

**LOWER DUNGENESS RIVER  
SECTION 544  
ECOSYSTEM RESTORATION**

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**APPENDIX I  
ENVIRONMENTAL COMPLIANCE  
DOCUMENTATION**

**DRAFT Detailed Project Report and  
Environmental Assessment**



**US Army Corps  
of Engineers®**  
Seattle District

**DRAFT Clean Water Act Section 404 Analysis**

**Lower Dungeness River – Ecosystem Restoration Project**

**Sequim, Clallam County, Washington**

**Prepared by:**

**U.S. Army Corps of Engineers  
Seattle District  
Environmental and Cultural Resources Branch**

**November 2014**



**US Army Corps  
of Engineers ®**  
Seattle District

## **1.0 INTRODUCTION**

The purpose of this document is to record the U.S. Army Corps of Engineers (Corps) compliance evaluation of the Dungeness Ecosystem Restoration Project on the Dungeness River, Clallam County, Washington, pursuant to the Clean Water Act (CWA), and the General Regulatory Policies of the Corps. Specifically, Section 404 of the CWA requires an evaluation of impacts for work involving discharge of fill material into the waters of the U.S., and evaluation guidance can be found in the CWA 404(b)(1) Guidelines [40 CFR §230.12(a)]. The General Regulatory Policies of the Corps of Engineers [33 CFR §320.4(a)] provide measures for evaluating permit applications for activities undertaken in navigable waters.

Attachment A provides the specific Corps analysis of compliance with the CWA Section 404(b)(1) and the General Regulatory Policy requirements.

## **1.0 PROJECT BACKGROUND**

The proposed project is a separable element of the specifically authorized project, Puget Sound and Adjacent Waters Restoration, WA, (PSAW) authorized by Section 544 of the Water Resources Development Act of 2000 (Public Law 106-541, December 11, 2000), which authorizes implementation of critical restoration projects in Puget Sound and its contributing watersheds. The Federal interest in this separable element of the PSAW program stems from its intent to restore habitat for Endangered Species Act (ESA)-listed species, habitat which has been impacted by a Corps levee.

Levee construction adjacent to the main channel has impacted the riverine processes that create and sustain habitat, leading to coarser sediments on the bed, elevated gravel bars, less woody debris, and fewer stable pools. The levees also cut off side channels and result in higher velocities and depths during floods. With fewer channels, there is also less riparian area; benefits of riparian areas include providing habitat for mammals, migratory songbirds and raptors, generation of insects of forage value to fish, and shading the river to maintain the cooler temperatures to which native fish have adapted.

In the years since levee construction, the channel in the project area has aggraded with sediment build-up in the channel; as a result the levee provides a lower level of protection than it was designed to provide. Designed to provide a 200-year level of protection, it is estimated to provide in the range of a 30 to 80-year level of protection given the current elevation of the bed. As this project is being conducted under an ecosystem restoration authority, plans will not be formulated primarily to address flood risk, but opportunities to incidentally achieve flood risk improvement will be considered.

## **2.0 PROJECT NEED**

The need for the proposed Federal action arises from the significant degradation of natural processes that sustain the ecological functions of the lower Dungeness River. Specifically, disconnection of the river from its historic floodplain has degraded in-channel and off-channel habitat for Federally-listed fish species, as well as the associated riparian zone that historically enhanced the riverine habitat while also providing habitat for mammals, raptors, songbirds and other wildlife. Reconnecting parts of the river to its historic floodplain would have the secondary benefit of reducing flood risks by lowering flood elevations and velocities through expansion of the active 100-year floodplain.

## **3.0 PROJECT PURPOSE**

Puget Sound is an estuary of national significance, as identified by the Council for Environmental Quality. Puget Sound encompasses a highly interactive system that depends on a continuing cycle of clean water and nutrients to sustain its biological character. This Dungeness River ecosystem restoration project is proposed to improve conditions for important ecological resources that affect the Puget Sound

watershed. These resources, including salmonid species listed under the Endangered Species Act, depend on a connected river and floodplain.

