

Kaunakakai Harbor Maintenance Dredging Project

U.S. Army Corps of Engineers Project-Specific Best Management Practices

This document compiles best management practices to be employed on the Kaunakakai Harbor Maintenance Dredging project. The BMPs listed below are intended to avoid and/or minimize impacts to aquatic resources and ecosystems that may be affected by the in-water maintenance dredging work and have been coordinated with federal and state resource agencies, as required. These BMPs are not all-inclusive of all BMPs for this project, especially standard industry practices that would also ameliorate potential for impacts to aquatic and ecological resources. All project BMPs will become specifications of the construction contract and will be implemented by responsible parties to the project including the construction contractor and the U.S. Army Corps of Engineers.

For the minimization and avoidance of impacts to Essential Fish Habitat and Water Quality

1. Upon completion of all activities, all project materials shall be removed and all areas temporarily impacted by construction activities shall be fully restored to their pre-construction conditions.
2. Vessels, barges or other in-water structures must first attempt to tie-off to existing harbor structures. If anchoring on the seafloor is necessary, then anchors must be placed exclusively in soft sediments. Anchors and anchor components must cause no direct physical impact to corals beyond the federal limits. Anchor and anchor-line footprints of all in-water equipment must be designed to occupy the smallest footprint necessary to achieve safe and effective anchorage.
3. During peak coral spawning (one week before and after the full moon in July and August), 1) dredging at night will be prohibited, and 2) any in-water sediment containment devices must not be left overnight.
4. While entering or exiting the harbor, all vessels, barges and scows must remain in the marked USCG ingress/egress channel until it passes the outer buoy.
5. Weather conditions must be considered to ensure the safety of equipment and personnel during in-water operations. Work must cease during unfavorable weather conditions such as storm surge, etc. that could compound impacts to surrounding resources. The Contractor shall use the PacIOOS data at <http://pacioos.hawaii.edu/> and other readily available tide and climate data to inform and adaptively manage dredge and water quality monitoring operations daily.

6. Subject to approval by the government, each vessel must have a written spill prevention plan on board that identifies the appropriate response and safety protocols and the contact information for appropriate authorities to be notified in the unlikely event of a spill.
7. Subject to approval by the government, the contractor must designate on-site personnel responsible for ensuring no inadvertent discharges of debris, petroleum, or other harmful materials into the water.
8. Subject to approval by the government, dredge operators must submit a contingency plan detailing progressive, action-specific, risk-based responses to potential malfunctions of dredge equipment, barges, scows and in-water BMPs such as sediment containment devices.
9. All dredge vessels, barges and scows must be equipped with Dredging Quality Management (DQM) instrumentation systems, or similar, to allow near real-time monitoring of the scow's status (e.g. GPS positioning, hull status (open or closed), heading (course and speed), volume (draft), displacement and bin ullage sounding) at all times to ensure performance, accuracy and accountability.
10. Subject to approval by the government, dredge operators must submit to the government maintenance and inspection records, current to within six months or since its last use for whatever purpose, for any containment scow to be used to complete the proposed work, and a plan for the continued maintenance and inspection through the construction period.
11. Containment scows must be adequately sized to prevent overflow/overtopping and must be equipped with functional seals to prevent leakage of dredged material.
12. In-water sediment containment devices must be used to contain project generated turbidity and prevent spread beyond the active work area.
 - a) Dredging shall not begin/resume until sediment control devices are properly deployed and fully encircling the active dredge area.
 - b) These devices must be clean of chemical, biological, or physical pollutants prior to placement in state waters and not become a source of water pollution during use.
 - c) The reach of the equipment is positioned inside the sediment containment device while the containment scow is positioned outside the sediment containment device, to minimize ingress/egress frequency.
 - d) Sediment containment devices must be appropriately sized. The dredging impact area shall be no larger than is required to operate the necessary equipment, and the size and position of the area must be strategically planned to

reduce the number of times it must be repositioned. Prior to repositioning, sediment containment devices must remain in place until turbidity levels within the enclosure have returned to ambient levels.

