COASTAL ZONE MANAGEMENT ACT
CONSISTENCY DETERMINATION

Coastal Zone Management Act Consistency Determination
Cockreham Island Levee Rehabilitation Project
March 2013

The rehabilitation actions are activities undertaken by a Federal agency; the following constitutes a federal consistency determination with the enforceable provisions of the Washington Coastal Zone Management Program.

1. INTRODUCTION

The proposed Federal action applicable to this consistency determination is the rehabilitation activities along the Skagit River, as described below. This determination of consistency with the Washington Coastal Zone Management Act is based on review of applicable sections of the State of Washington Shoreline Management Program and policies and standards of the Skagit County Shoreline Master Plan.

Major flooding occurred on the Skagit River in November 2006 with a 15-year flood event occurring at the Mount Vernon gage peaking at 2000 hours on 7 November 2006. The intense rains that caused this flood were the result of a high velocity jet stream from the southwest that brought warm pockets of moisture to the Northwest. Upper Baker Dam, Darrington, and Marblemount experienced peak 24-hour rain totals of 4.8, 3.6, and 5.0 inches, respectively. As a result, the river stayed above flood stage for 66 hours. During this period, the Skagit River at the Concrete gage (USGS 12194000) crested at 39.74 feet (145,000 cubic feet per second) on 6 November 2006 at 2000 hours. This gage is located 15.1 miles upstream of the project site at river mile (RM) 54.1. Skagit County requested assistance under the U.S. Army Corps of Engineers, Seattle District (Corps) PL 84-99 Program, in implementing repair projects at these locations. The Corps determined that the levee was in need of repair in order to provide the necessary level of flood protection for the neighboring residences, farmland, and associated public infrastructure.

Damages that occurred to the Cockreham Island levee include the loss of scour protection and slumping of the levee crown. A 300 LF segment was repaired during summer 2012 for which a May 2012 Consistency Determination was submitted and concurrence letter (dated 28 June 2012) was received. During the clearing and grubbing for the repair construction, additional damage was identified immediately adjacent to the repair area to the upstream (50 LF) and downstream (150 LF). The proposed 2013 repair segments consist of replacing erosion protection along a total length of 200 LF at approximately RM 38.7, upstream of a forested bench. The design drawings are attached as Appendix A and project photos are attached as Appendix B. Vehicles will access the site along the dirt road that connects the levee to Cockerham Island Road. No new access road will be constructed. Vehicle and material staging areas will be on top of the levee and at turnout points along the access road. No vegetation will need to be cleared for staging. Work will include removal of a depositional sediment bench on the riverward slope, removal of shrubby vegetation of native and non-native invasive species, grading the riverward slope to reestablish the 2H:1V slope, placement of Class IV riprap in the levee toe and riverward slope, installing three willow lifts, regrading the levee crown and placing crushed gravel on the crown along the repair area to restore a reliable driving surface for inspections and maintenance. Materials for the repair would come from local quarries. All disturbed areas would be hydro seeded with native grasses upon completion. Best management practices that would be employed during construction are included in Appendix C.

2. STATE OF WASHINGTON SHORELINE MANAGEMENT PROGRAM

The Coastal Zone Management Act of 1972, as amended, requires Federal agencies to carry out their activities in a manner that is consistent to the maximum extent practicable with the enforceable policies of the approved state Coastal Zone Management (CZM) Programs. The Shoreline Management Act of 1972 (RCW 90.58) is the core of authority of Washington's CZM Program. Primary responsibility for the implementation of the SMA is assigned to local governments. Skagit County, in which the proposed levee rehabilitation projects are located, fulfilled this requirement with the Shoreline Master Program.

3. SKAGIT COUNTY SHORELINE MASTER PROGRAM

The Skagit County Shoreline Master Program Shoreline Designation Map was used to determine project consistency. The proposed repair footprint is located near Hamilton, Skagit County, Washington. The designation for the Cockreham Island Levee in Skagit County's Shoreline Management Program is Rural and the zoning is Natural Resource Lands–Agricultural (Ag-NRL).

Applicable portions of the Skagit County SMP are presented below with the Corps consistency indicated in ***bold italics.***

7.16-1.A.(1) Streamway modification and marine diking programs should be coordinated and monitored to provide for more comprehensive planning of Skagit County's shorelines.
Repair of existing levees does not constitute a new streamway modification; the existing levee that is proposed for repair within the Corps' PL 84-99 program is already under the County's consideration for shoreline planning.