#### 4.0 PROPOSED ACTION AND ALTERNATIVES

Multiple alternatives were considered including the No-Action, Towne Road Alternative, Meadowbrook Creek at-Grade Road, and Meadowbrook Creek Road on Levee alternatives. A preliminary evaluation has been performed on the four alternatives:

- a. **No Action:** Under the No Action plan, the assumption is that no project would be implemented by the Corps to achieve the planning objectives. No floodplain acreage would be reconnected with the main channel, and no new side channels would form (unless as a result of a major flood event). The site would gradually become forested, which would provide upland habitat of some value to the ecosystem but of no value to any ESA-listed species.
- b. **Towne Rd Alternative:** This alternative would reconnect 63 acres of floodplain. Approximately 2,600 feet of levee in the reach would be removed, and the material utilized to rebuild the levee away from the channel, just riverward of Towne Road. The realigned levee would be 4,000 feet long, and occupy approximately 7 acres.
- c. **Meadowbrook Creek – At-Grade Road Alternative:** This alternative would reconnect 110 acres of floodplain. Approximately 2,600 feet of levee in the reach would be removed, and the material utilized to rebuild the levee away from the channel, just west of Meadowbrook Creek. The realigned levee would be 5,700 feet long, and occupy approximately 10 acres. Approximately 1,800 linear feet of Towne Road would be rerouted landward of the lower, wetter portion of the site near the main channel slated for historic channel restoration. Towne Road would be allowed to flood periodically (approximately every 2-5 years on average). One bridge would be installed to replace an old culvert under Towne Rd, allowing high water to pass under the road to a lower section to the east, and allowing fish entering the lower area to escape when high water recedes.
- d. **Meadowbrook Creek – Road on Levee Alternative:** This alternative would reconnect 95 acres of floodplain. Approximately 2,600 feet of levee in the reach would be removed, and the material utilized to rebuild the levee away from the channel, just west of Meadowbrook Creek. The realigned levee would be 5,700 feet long, and occupy approximately 25 acres. Approximately 3,500 linear feet of Towne Road would be rerouted to the top of the new levee. This would allow for complete removal of the roadway through the project site and eliminate the need for a bridge, but would necessitate a considerably wider levee.

The preferred alternative for the proposed work is the Meadowbrook Creek – At-Grade Road (Figure 1). Construction is anticipated to occur summer/fall 2016 and all in-water work would be completed during the fish window for this area (15 July – 30 September).

The Meadowbrook Creek At-Grade Road Alternative entails modification of the levee in the reach to reconnect the channel to 110 acres of floodplain, bounded to the west by the main channel and to the east by Meadowbrook Creek, a groundwater fed stream in a paleochannel of the Dungeness River. Historic side channels and back channels would be reconnected through targeted excavation, and hard features (wood) would be installed to modulate sediment and hydraulic dynamics. These elements are included to the degree needed to achieve some continuity of habitat elements (channels, sediment characteristics) following levee removal and to allow for a more gradual adjustment to post-restoration hydrology and hydraulics.

Approximately 2,600 feet of levee in the reach would be removed, and the material utilized to rebuild the levee away from the channel, just riverward of Towne Road. Levee rebuild is needed as a component of the levee removal measure to address induced flooding concerns, taking a “Do No Harm” approach with the goal to maintain the existing level of protection outside of the project footprint for existing infrastructure (including a major county road), homes, businesses and agricultural lands. The risk of avulsion would further exacerbate potential for flood damages if this step were omitted. The realigned levee would be segmented, or discontinuous, at the southwestern end to allow floodwaters that overtop or breach the levee upstream of the project site to return to the river unimpeded. A discontinuous levee also minimizes the amount of fill placed in the FEMA floodway. While backwater would move south through the gap between segments in the levee during high water, the upstream section of levee-to-remain (Figure 1) would extend north far enough so that backwater would not flow south beyond the project footprint. The realigned levee would be approximately 5,700 LF long, and occupy approximately 10 acres. The average width of the levee footprint (i.e. width at the base) would be about 75 feet.