e) In the limits of this project, a full-depth silt curtain shall be employed to encircle the active dredging area.

f) If conditions require mid-depth silt curtains, which shall be confirmed by the Government, Contractor shall be required to employ an environmental bucket to minimize turbidity and comply with State Water Quality Standards.

g) Sediment containment devices should be inspected on a regular basis, with daily

inspections during and after the presence of other marine traffic using the harbor and during and after experiencing severe weather conditions (i.e., strong currents, high winds and/or waves). Contractor should be prepared to remove these devices in advance of severe storms to avoid risk of damage or loss.

Inspection and maintenance protocols shall be described in the BMP Plan.

13. Contractor shall deploy the sediment containment device no closer than 10 feet from the base of the hardbottom ledge along the western portion of the project area and 10 feet from the entire pier.

Contractor shall monitor the positioning of the sediment containment device throughout the dredge action and must stop work and reposition the device if its ballast migrates closer than 10 feet of the base of the ledge or the pier face.

14. For locations where the use of mid-depth silt curtains is approved by the USACE, the contractor shall employ an environmental bucket.

15. The Contractor shall monitor for heightened sea states or other conditions that may cause the silt curtain ballast to shift position and/or the silt curtain to move about excessively, and thereby increase the risk of abrasion or other damage to coral.

The Contractor shall avoid dredging areas located in proximity to known high coral cover areas during such conditions. The Contractor will be provided with maps of hard substrate and coral abundance created by the USFWS from their 2020 survey.

Contractor shall:

a) Prioritize areas located in close proximity to or up-current of known high coral cover area during calm sea state.

b) Minimize the area encircled by the silt curtain to the greatest extent practicable when dredging areas located in close proximity to or up-current of known high coral cover areas.

16. Contractor must develop and submit to the Government a site-specific BMP plan to be reviewed and approved by the Government prior to start of work. The Site-Specific BMP Plan must contain turbidity to the active dredge area to the greatest extent practicable. The plan must include a visual turbidity monitoring plan throughout the duration of construction to ensure the efficacy of the

sediment containment BMP in comparison to ambient levels. When reviewing the contractor's proposed BMP plan, the Corps will only approve a plan that, at a minimum, includes the following or comparable alternative components:

- a. The contractor shall prepare a housekeeping policy for land-based staging areas and project vessels that controls trash, debris, and project chemicals and fluids (gasoline, oil) from entering state waters. There shall be no discharge of any type of wash water and/or effluent into State waters without first obtaining a DOH National Pollutant Discharge Eliminations System (NPDES) permit authorizing such discharge into State waters.
- b. At least once per day, the contractor shall look for turbid water escaping the active dredge area into the harbor, and note the size, direction and duration of the turbidity plume. The contractor shall document and report any violation of State water quality standards to the appropriate Corps representative, and as needed, enact contingency measures to address this violation.
- c. Visual inspection of sediment containment devices of sufficient frequency to minimize potential failure and ensure proper use and installation. Contractor shall include inspection protocols in the BMP Plan, and consider the following items:
 - i. Confirmation that the design freeboard is being maintained. If freeboard is reduced, inspect the curtain skirt for marine growth, sediment or debris that might cause reduced freeboard. Check floats for damage.
 - ii. Confirmation that the curtain is maintaining its anchored profile. If the curtain or a portion thereof appears out of place, inspect the anchoring system and placement of the anchors. Adjust and/or repair the anchoring system as required.
 - iii. Ensure the turbidity curtain has not moved into shallower water whereby the bottom of the curtain is resting on bottom.
 - iv. The weight of the ballast chain can slowly work itself into the bottom soil over time and become lodged. When removing or repositioning the turbidity curtain, ensure that the ballast chain is not held so securely by the sediment that the skirt will tear away from the ballast chain pocket.
 - v. At 1–2-month intervals, inspect the curtain for UV radiation damage, chemical damage and marine growth. As needed, remove excessive marine growth in a manner that does not violate state water quality standards. This may require removal/replacement with land-based cleaning that does not allow wash water to enter State waters.
- iv. Documentation of non-compliance of any Blanket 401 WQC conditions (e.g., visual plume outside of enclosed active dredge area) and action taken to address non-compliance; and,

