

Appendix A

Minimization or Avoidance Measures and Best Management Practices for Jackson Hole Flood Protection Project Operation and Maintenance Actions

The Corps will include the following minimization/avoidance measures and best management practices as part of any operation and maintenance action implemented for the Jackson Hole Flood Protection Project (JHFPP). Typical types of best management practices will depend on site-specific conditions.

1 Biological Resources

1.1 Migratory Bird Avoidance

a. The Corps will follow the procedures and conservation measures described in the July 2006 *Memorandum of Understanding (MOU) between the U.S. Department of Defense and the U.S. Fish and Wildlife Service to Promote the Conservation of Migratory Birds*, and any subsequent updates or amendments to these documents or new Corps policy/guidance when implementing O&M activities for the JHFPP.

b. Subject to MBTA policy/guidance, the Corps will avoid the nesting season when performing O&M activities with the potential to harm active nests or nestlings. These O&M activities are levee rehabilitation, culvert cleaning/repair, both mechanical and chemical vegetation removal, levee surface maintenance (grading and placement of crushed rock, possibly snow removal), and new construction, such as additional turnarounds, new stockpile areas, or bank barbs.

1) The migratory bird nesting season for the JHFPP is currently identified as April 1 through August 1. This is based on results of the bird nesting surveys performed by the Corps in 2014-2016 and in coordination with the U.S. Fish and Wildlife Service.

2) If the Corps performs two additional years of bird nest surveys after 2017 and these surveys confirm that migratory birds in the JHFPP area are fledging by July 15, and not re-nesting after this date, the bird nesting season for O&M avoidance on the JHFPP will be adjusted to April 1 through July 15.

3) If the Corps must initiate any listed O&M activities within the migratory bird nesting season (either as described above), the Corps will ensure a bird nest survey conducted by a qualified biologist is completed one to five days before the activity is scheduled to begin

4) The Corps will not need to perform bird nesting surveys if the listed O&M activities are performed outside of the bird nesting season dates.

c. Subject to MBTA policy/guidance, if the Corps identifies active nest sites during a nest survey, those sites will be flagged and an appropriate buffer zone established around each site. No construction/activities that would physically damage/destroy an active nest will take place within the buffer zone until the birds have fledged. If additional nests are identified by work crews, a biologist will be notified to inspect the site and establish a buffer zone if the nest is active.

d. Buffer zone distances for migratory birds, except for raptors, will be 15 feet from known nest sites. The buffer zone distance for raptors nests (except bald eagles – see 1.2 below) will be 150 feet.

e. Bird surveys will be performed by a qualified biologist with ornithological experience. The Corps' Natural Resources Section and the Environmental Compliance Section will coordinate prior to allowing a non-Corps biologist to perform the surveys in order to confirm biologist qualifications and survey requirements.

f. Pending guidance from HQ-USACE on the requirements of the Migratory Bird Treaty Act, the size of (or need for) the buffers described above for nesting migratory birds could be reduced.

1.2 Bald Eagle Avoidance

a. The Corps will follow the recommendations in the U.S. Fish and Wildlife Service National Bald Eagle Management Guidelines to avoid disturbing bald eagles.

b. When performing O&M activities within the bald eagle nesting season of February 1 – August 15, the Corps will refrain from working within applicable buffer zones of active nests until the young have fledged. These zones are 330 feet from the nest when the nest is not visible from the work area and 660 feet from the nest when the nest is visible from the work area. The Corps may work within the buffer zones prior to August 15th if a qualified biologist has determined the birds are no longer using the nest.

1.3 Endangered Species Act

a. If the Corps identifies an active yellow-billed cuckoo nest when performing migratory bird nesting surveys or performing O&M activities, the Corps will establish buffer zones around the nest in accordance with the guidelines from the U.S. Fish and Wildlife Service and not perform work within the buffer zone until the birds have fledged.

b. If a wolverine, Canada lynx, or grizzly bear enters the work area, the Corps will maintain a 100 yard buffer between O&M activities and the animal. While performing O&M activities, the Corps will also maintain a clean working environment, free of any litter, food, or other attractants.