Approximately 1,800 linear feet of Towne Road would be decommissioned and 2,200 linear feet of new road would be constructed landward of the lower, wetter portion of the site slated for historic channel restoration. Towne Road would be allowed to flood periodically (approximately every 2-5 years on average). A channel would be excavated to allow high water to pass under the road to a lower section to the east, and to allow fish entering the lower area to escape when high water recedes. A bridge would be installed where Towne Road would cross the channel to accommodate flow and to allow terrestrial mammals to avoid the road when traversing the site. Roughly half (900 feet) of the decommissioned portion of Towne Road would remain (Figure 1; north access road; emergency access only) and an additional gravel access road located just over a mile south of the project site (Figure 2; south access road) would be included to ensure adequate emergency access to the Federal levee during flood events

Areas disturbed by construction would be seeded and/or planted to control erosion, to deter colonization by invasive species and to accelerate habitat recovery.

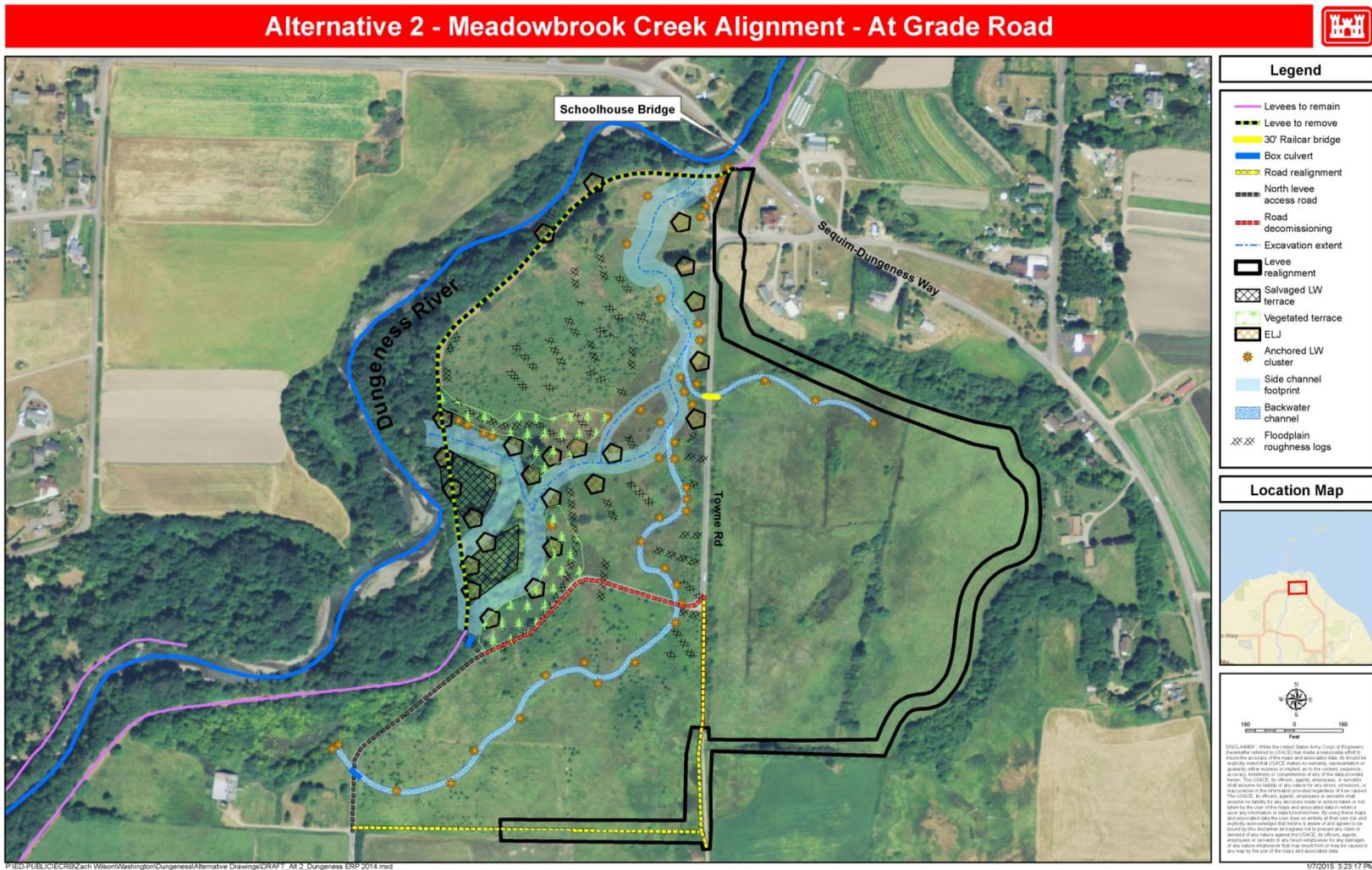
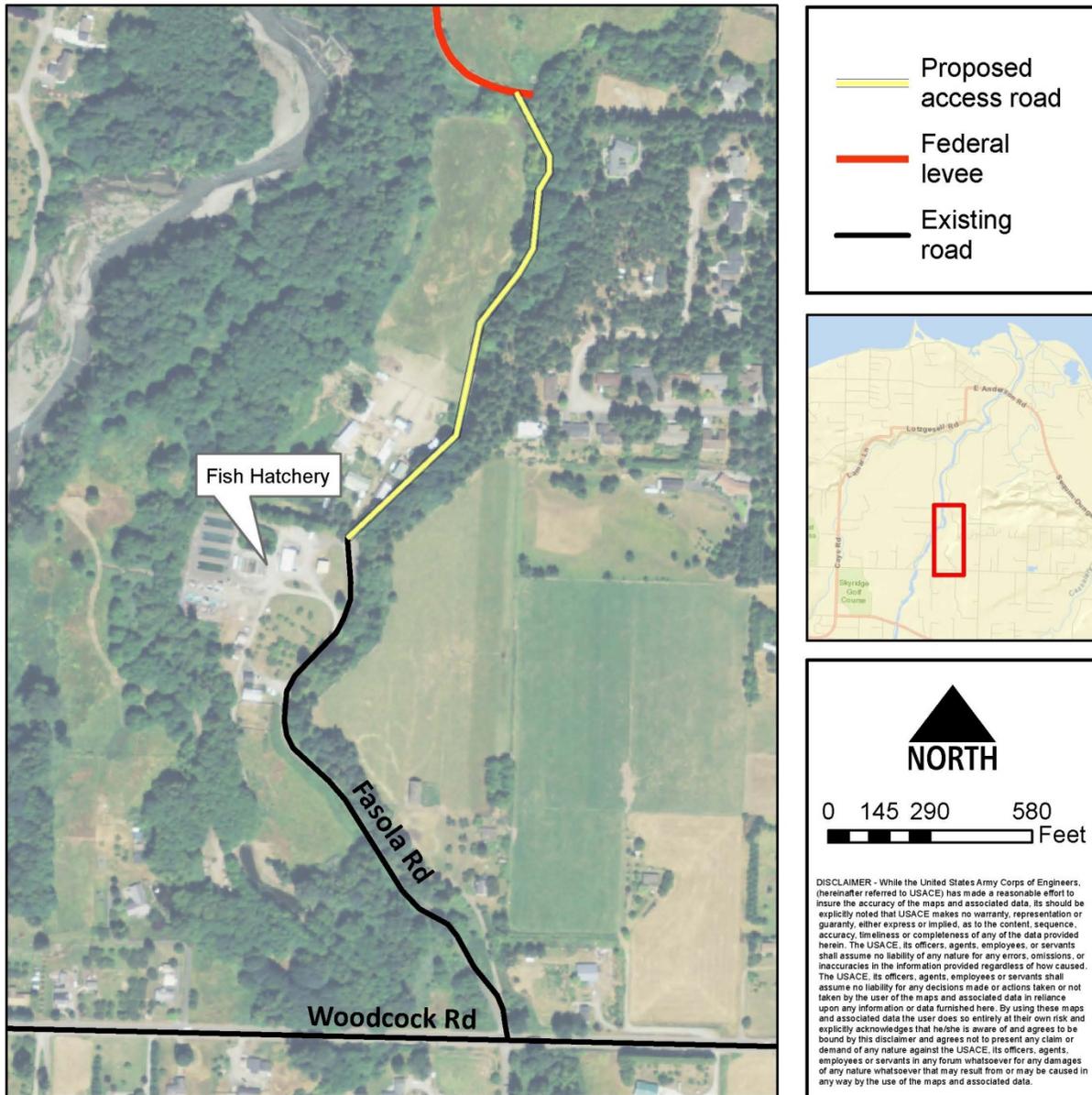