- v. Maintain monitoring and inspection records, including actions taken to correct violations, at the project site or nearby field office that demonstrate compliance with all Blanket 401 WQC conditions.
- vi. Establishment of a turbidity threshold (e.g. 10% above ambient) and corresponding progressive responses to exceedances including inspecting the BMPs, replacing the BMPs, adjusting/doubling up BMPs, and stopping work.
- vii. Contractor shall prepare, as a stand-alone document or part of the BMP plan, an anchor monitoring plan detailing measures to control and monitor the positions of all anchors and anchor cables, sufficient to avoid damage to corals and other marine growth.

For the minimization and avoidance of impacts to protected species under NMFS jurisdiction

General Conditions for ESA Compliance

1. The Contractor must document and report to the Civil Works Environmental Compliance Coordinator, all interactions with listed species, including the disposition of any listed species that are injured or killed. Should an ESA-listed species be adversely affected, all work adversely affecting the species must stop and the Civil Works Environmental Compliance Coordinator immediately contacted.
2. Constant vigilance shall be kept for the presence of ESA-listed marine species throughout the performance period
 - a. The Contractor shall designate a competent observer to search/monitor work sites and the areas adjacent to the authorized work area for ESA-listed marine species.
 - b. Searches and monitoring shall be made prior to the start of work each day, including prior to resumption of work following any break of more than one-half hour. Additional period searches and monitoring throughout the workday are strongly recommended.
 - c. Project-related personnel shall not attempt to disturb, touch, ride, feed or otherwise intentionally interact with any protected species;
 - d. All in-water work will be postponed or halted when ESA-listed marine species are within 50 yards of the proposed work, and will only begin/resume after the animals have voluntarily departed the area, with the following exception: if ESA-listed marine species
 - e. are noticed within 50 yards after work has already begun, that work may continue only if, in the best judgment of a biologist, the activity is unlikely to disturb or harm the animal(s), for example, divers performing surveys or

underwater work (excluding the use of toxic chemicals) is likely safe, the use of heavy machinery is not.

3. Project footprints must be limited to the minimum area necessary to complete the project.
4. Project operations must cease under unusual conditions, such as large tidal events and high surf conditions, except for efforts to avoid or minimize resource damage.
5. A pollution and erosion control plan for upland work and adjacent areas must be prepared and carried out for all ground disturbing activities. As a minimum, this plan shall include:
 - a. Proper installation and maintenance of silt fences/curtains, saudades, equipment diapers, or drip pans.
 - b. A contingency plan to control and clean spilled petroleum products and other toxic materials.
 - c. Appropriate materials to contain and clean potential spills will be stored at the work site, and be readily available.
 - d. All project-related materials and equipment placed in the water will be free of pollutants.
 - e. Daily pre-work inspections of heavy equipment for cleanliness and leaks, with all heavy equipment operations postponed or halted until leaks are repaired and equipment is cleaned.
 - f. Fueling of project-related vehicles and equipment will take place at least 560 feet away from the water and within a containment area, preferably over an impervious surface.
 - g. A plan will be developed to prevent trash and debris from entering the marine environment.
6. Erosion controls must be properly installed before any alteration of the project area may take place.
7. Temporary access roads and drilling pads must avoid steep slopes, where grade, soil types, or other features suggest a likelihood of excessive erosion or failure; existing access routes must be utilized or improved whenever possible, in lieu of construction of new access routes.
8. Native species suitable for the impacted habitat must be considered for re-vegetation for the purposes of restoring upland areas temporarily disturbed by the authorized work to their pre-disturbance conditions.

