



Point Bonita Bridge Replacement Project

Proposed Project

The project proposes to replace the existing pedestrian cable suspension bridge utilizing the existing concrete tower foundations and cable anchor blocks with a visually almost identical structure. The new structure will use the same type of materials as the existing structure but it will be upgraded to be in compliance with existing codes.

Current Site Conditions

The pedestrian bridge at the Point Bonita Lighthouse provides access to the lighthouse for the United States Coast Guard, National Park personnel and the public. The lighthouse sits on a promontory that is accessible only by using the bridge (Figure 1). The existing wooden bridge was constructed in 1954 when recurring slope failures made overland access to the lighthouse impossible. The lighthouse exists in harsh conditions exposed continually to the marine environment. This exposure has resulted in considerable corrosion and weathering which has compromised the integrity of some of the bridge components. Currently, due to its deteriorated condition the bridge is closed to the public and has a "two person" weight limit for worker access.

Site Geology

The geology of the bluffs surrounding the bridge location are Cretaceous aged meta-dabase, meta-basalt and meta-pillow basalt that exhibit a low degree of metamorphism. The meta-pillow basalts form the base of Point Bonita and can clearly be seen from the bluffs at the site (Figure 2). The meta-dabase lies above the pillow basalt and is the material directly underlying the western end of

Purpose and Need

In 1954, the U.S. Coast Guard built a suspension footbridge to access the Point Bonita Lighthouse on the outer northwestern point overlooking San Francisco Bay. Since then the bridge has undergone at least two major renovations, including replacement of principal components of the bridge. In recent years, access to the bridge has been limited to only two people at a time. In July 2008, the bridge was closed to all public traffic due to the severe deterioration of cables and associated hardware. The Coast Guard made temporary repairs and re-opened the bridge, but has had to maintain the two-people-at-a-time limit. The bridge has been recommended for replacement as soon as plans can be prepared and funding secured.

Figure 1. Point Bonita Bridge and Lighthouse - Marin Headlands



of the bridge. Both the western bridge tower and anchor block are founded in the diabase. Based upon visual observations at the surface and examination of rock core from the exploratory boring. The diabase is

weathered, hard, and moderately fractured. These features are creating wedge failures resulting in oversteepened slopes and potentially unstable conditions of the bridge.

Rock Stabilization and Reinforcement Recommendations

Investigations have determined that the east abutment of the bridge does not appear to pose any imminent rock stability issues and therefore bluff stabilization is not needed in this area. However, the west abutment will require rock stabilization and reinforcement.

Along the north side of the western abutment rock slope failures have occurred leaving an unstable overhanging rockmass (Figure 3). And, because the south side of the western abutment is also displaying fracturing and instability, it is recommended that the entire west abutment be stabilized.

To address this instability engineers have recommended that the bluff be stabilized using two stabilization techniques:

- installing a high strength stainless steel mesh net with tensioned rock bolts of staggered length and pattern; and
- placement of a shotcrete buttress recessed into the existing wedge failure area below the rock overhang (block A) on the north facing slope (see Figure 3).

Construction

The project is scheduled to start in September 2011 and continue for approximately 6 months. During construction the bridge will be closed to the public.

Public Comments (due by May 27, 2011)

The NPS is interested to learn about any any issues or concerns you may have regarding the project. Understanding these issues and concerns will assist NPS complete the environmental compliance for this project. Your comments can best be incorporated into our decisionmaking if they are received by May 27, 2011.

Comments may be submitted as follows:

- Online at www.parkplanning.nps.gov/PointBonitaBridge

Figure 2. Bluff Geology



Figure 3. Mesh and Buttress



- By mail to:
Superintendent
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Fort Mason, Building 201
San Francisco, CA 94123-1307
Attn: Point Bonita Bridge Replacement Project

If you have questions on the project or the public scoping process, or to seek additional information, please visit www.parkplanning.nps.gov/PointBonitaBridge, or contact Dave Dusterhoff, Project Manager, at (415) 561-4977 or email goga_planning@nps.gov.