7.16-1.A.(2) Recognizing that streamway modifications may cause interference with normal river geohydraulic processes that may lead to erosion of other up and down river shorelines, then such modifications and stabilization measures should incorporate basic geohydraulic principles and be located, designed, coordinated, and maintained for homogeneous river reaches. Such modifications and measures should be sited and designed by qualified, professional personnel.
The stabilization measures taken to repair the existing levee are located at the sites of damage, and all repair work is within the original footprint of the levee. Designs incorporate basic geohydraulic principles and contribute to homogeneous river reaches. Repair project designers are certified Professional Engineers.

7.16-1.B.(1) All bank stabilization and flood protection measures should be constructed to comply with the design and location standards and guidelines of applicable agencies.
The levee repair work completed by the Corps complies with the design and location standards and guidelines of this agency so as to remain eligible for the PL 84-99 program.

7.16-1.B.(2) Riprapping and other bank stabilization measures should be located, designed, and constructed primarily to prevent damage to agricultural land, public roads and bridges, existing homes and residential areas, or other structures or natural features whose preservation is in the public interest. Such measures should not restrict the flow of the river or stream.
Repair of the existing levee involves placement of riprap, all of which is located, designed, and constructed for the purpose of preventing damage to public infrastructure and existing homes and residential areas.

7.16-1.B.(3) Recognizing the value and interdependency of water bodies and associated wetlands as biologically productive habitats and recognizing the intent of the Shoreline Management Act (RCW

90.58.030(2) and WAC 173-22-030), shoreline stabilization and flood protection projects should be located landward of natural wetlands, marshes, and swamps of associated fresh and marine water bodies.
No new locations have been selected for this flood protection project. The subject work will only repair the existing levee.

7.16-1.B(4) Braided and meandering channels and associated shoreline areas should not be the locations for intensive land use developments such as those of an industrical, commercial, or residential nature.
No new locations have been selected for this flood protection project. The subject work will only repair the existing levee.

7.16-1.B.(5) Substantial stream channel direction modification, realignment, and straightening should be discouraged as a means of shoreline and flood protection and for protection of road rights-of-way, navigational routes, and other construction or developmental projects.
No new substantial stream channel modification, realignment, or straightening has been done for this flood protection project. The subject work will only repair the existing levee.

7.16-1.C.(1) Shoreline stabilization and revetment material should consist of substantial rock and should meet the standards and guidelines of the Soil Conservation Service.
The shoreline stabilization material to be used for the 2013 levee repair is quarry spalls and Class IV riprap from an approved quarry located in the same watershed as the project site.

7.16-1.C.(2) Junk and solid waste should not be permitted for shoreline stabilization and revetment material. Concrete and concrete waste should not be used as stabilization and revetment material.
The shoreline stabilization material to be used for the 2013 levee repair is quarry spalls and Class IV riprap from an approved quarry located in the same watershed as the project site.

7.16-1.C.(3) Shoreline stabilization programs should utilize natural, perennial vegetation either as stabilization material alone or as complementary to other materials.
Plants used within the levee repair projects consisted of two species of willows native to Western Washington, Salix sitchensis and Salix lucida.

7.16-1.D. Natural features such as snags, stumps, or uprooted trees, which support fish and other aquatic systems, and do not intrude on the navigational channel or reduce flow, and do not threaten agricultural land and existing structures and facilities should be allowed to remain.
Civil design and hydraulic engineers have stated that natural features such as snags, stumps, or uprooted trees that support fish and other aquatic systems are not appropriate for Corps levees certified in the PL 84-99 program and are therefore not allowed to remain.

7.16-1.F. Shoreline stabilization programs should be encouraged to develop alternative methods of streamway modifications utilizing natural systems of stabilization and geohydraulic principles.
The levee repair work completed by the Corps complies with the design and location standards and guidelines of this agency so as to remain eligible for the PL 84-99 program. Three willow lifts have been incorporated into the project design to add overhanging cover and natural features to the repair and additional off-site mitigation would be constructed.

7.16-1.G.(1) Recognizing that shorelines of recreation, wildlife, and aesthetic value are limited and irreplaceable resources, then shoreline stabilization and flood protection projects should consider their potential effects and impacts upon such resources.
The Corps is preparing an Environmental Assessment per NEPA requirements and has initiated informal consultation with the National Marine Fisheries Service and U.S. Fish and Wildlife Service concerning impacts to ESA-listed species. Willow lifts have been incorporated into the design to help offset any impacts to the riverine environment as a result of the levee repair and additional off-site mitigation would be constructed.

