

## **Mitigation and Restoration Plan**

### **Honoapi‘ilani Highway Shoreline Protection, Olowalu, Maui POH-2008-256**

April 26, 2010

#### **Project Description<sup>1</sup>**

This project proposes the placement of large boulders along a 900-foot section of eroding shoreline at Olowalu to repair damage to the shoulder of Honoapi‘ilani Highway. Boulders, ranging in size from 2.3 to 3.8 tons will be used to stabilize the shoreline slope. The construction plan calls for geotextile fabric to be installed first, followed by the boulder fill. Smaller rocks will be installed under the large boulders to stabilize the ground. The boulder fill may extend up to 40 feet offshore.

The crest elevation is approximately 8 feet MSL, or about the same elevation as the edge of the highway pavement. The low crest elevation will minimize the horizontal footprint of the boulder fill. Jersey barriers will be placed along the edge of the boulder slope to define the outer edge of a 15-foot shoulder, which is sufficiently wide to facilitate construction. Pending a warrant, the jersey barriers will remain in place after construction is completed to mitigate damage to the highway from overtopping waves.

In preparation for the boulder fill, the underlying area will be dredged to remove loose material and provide a stable surface. All dredged material will be disposed of according to applicable State and County regulations. To the extent practicable, dredging and construction work will be carried out using equipment stationed landside. However, for technical and safety reasons, the Contractor may find it necessary to place construction equipment in coastal waters.

An existing 24-inch drain line outlet will be extended to accommodate the shoreline improvements and a new headwall will be installed at the outlet.

The proposed action will affect the Honoapi‘ilani Highway right-of-way and a portion of the government beach reserve identified as TMK: (2) 4-8-003:006. The highway is under the jurisdiction of the applicant, the State Department of Transportation (HDOT), and the beach reserve is under the jurisdiction of the State Department of Land and Natural Resources.

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<sup>1</sup> The project description was slightly modified during the final stages of design. These design changes are not reflected in this document, which remains unchanged from the document submitted with the Department of the Army permit application for POH-2008-256. The design changes were reviewed by Mr. Farley Watanabe in the U.S. Army Corps of Engineers Regulatory Branch who determined that the changes would not require submittal of a new application and that the Provisional Verification of Nationwide Permit #18, issued on April 20, 2012 remains valid.

## Coastal Area

**Construction Mitigation Measures.** Construction activities in the vicinity of the shoreline can lead to increased turbidity. The Contractor will be required to implement mitigation measures specified in the Final Environmental Assessment (FEA):

- Proper storage, handling, and disposal of construction and waste materials (FEA, p. 32)
- Washing of construction equipment in a manner that allows for the proper disposal of the resultant wastewater (FEA, p. 32)
- Monitoring to ensure that heavy machinery is not leaking fluids of any kind (FEA p. 32)
- Use of silt fencing, to be implemented both prior to and during grading and construction to minimize opportunities for soil erosion at the site (FEA, p. 25)
- Daily inspection at the project site to ensure that erosion control measures are maintained. (FEA, p. 25)
- Proper use of silt curtains during under water construction activities. (FEA, p. 32)
- A water quality monitoring program of the project area shoreline will be carried out to establish pre-construction and post-construction conditions and will determine if more specific mitigation measures will be warranted. (FEA, p. 28)
- Water quality monitoring during construction activities to ensure compliance with permit requirements (FEA, p. 32)
- Construction activities will be curtailed during adverse seas and high rainfall conditions. (FEA, p. 32)
- Construction activities will be scheduled to ensure that the proposed action will not result in adverse impacts to existing coral species nor the destruction or adverse modification of their habitats (FEA, p. 29)
- No night lighting is proposed in connection with the shoreline project, and project construction will take place only during daylight hours. (FEA 29)

Additional BMPs requirements will be incorporated into the project as recommended by the U.S. Fish and Wildlife Service (see attached letter dated June 18, 2009; Ref: 12200-2009-FA-0076):

- a. turbidity and siltation from project-related work shall be minimized and contained within the vicinity of the site through the appropriate use of effective silt containment devices and curtailment of work during adverse tidal and weather conditions;
- b. dredging/filling in the marine environment shall be scheduled to avoid coral spawning and recruitment periods;
- c. dredging and filling in the marine/aquatic environment shall be designed to avoid or minimize the loss of special aquatic site habitat (coral reefs, wetlands, etc.) and the unavoidable loss of such habitat shall be compensated for;

(Note: Item “d” missing in original transmittal from USFWS)