Figure 1. Meadowbrook Creek – At-Grade Road



South Access & Vicinity with 2013 Aerial Photo

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**Figure 2. Proposed South Access Road Alignment**

## **Potentially Adverse Effects (Individually or Cumulatively) on the Aquatic Environment**

### **a. Effects on Physical, Chemical, or Biological Characteristics of the Aquatic Ecosystem**

There would be a pulse of sedimentation following the opening of the new side channel, resulting in short-term turbidity increases as the streambed adjusts to the new flow. Small amounts of turbidity may be generated during the levee removal and the installation of ELJs. The majority of ELJs are to be placed on dry land, however a few will be placed along the banks of the Dungeness River. Turbidity monitoring will occur during these sediment generating activities. Localized shifting of sediments could continue sporadically after construction as the new side and back channels adjust. High flows during the winter and spring following construction may continue to mobilize sediments in the project area, potentially contributing to small increases in turbidity over that normally seen during high flow events.

The majority of the excavation work will be completed in the dry by completing much of the excavation prior to removal of the levee and avoiding connection to the existing channel until the project is complete. Connections to the existing channel and any other in-water work would be completed during the fish window. The fish window is estimated at 15 July to 30 September.

Due to the high sediment load in the river, and the large gradient between the existing river thalweg and the low areas within the proposed project area (including the constructed channels) there is a risk that the mainstem Dungeness River could abandon its current channel and migrate into the constructed channels. This risk will be limited by incorporating large amounts of large woody debris into the log jams at the head of constructed channels where they diverge from the mainstem, and by constructing the elevated vegetated terraces to reduce out-of-river overflows.

The project would result in 1.2 acres of wetland fill in the form of vegetated terraces, 9.2 acres of wetland conversion to side and back channels, and reconnection of 110 acres of floodplain to the river. Surface water and groundwater availability within the restoration site will likely increase significantly throughout the year following construction with the newly aligned levee in place. This is due to a majority of the site being lower than parts of the river. Efforts to construct and naturally maintain channels and ponds will not be hindered by a lack of water. Due to the depressed topography and location within a gaining reach of the river, the restoration site is expected to become a large wetland complex, with ample groundwater exchange. Over time the project is likely to contribute to an increase in wetlands in the reach, despite the initial loss.

### **b. Effects on Recreational, Aesthetic, Historical, and Economic Values**

Recreational opportunities would not be changed in the project area. The existing levee is a popular place for local residents to walk, run, and bird watch. These opportunities would still be available under the proposed project. The aesthetics of the site are not expected to change significantly with the reconnection of the area to the floodplain. The view of the area from Towne Road will not be impaired by project features. Temporary closure and rerouting of Towne Road may temporarily disrupt traffic during construction, but drivers may utilize alternative routes. Post-construction, Towne Road would be subject to periodic flooding (of short duration, potentially every 2-5 years) which would impede local traffic movement through the project site; however, alternate routes exist.