7.16-1.G.(2) Recognizing that the related shoreline stabilization and flood protection activities of filling, grading, lagooning, and dredging may have a substantial impact upon the existing aquatic and biological systems, navigation, and river hydraulics by subsequent erosion and sedimentation, then these activities and their possible impacts should be recognized.
The Corps recognizes that the filling and grading activities of levee repairs may have negative impacts on the aquatic and biological systems. Willow lifts have been incorporated into the design to help offset any impacts to the riverine environment as a result of the levee repair and additional off-site mitigation would be constructed.

7.16-2.A.(3) Rural: Shoreline stabilization and flood protection measures are permitted subject to the General Regulations.
The project area is classified as Rural. Levee rehabilitation in this environment is consistent with the General Regulations to the maximum extent practicable while still being designed to comply with the Corps' PL 84-99 program requirements.

7.16-2.B.(1) In order to assure that shoreline stabilization and flood protection measures are consistent with this program as required by RCW 90.58.140 (1), no work may commence without the responsible person or agency having obtained either a shoreline permit or statement of exemption from this department.
Following the rules for federal agencies, the Corps has prepared this Consistency Determination and believes concurrence from the Washington State Department of Ecology fulfills this requirement.

7.16-2.B.(2) Shoreline stabilization and flood protection measures shall be allowed only when adequate evidence is presented that one of the following conditions exist: a. significant erosion of agricultural lands, b. high water or erosion threatens public works and properties, including roads, bridges, railroads, and utility systems, c. high water or significant erosion damages or threatens existing homes and residential areas, d. high water or significant erosion damages or threatens to damage existing commercial and industrial uses and developments.
All of these conditions existed at the time the Corps initiated levee rehabilitation work following the November 2006 flood event. The purpose of the levee repairs is to remove the threats posed in the above-named conditions.

7.16-2.B.(3) The County may require professional design of shoreline stabilization and flood protection works where such projects will cause interference with normal river geohydraulic processes, leading to erosion of other up and down river shoreline properties or adverse effects to shoreline resources and uses.
Corps project delivery teams include certified Professional Engineers specializing in civil design and hydraulic engineering.

7.16-2.B.(5)a. Existing streambank vegetation shall be preserved to the maximum extent feasible during shoreline stabilization and flood protection work.
Minor vegetation removal would be required to complete the proposed repair. Three lifts of willows will be placed along the entire repair length.

7.16-2.B.(5)b. New or expanded dike, revetment, or riprap systems, cut and fill slopes, and backfilled areas shall be progressively planted with compatible, self-sustaining, and soil stabilizing vegetation.
Plants used within the levee repair projects consisted of two species of willows native to Western Washington, Salix sitchensis and Salix lucida that will be self-sustaining vegetation.

7.16-2.B.(5)c. All works shall allow for the passage of surface and ground waters.
The levee repair does not change the current functioning of surface and ground water passage.

7.16-2.B.(5)d. All works shall be designed and constructed to meet the requirements and standards of the County Engineer, State Departments of Fisheries and/or Game, Corps of Engineers where applicable, and Soil Conservation Service.
Corps project delivery teams include certified Professional Engineers specializing in civil design and hydraulic engineering. The levee rehabilitation designs comply with the Corps' PL 84-99 program requirements.

7.16-2.B.(6)a. Materials for shoreline stabilization and flood protection works shall not consist of solid waste, junk or abandoned automobiles, asphalt or macadam, or any building demolition debris except that which is used for emergency purposes.
Only quarry spalls, approved soils for willow plantings, and Class IV riprap from a local, approved quarry are planned for use in the levee rehabilitation work.

7.16-2.B.(6)b. Techniques utilizing totally or in part vegetative bank stabilization procedures shall be preferred over structural means such as concrete revetments or extensive riprap.
Corps civil and hydraulic engineers have stated that riprap is the only means by which the levee can be returned to the pre-flood level of flood protection and remain eligible for the PL 84-99 program.

4. Federal Water Pollution Control Act

The Corps concludes that the project is not subject to regulation under Sections 401 and 404 of the Clean Water Act. The exemption from the requirement to evaluate the effects of discharges of fill material into waters of the United States under 33 USC 1344(f)(1)(B) applies, because all riverward work at the Cockreham levee repair site would be conducted landward of the pre-damage levee toe footprint and the character, scope, and size of the resulting structure has not changed as compared with the original fill design. Therefore, the repair work at the Cockreham levee site does not require a 404(b)(1) evaluation. .