1.4 Wildlife

a. If the Corps or its contractor sees or has an encounter with any large carnivores, including black bear, grizzly bear, wolverine, or Canada lynx within Grand Teton National Park, the Corps will report the encounter to Park biologists.

1.5 Vegetation Management

- a. Vegetation will be left intact, except where its removal is necessary.
- b. All pesticide applicators will be state commercial licensed.
- c. All pesticide applicators will comply with applicable federal, state, and herbicide manufacturer's directions and requirements for handling herbicides and insecticides, including storage, transportation, mixing location, application, container disposal, and cleanup of spills, or according to this document, whichever is the more stringent standard.
- d. All application equipment (e.g., back packs, trailer mounted sprayers, etc.) will be properly calibrated according to the chemical manufacturer's suggested application rates printed on the chemical label prior to use. Equipment settings will be properly maintained for the duration of the application period.
- e. Application equipment will be maintained to ensure proper application rates, to minimize leakage potential, reduce the potential for drift, and ensure applicator safety. Equipment will be maintained, visually inspected prior to each application. This includes, but is not limited to hoses, nozzles, backpacks, and booms.
- f. Pesticide applications are limited to air temperatures of 90 degrees Fahrenheit or less, unless the label conditions are more restrictive.
- g. Pesticide applications are prohibited 24 hours prior to a predicted precipitation event sufficient to cause runoff.
- h. Pesticide applicators will not spray if snow or ice covers the target foliage.
- i. All pesticide applicators will carry a Spill Prevention and Control Plan. The Plan will provide detailed descriptions on how to prevent a spill or ensure effective and timely containment of any chemical spill. The Spill Prevention and Control Plan will include spill control, containment, cleanup, and reporting procedures.
- j. A spill kit will be available to all persons making applications within 150 feet of the site of the application.
- k. Each applicator vehicle carrying herbicides will be equipped with a spill cleanup kit. The cleanup kit will be capable of containing and holding at least 125% of the total mixture and concentrate that are present on the work site. Applicator vehicles

equipped with secondary containment must have a spill cleanup kit available within a 5 minute response time.

I. The pesticide applicator will report all details of herbicide spills, exposure incidents or accidents and/or worker health complaints, if any occur, to the Corps as soon as practicable.

1.6 Invasive/Noxious Weed Management

a. The Corps will require documentation that fill material is certified as weed-seed-free.

1) The contractor will be required to supply weed free fill that is compliant with standards by the Wyoming Weed and Pest Council for weed free gravel at their website, <http://www.wyoweed.org/weeds/weed-free-forage>, or the contractor will provide fill that is compliant with the North American Invasive Species Management Association (NAISMA) program for Weed Free Gravel Minimum Pit Standards.

2) The contractor will provide documentation from the vendor of cooperation and compliance with either of the above programs for the facility from which they are receiving the clean weed free fill. Documentation must include inspection certificate(s) that indicate the standards of one of the above programs has been met.

b. Fill material will consist of naturally occurring sediments. The material will be free of wood debris, roots, clay, organic matter, refuse, or other deleterious materials.

c. Rock will be free from attached soil and debris.

d. The contractor will thoroughly wash all excavation equipment prior to mobilization to the work site to ensure no soils or weed seeds are present on the equipment.

e. The contractor will perform regular inspections of trucks prior to entering the Grand Teton National Park to locate and remove any soil adhering to the truck body, stuck between dual tires, etc.

2 Water Resources (Clean Water Act and EO 11990)

2.1 Clean Water Act Section 404

a. When performing levee rehabilitation the Corps will restore the levees to their original design criteria and footprint, or incorporating authorized resiliency, using similar materials and will not engage in unauthorized modifications or improvements to the levees.

b. If the Corps plans to modify the levee design, footprint, or materials when performing levee rehabilitation, and the modification involves the discharge of dredged or fill materials in waters of the United States (WOTUS), the Corps will comply with Section 404 and any subsequently required Section 401 water quality certification.

c. If the Corps does not backfill the holes left by woody vegetation removal when performing this O&M activity in wetlands within the 15 foot clear zones of the levees, Section 404 of the CWA is not triggered as the action would not result in fill in WOTUS. Backfilling would include pushing in the soil lifted by the rootball or backfilling with additional soil or other fill material. However, removing vegetation and leaving a hole in wetlands may require measures to avoid or minimize adverse effects to such wetlands, under EO 11990 (see Section 4, below).