Project-Specific Best Management Practices for ESA Compliance

1. Vessel operators shall alter course to remain at least 100 yards from whales, and at least 50 yards from other marine mammals and sea turtles.

2. Vessel operators shall reduce vessel speed to 10 knots or less when piloting vessels in the proximity of marine mammals, and to 5 knots or less when piloting vessels in areas of known or suspected turtle activity.
3. If approached by a marine mammal or turtle, the vessel operator shall put the engine in neutral and allow the animal to pass.
4. Vessel operators shall not encircle or trap marine mammals or sea turtles between multiple vessels or between vessels and the shore.
5. Before any equipment, anchor(s), or material enters the water, a responsible party, i.e., permittee/site manager/project supervisor, shall verify that no ESA-listed species are in the area where the equipment, anchor(s), or materials are expected to contact the substrate. If practicable, the use of divers to visually confirm that the area is clear is preferred.
6. Equipment operators shall employ "soft starts" when initiating work each day and after each break of 30 minutes or more that directly impacts the bottom. Buckets and other equipment shall be sent to the bottom in a slow and controlled manner for the first several cycles before achieving full operational impact strength or tempo.
7. All objects lowered to the bottom shall be lowered in a controlled manner. This can be achieved using buoyancy controls such as lift bags, or the use of cranes, winches, or other equipment that affect positive control over the rate of descent.
8. Mooring systems shall employ the minimum line length necessary to account for expected fluctuations in water depth due to tides and waves.
9. Mooring systems shall be designed to keep the line as tight as possible, with the intent to eliminate the potential for loops to form.
10. Mooring lines shall consist of a single line. No additional lines or material capable of entangling marine life may be attached to the mooring line or to any other part of the deployed system.
11. Mooring systems shall be designed to keep the gear off the bottom, by use of a mid-line float when appropriate, with the intent to eliminate scouring of corals or entanglement of the line on the substrate.
12. Any permanent or long-term deployment shall include an inspection and maintenance program to reduce the likelihood of failures that may result in loose mooring lines lying on the substrate or hanging below a drifting buoy.
13. Mooring systems, including those used for temporary markers, scientific sensor buoys, or vessel moorings, shall be completely removed from the marine environment immediately at the completion of the authorized work or the end of the mooring's service life. The only exceptions to this rule shall be mooring anchors such as eyebolts that area epoxied into the substrate and which pose little or no risk to marine life.
14. Maintenance dredging shall not be undertaken if any ESA-listed species is within 50 yards of the authorized work, and those operations shall immediately shut-down if an ESA-listed species enters within 50 yards of the authorized work.

15. Anchoring locations and moorings must be designed to avoid, to the greatest extent practicable, impacts to live corals, sea grass, and other benthic organisms.
16. With the exception of the actual dredging apparatus (e.g. clamshell buckets, or the scoop and articulated arm of a backhoe, hydraulic head, etc.), heavy equipment will be operated from above and out of the water.
17. The portions of the equipment that enter the water will be clean and free of pollutants.
18. Appropriate silt containment devices must be used and properly installed to avoid degradation of adjacent coral reefs, and aquatic vegetation.
19. Fully shield all outdoor lights so the bulb can only be seen from below bulb height and only use when necessary.
20. Install automatic motion sensor switches and timer controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area.

For the minimization and avoidance of impacts to protected seabirds under USFWS jurisdiction

1. Fully shield all outdoor lights so the bulb can only be seen from below bulb height and only use when necessary.
2. Install automatic motion sensor switches and timer controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area.
3. Avoid nighttime dredging at Kaunakakai during the seabird fledging period, September 15 through December 15, and minimize nighttime dredging at Kahului by limiting to activities necessary to accommodate essential harbor operations and meet the contract schedule.