5. Clean Air Act

The proposed project has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. The project constitutes a routine facility repair activity generating an increase in emissions that is clearly de minimis under 40 CFR 93.153(c)(2)(iv). For this reason, a conformity determination is not required for this project.

6. State Environmental Policy Act
The proposed action is a Federal action subject to NEPA and is exempt from SEPA.

7. Energy Facility Site Evaluation Council Law
The proposed project does not involve the energy facilities in the state of Washington and does not apply to the proposed action.

8. Ocean Resources Management Act
The proposed action is located in a river which drains into Puget Sound, a waterbody connected to the Pacific Ocean through the Strait of Juan de Fuca. The enforceable policies of Chapter 43.143 RCW apply only to coastal waters of the Pacific Ocean, and do not apply to the proposed action.

9. Conclusion. Based on the above evaluation, the Corps has determined that the proposed rehabilitation activities comply with the policies, general conditions, and activities as specified in the Skagit County Shoreline Master Program adopted in 1976. The proposed action is thus considered to be consistent to the maximum extent practicable with the State of Washington Shoreline Management Program and policies and standards of the Skagit County Shoreline Master Program.

APPENDIX A
PROJECT DESIGNS

PLAN VIEW

US Army Corps of Engineers
Seattle District

LEAD ENGINEER DISTRICT SEATTLE
CORPS OF ENGINEERS
SEATTLE, WASHINGTON

Prepared by: CENWS-EN-GB-SS

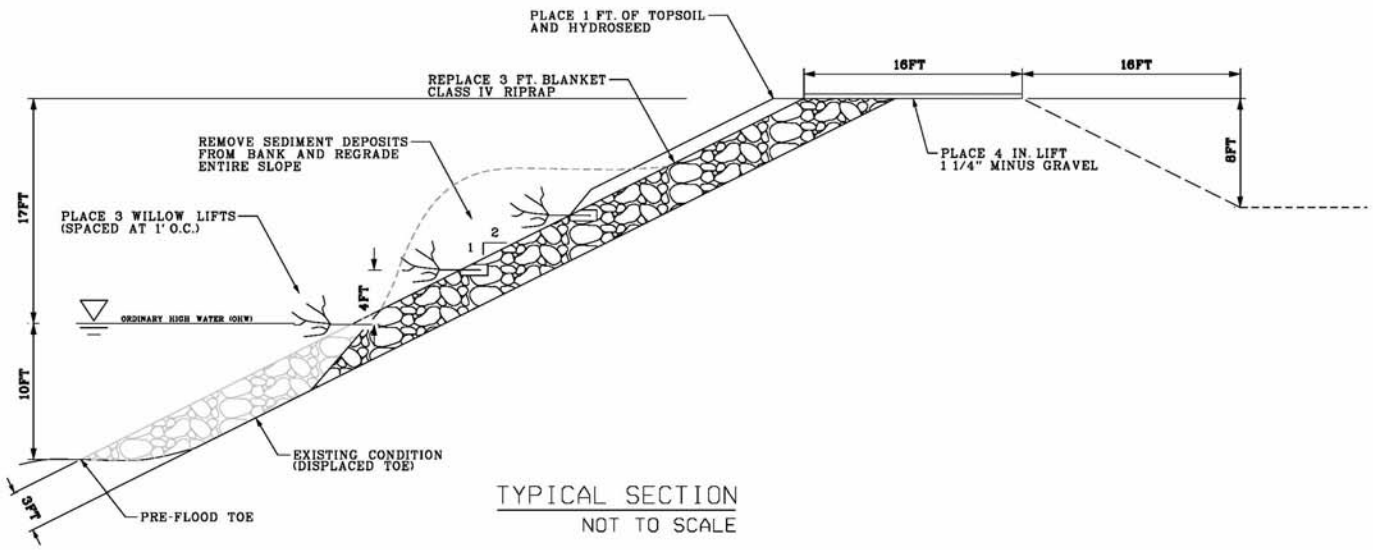
Designed by: VILLANUEVA
Drawn by: VILLANUEVA
Checked by: FIGUERO

Date: 08 JAN 2013
File: E-6-7-22
Dim.:

SKAGIT COUNTY LEVEE REHAB
COCKREHAM ISLAND
SITE PLAN
SKAGIT COUNTY WASHINGTON

Plate number:
C-002
Sheet 2 of 3

DATE AND TIME PLOTTED: 08MAR2006 @11:06 DESIGN FILE:



TYPICAL SECTION
NOT TO SCALE

NOTES:

1. REMOVE SEDIMENT DEPOSITS AND CLEAR BRUSH FROM RIVERWARD SLOPE. SEDIMENT CAN BE STOCKPILED ALONG LANDWARD TOE OF LEVEE AND USED AS TOPSOIL ON FINISHED ROCK BLANKET.
2. REMOVE AND STOCKPILE REMAINING RIPRAP ALONG LANDWARD LEVEE TOE. STOCKPILED RIPRAP IN GOOD CONDITION CAN BE UTILIZED ON RIVERWARD SLOPE AND INCLUDED IN 3 FT BLANKET.
3. REGRADE RIVERWARD SLOPE TO 2H:1V.
4. PLACE THREE WILLOW LIFTS ALONG 300 LF OF REPAIR. WILLOWS TO HAVE 3' STEMS WITH 2' EMBEDDED INTO SOIL. 1' EXPOSED. 4" LAYER OF TOPSOIL ABOVE AND BELOW STEM. PLACE FIRST LIFT AT LOWEST POSSIBLE ELEVATION BUT NOT ABOVE OHWL.
5. REPLACE 3 FT. BLANKET OF CLASS IV RIPRAP.
6. PLACE 1 FT. TOPSOIL AND HYDROSEED FROM TOP OF HIGHEST WILLOW PLANTING TO TOP OF SLOPE.
7. REGRADE LEVEE DRIVING SURFACE AND PLACE 4 IN. LIFT 1 1/4" MINUS GRAVEL.
8. TOTAL LENGTH OF REPAIR IS 200 LF.

US Army Corps of Engineers
Seattle District

U.S. ARMY ENGINEER DISTRICT, SEATTLE
CORPS OF ENGINEERS
SEATTLE, WASHINGTON

Designed by: VILLAVREAL
Drawn by: VILLAVREAL
Checked by: FISCHER
Date: 09 JAN 2013
File #: E-6-7-22
Rev.

Prepared by: CENWS-EN-GB-SS

SKAGIT COUNTY LEVEE REHAB
COCKREHAM ISLAND
TYPICAL SECTION
SKAGIT COUNTY WASHINGTON

Plate number: C-003
Sheet 3 of 3

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APPENDIX B
PROJECT PHOTOS

Figure 1. Downstream 150 LF damage site.

Figure 2. Close-up view of overhanging rock at downstream 150 LF damage site.

Figure 3. Upstream 50 LF damage site.

APPENDIX C
BEST MANAGEMENT PRACTICES

Several measures would be employed during construction of the Cockreham Island Levee Rehabilitation Project, to minimize adverse project effects on protected species and their habitat. The measures are as follows:

- Construction will occur when Chinook, steelhead and bull trout are least likely to be present in the action area. The work window for this reach of the Skagit River is June 15 to August 31.
- Work area is restricted to areas of existing and functional flood control structures.
- Rock will be individually placed, not dumped. No end-dumping of any quantities of rocks will occur.
- Vegetative removal is limited to the repair site area only.
- No net loss of wetland or sensitive aquatic sites.
- A triple willow lift will be installed with the lowest lift at OHW.
- The riverward bank above the willow lifts will be covered in dirt and hydroseeded following construction.

The Corps will incorporate construction best management practices (BMPs) as suggested by the Washington State Department of Ecology during previous rehabilitations and flood fights. Table 1 lists the BMPs that are appropriate for levee repair construction.

Table 1. Best Management Practices implemented during typical levee repairs.

1. Equipment used near the water will be cleaned prior to construction.
2. Work will be conducted during a period of low flow.
3. Biodegradable hydraulic fluids will be used in machinery where appropriate.
4. Refueling will occur on the backside of the levee.
5. Construction equipment shall be regularly checked for drips or leaks.
6. At least one fuel spill kit with absorbent pads will be onsite at all times.
7. Drive trains of equipment will not operate in the water.
8. At least one biologist will be onsite or available during construction.
9. Periodic water quality monitoring will be conducted during construction.

In addition, a Fueling and Spill Recovery Plan will be developed prior to construction that will include specific BMPs to prevent any spills and to prepare and react quickly should an incident occur. A Sediment Monitoring Plan will also be developed to define the turbidity monitoring that will occur during construction. Monitoring will be conducted to ensure that State Water Quality Standards are met. Should construction efforts exceed the maximum state turbidity standards, or a visible turbidity plume is observed, work will be halted and construction methods adjusted to ensure that further exceedances would not occur.