d. If the Corps plans to backfill the holes left by woody vegetation removal in wetlands that constitute WOTUS ("WOTUS wetlands") within the 15 foot clear zones, the Corps will comply with Section 404 of the CWA and any subsequently required Section 401 water quality certification.

e. When cleaning the culverts in the levees, the Corps will capture all sediment and not discharge any sediment into rivers, streams, or wetlands.

f. If the Corps continues to use jetting or other water-based methods to clean the culverts, the Corps will use cofferdams at both ends of the culvert to contain any debris or turbidity and will comply with Section 404 of the CWA and any subsequently required Section 401 water quality certification.

g. When repairing or replacing culverts, the Corps will not deviate from the footprint or diameter of the original culvert unless necessary.

h. If the Corps must repair or replace a culvert using a method or design that will change the footprint or diameter of the culvert (e.g., replacing three smaller diameter culverts with two larger diameter culverts), the Corps will comply with Section 404 of the CWAQ and any subsequently required Section 401 water quality certification.

2.2 Clean Water Act Section 402

a. The Corps will comply with the requirements of the Wyoming General Permit for Minor Pesticide Discharges when spraying herbicide on the levees and stockpile areas. The requirements are found at: <http://deq.wyoming.gov/wqd/pesticides-permitting/resources/general-permits/>.

b. For new construction that would disturb more than one acre of ground, and has the potential for storm water runoff to enter surface water, the Corps will comply with the applicable Wyoming construction permit, information about which can be found at <http://deq.wyoming.gov/wqd/storm-water-permitting/resources/construction-general-permits/>.

1) If the disturbed area will be five or more acres, the Corps will comply with the Wyoming Large Construction General Permit (LCGP).

2) If the disturbed area will be greater than one acre but less than five acres, the Corps will comply with the Wyoming Small Construction General Permit. .

c. The Corps will prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) as required for both Wyoming construction permits.

2.3 Clean Water Act Section 401

a. The Corps will obtain Section 401 water quality certification from Wyoming Department of Environmental Quality for all O&M activities subject to the provisions of Clean Water Act Sections 404 or 402, as required.

2.4 Executive Order 11990, Protection of Wetlands

a. The Corps will avoid or minimize effects to wetlands (both WOTUS and non-WOTUS wetlands), as required under EO 11990.

2.5 Summary of Clean Water Act and EO 11990 Compliance

a. Table 1 summarizes the Clean Water Act Sections 401, 402, and 404 compliance needed for O&M of the JHFPP.

Table 1 Summary of Clean Water Act compliance needed for JHFPP O&M activities

O&M Activity	Section 402	Section 404	Section 401	Comments
Spring snow removal	NO	NO	NO	No aspect of this activity is subject to Clean Water Act.
Spring levee patrols	NO	NO	NO	No aspect of this activity is subject to Clean Water Act
Emergency actions (flood-fighting)	NO	NO	NO	Emergency reconstruction is exempt from Section 404 per Section 404(f)(1)(B). EO 11990 may apply.
Rock & fill material stockpiling	NO for routine operation MAYBE for new stockpile site development	NO for routine operation MAYBE for new stockpile site development	NO for routine operation MAYBE for new stockpile site development	Development of additional stockpile areas would need site-specific compliance if surface water or wetlands would be affected. EO 11990 may apply.
Levee rehabilitation	NO if less than 1 acre of ground	NO if levee is not modified	NO if levee is not modified	Maintenance is exempt from Section 404 per Section 404(f)(1)(B) if no change in

