over and experience the views.
- Addition of barrier systems where none existed originally.
- Use of non-historic materials (transparent panels, winglets, metal rods, cable netting).
- Alteration of the pedestrian, bicyclist and vehicle occupant experience on the Bridge.



Visual Impacts - View From Boat to Northwest

Alternative 1A: Add vertical system to handrail - *minimally adverse visual impact*



Alternative 2A: Replace handrail with vertical system - *minimally adverse visual impact*



Alternative 3: Add net - *minimally adverse visual impact*



Alternative 1B: Add horizontal system to handrail - *minimally adverse visual impact*



Alternative 2B: Replace handrail with horizontal system - *minimally adverse visual impact*



No Build Alternative: *No visual impact*



Visual Impacts - View From Vista Point to South

Alternative 1A: Add vertical system to handrail - *adverse visual impact*



Alternative 2A: Replace handrail with vertical system - *adverse visual impact*



Alternative 3: Add net - *adverse visual impact*



Alternative 1B: Add horizontal system to handrail - *adverse visual impact*



Alternative 2B: Replace handrail with horizontal system - *adverse visual impact*



No Build Alternative: *No visual impact*



Visual Analysis - View From Fort Point to Northwest

Alternative 1A: Add vertical system to handrail - *minimally adverse visual impact*



Alternative 2A: Replace handrail with vertical system - *minimally adverse visual impact*



Alternative 3: Add net - *minimally adverse visual impact*



Alternative 1B: Add horizontal system to handrail - *minimally adverse visual impact*



Alternative 2B: Replace handrail with horizontal system - *minimally adverse visual impact*



No Build Alternative: No visual impact



Visual Impacts - View From North Fishing Pier to Southwest

Alternative 1A: Add vertical system to handrail - *minimally adverse visual impact*



Alternative 2A: Replace handrail with vertical system - *minimally adverse visual impact*



Alternative 3: Add net - *minimally adverse visual impact*



Alternative 1B: Add horizontal system to handrail - *minimally adverse visual impact*



Alternative 2B: Replace handrail with horizontal system - *minimally adverse visual impact*



No Build Alternative: No visual impact



Visual Impacts - View North on Roadway

Alternative 1A: Add vertical system to handrail - *adverse visual impact*



Alternative 2A: Replace handrail with vertical system - *adverse visual impact*



Alternative 3: Add net - *negligible visual impact*



Alternative 1B: Add horizontal system to handrail - *adverse visual impact*



Alternative 2B: Replace handrail with horizontal system - *adverse visual impact*



No Build Alternative: *No visual impact*



Visual Impacts - View East From Roadway

Alternative 1A: Add vertical system to handrail - *strongly adverse visual impact*



Alternative 2A: Replace handrail with vertical system - *strongly adverse visual impact*



Alternative 3: Add net - *negligible visual impact*



Alternative 1B: Add horizontal system to handrail - *strongly adverse visual impact*



Alternative 2B: Replace handrail with horizontal system - *strongly adverse visual impact*



No Build Alternative: No visual impact





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Actions Taken

- September 2006 - Consultant contract awarded
- May 2007 - Release of Wind Tunnel Testing Study
- July 8, 2008 - Release draft environmental document for public comment

Next Steps

- July 22 and 23, 2008 - Public meetings on the draft environmental document
- August 25, 2008 - Deadline for the public to submit comments on the draft environmental document
- September 2008 - Public comments are reviewed by the Golden Gate Bridge, Highway and Transportation District (District)
- October 2008 - District Board of Directors could select a "locally preferred alternative" or take no action at a scheduled meeting of the Board of Directors
- Late 2008 - If a "locally preferred alternative" is selected, the preparation of a final environmental document would commence. It will include responses to comments, more detailed analysis on any "locally preferred alternative" and must include a financing plan before it can be released and certified at the federal level.