- e. all project-related materials and equipment (dredges, barges, backhoes etc.) to be placed in the water shall be cleaned of pollutants prior to use;
- f. no project-related materials (fill, revetment rock, pipe, etc.) should be stockpiled in the water (intertidal zones, reef flats, stream channels, wetlands, etc.);
- g. all debris removed from the marine/aquatic environment shall be disposed of at an approved upland or ocean dumping site;
- h. no contamination (trash or debris disposal, non-native species introductions, attraction of non-native pests, etc.) of adjacent habitats (reef flats, channels, open ocean, stream channels, wetlands, etc.) shall result from project-related activities;
- i. fueling of project-related vehicles and equipment should take place away from the water and a contingency plan to control petroleum products accidentally spilled during the project shall be developed and absorbent pads and containment booms shall be stored on-site, if appropriate, to facilitate the clean-up of accidental petroleum releases;
- j. any under-layer fills used in the project shall be protected from erosion with cover stones (or core-loc units) as soon after placement as practicable; and
- k. any soil exposed near water as part of the project shall be protected from erosion (with plastic sheeting, filter fabric etc.) after exposure and stabilized as soon as practicable (with native or non-invasive vegetation matting, hydroseeding, etc.).

**Restoration.** Since the project's objective is to protect the highway from coastal erosion through the placement of boulders and cobbles, changes in shoreline conditions will reflect the construction effort. The beach will continue to be a cobble beach with the addition of the boulder fill at the base of the fast land. No restoration efforts are planned for the coastal area; i.e., *makai* of the highway, beyond the scope of construction.

Public use of the shoreline may be restricted during the construction period for safety reasons. However, public shoreline access over the boulder and rock fill is expected to resume upon completion of the improvements.

Telephone poles that are currently on the *makai* side of the highway will be relocated by Hawaiian Telcom to the *mauka* side of the highway. The utility pole relocation will be undertaken by Hawaiian Telcom independently of the proposed action; however, the applicant will coordinate with Hawaiian Telcom to insure that existing and future utilities will not be affected by the proposed shoreline improvements.

### **Highway Right-of-Way**

**Construction Mitigation Measures within the Highway Right-of-Way.** As part of construction mobilization, jersey barriers will be installed at the edge of the highway right-of-way and the area backfilled to maximize the space available for construction to take place. The 15-foot shoulder will allow safe separation between the active work zone and public travel way. Construction work will be more efficient with adequate space to maneuver equipment and for short-term material storage.

There is a potential for discovery of buried cultural artifacts and/or human skeletal remains. To mitigate the potential for adverse effects, the following measures are specified in the FEA:

- Pursuant to Section 106 of the National Historic Preservation Act, consultation with the State Historic Preservation Office, Federal Highway Administration, and Native Hawaiian cultural groups will be undertaken to outline procedures for identification of, preservation of, and, if required, mitigation of effects on cultural material and/or human burials that may be discovered during project construction. (FEA, p. 36)
- In accordance with Section 6E-43.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if any significant cultural deposits or human skeletal remains are encountered, work will stop in the immediate vicinity and the State Historic Preservation Division and the Office of Hawaiian Affairs will be contacted. (FEA, p. 36)

- Archaeological monitoring will be undertaken during all ground altering disturbances within the project area. Prior to construction, a monitoring plan will be submitted to the State Historic Preservation Division for review and acceptance. (FEA, p. 37)
- Because Honoapi‘ilani Highway is the only major road providing access between West Maui and the island’s central valley, short-term impacts on traffic flow will be unavoidable during the construction period. The following measures will be taken to mitigate traffic congestion:
- Appropriate traffic control devices and plans will be identified prior to commencement of work. During construction, traffic control will be implemented to ensure the safe passage of vehicles using the highway during construction hours. (FEA, p. 46)
- Flag persons and police officers may be involved in directing traffic to allow trucks to maneuver and unload rock material. (FEA, p. 46)
- Appropriate signage and placement of traffic cones will be utilized to inform the traveling public of construction conditions. (FEA, p. 46)

**Highway Area Restoration.** The project will not change the highway alignment. Except for rehabilitating and extending the highway shoulder, as described above, there are no plans to alter the existing highway facility. Existing guardrails and signage will remain unchanged. The highway is not lighted within the project area and there are no plans to add lighting.

Because the pavement in the project area is in adequate condition, HDOT does not expect to do comprehensive road resurfacing when the project is completed. The Contractor will be required, however, to clean and remove debris from the construction area, and to make sure that all pavement surfaces are smooth and intact so that vehicles can transition safely from the travel lane to the shoulder. The Contractor will be required to remove all construction debris to a County-approved facility off site. If it is necessary to resurface the roadway, standard HDOT procedures will be followed to avoid adverse impacts to areas adjacent to the right-of-way.

Species now present in the project area, such as *kiawe*, will be permanently removed and replaced by indigenous trees and shrubs, such as *milo*, *naupaka*, and other plants that are appropriate to the setting. (FEA, p. 34)