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	disturbance (includes pulling out rooted woody vegetation or digging out roots) YES if more than 1 acre of ground disturbance	YES if levee is modified [Nationwide Permit (NWP) 3 Maintenance]	YES if levee is modified and work is in Class 1 waters (Snake River above Wilson Bridge) NO – if levee is modified and work is not in Class 1 waters	design, footprint, or materials. Request Turbidity Waiver from WDEQ if Section 401 water quality certification is needed. EO 11990 may apply.
Debris clearance	NO	NO	NO	Removal of material is not subject to Clean Water Act. EO 11990 may apply.
Culvert cleaning, repair, rehabilitation, replacement	NO for routine maintenance MAYBE for repair, replacement that extends past the levee footprint or changes culvert configurations	YES – NWP 3 Maintenance	YES – if working in Class 1 waters (Snake River above Wilson Bridge) NO – if not working in Class 1 waters	Request Turbidity Waiver from WDEQ if Section 401 water quality certification is needed. Additional site-specific compliance needed if culvert repair/replacement extends beyond the original footprint of the levee or changes the configuration of the culvert. EO 11990 may apply.
Vegetation removal – herbicide spraying	YES	NO	NO	Comply with WYPDES General Permit for Minor Pesticide Discharges. EO 11990 may apply.
Vegetation removal – cutting and removal	NO for cutting vegetation MAYBE for pulling out rooted woody vegetation or digging out roots	NO for work on levee prism NO for work below ordinary high water or in wetlands if not backfilling rootball holes YES for work below ordinary high water or in wetlands if backfilling rootball holes (NWP 3	NO if not backfilling rootball holes YES if backfilling rootball holes in Class 1 waters NO if backfilling rootball holes and not working in Class 1 waters	Backfilling rootball holes may meet the requirement of NWP 18 Minor Discharges. WDEQ has issued 401 certification for this NWP for work outside of Class 1 waters. Request Turbidity Waiver from WDEQ. EO 11990 may apply.

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		Maintenance and/or NWP 18 Minor discharges)		
Access road maintenance	NO for routine maintenance MAYBE for new turnaround construction	NO for routine maintenance MAYBE for new turnaround construction	NO for routine maintenance MAYBE for new turnaround construction	Development of additional turnarounds would need site-specific compliance if surface water or wetlands would be affected. EO 11990 may apply.

2.6 Water Quality

a. All excess stockpiled or excavated material will be disposed of at an upland site, not in a stream, river, or a wetland (when possible).

b. All equipment will be inspected for oil, gas, diesel, anti-freeze, hydraulic fluid, and other petroleum leaks. All leaks will be properly repaired and equipment cleaned prior to being brought on-site. Leaks that occur after the equipment is on-site will be repaired within one day or removed from the project area. The equipment will not be allowed to continue operating upon discovery of a leak.

c. Petroleum products and solvents will be stored in compliance with all State and Federal requirements, to include any applicable secondary containment and record keeping requirements.

d. Fuel and lubricants will be stored outside the levees in project staging areas.

e. Construction equipment will not be operated below the existing water surface level. Only the bucket of the excavator or similar equipment will operate below the water surface if necessary.

f. A spill prevention and control plan would be developed and discussed to equipment operating personnel prior to instream work. A copy of the plan would be kept in the project environmental records.

g. Where possible refueling of equipment will take place at least 100 feet from open water.

3 Cultural Resources

3.1 National Historic Preservation Act (NHPA)

a. The Corps will comply with the October 11, 1985 Programmatic Agreement with the Wyoming State Historic Preservation Office (SHPO), including submitting a yearly report to the SHPO of all JHFPP O&M work.

b. All O&M activities will take place on or within those portions of the levee system that already exist (within the easement boundaries) and obtain borrow materials from existing borrow areas.

c. If cultural resources are encountered while performing O&M activities, all work in the activity area will stop until the site can be evaluated by a qualified archeologist and a course of action identified. Contact the Walla Walla District archeologist (Chief, Cultural Resources Section, Planning Branch) to identify the course of action.

d. If new construction or a new borrow area is proposed, the Corps will review the proposal to determine if normal NHPA Section 106 procedures and consultation is needed.

3.2 Native American Graves Protection and Repatriation Act

a. In the event O&M activities inadvertently result in the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony, all work within a 150 foot (50 meter) radius will cease immediately, the remains and materials protected in place, and the Walla Walla District archeologist contacted. The District Guidance on Inadvertent Discovery of Human Remains, Funerary Object, Sacred Objects, and Objects of Cultural Patrimony will be followed.