Construction of the proposed alternative would result in an adverse effect to archaeological site 45CA650. The archaeological site would be directly impacted by the ground preparation work necessary to build the levee. The site was determined to be eligible for the National Register of Historic Places under Criterion D in 2010. The Corps is currently working with the Jamestown S'Klallam Tribe and the Department of Archaeology and Historic Preservation to identify mitigation measures acceptable for all parties. The stipulations for mitigation will be codified in a Memorandum of Agreement signed by all consulting parties.

### **c. Findings**

There would be no significant adverse impacts to aquatic ecosystem functions and values. The site is likely to increase the amount of wetland in the reach. Based on the analysis of the proposed work, the environmental restoration project will not have a significant environmental impact.

## **5.0 ALL APPROPRIATE AND PRACTICABLE MEASURES TO MINIMIZE POTENTIAL HARM TO THE AQUATIC ECOSYSTEM**

### **a. Impact Avoidance Measures**

Four project alternatives have been proposed to select the best alternative for minimizing cost and impact to the environment while generating gains in habitat value and ecosystem function. The proposed project action was selected because it reconnects the largest amount of floodplain to the river, has the least amount of wetland fill, and minimizes the levee footprint. Potential impacts to aquatic animals and fish would be avoided by constructing the new side and back channels in the dry, without connection to the Dungeness River. Any in-water work would be conducted during the designated fish window, July 15 to September 30.

### **b. Impact Minimization Measures**

The Corps will take all practicable steps during construction of the project to minimize impacts to aquatic and terrestrial resources. Contingencies will be in place if any of the water quality protection measures fail to achieve their intended function. The minimization measures will be as follows:

- Best management practices (BMPs), such as stormwater runoff prevention, will be used to ensure that no unnecessary damage to the environment occurs.
- In-water work will only occur during July 15 through September 30 work window.
- During side and back channel construction, appropriate turbidity control measures (temporary coffer dam, silt curtains, or similar) would be used to isolate construction from the Dungeness River in order to minimize turbidity impacts.
- Utilization of marsh mats / swamp pads to minimize impacts to wetland soils.
- All required de-watering activities during construction would use appropriate devices (i.e. pumps, sand bags, sumps). All water removed from the site would be discharged in a vegetated upland location, a de-siltation basin, or location that would not incur damage due to water discharge.
- Drive trains of equipment would not operate in the water.
- All equipment would be cleaned prior to in-water construction work.
- No refueling would occur near rivers, streams, or wetlands.
- Construction equipment shall be regularly checked for drips or leaks.
- Construction equipment would include dust suppression methods to minimize airborne particulate matter that would be created during any ground disturbing activities that could create dust. Additionally, all equipment and vehicles would be required to be kept in good operating condition to minimize exhaust emissions. Standard practices would be used to control fugitive dust during the construction phase and during daily operations and maintenance of the proposed project

### **c. Compensatory Mitigation Measures**

Although the project will result in the loss of approximately 1.2 acres of wetland converted to vegetated terraces and 9.2 acres of wetland converted to side and back channels, the increase in function and values expected from the 110 acres of reconnected floodplain and channel network combined with the systemic benefits throughout the lower Dungeness ecosystem are expected to outweigh the wetland impacts.

### **d. Findings**

The Corps has determined that all appropriate and practicable measures have been taken to minimize

potential harm to the environment.

## **6.0 OTHER FACTORS IN THE PUBLIC INTEREST**

**a. Fish and Wildlife.** The Corps has determined that the project may affect, but is not likely to adversely affect four listed salmonid species or their critical habitat. The Corps has also determined that there will be no effect to four listed bird species and one invertebrate species. The project is being designed to provide long-term benefits to the species, although minor short-term negative impacts could occur as a result of the construction effort. Wildlife could be temporarily displaced from the site due to increased noise during construction. Overall, fish and wildlife will benefit from the improved function of the site.

**b. Water Quality.** The Corps has concluded that this project will not violate Washington State Water Quality Standards. There would be a pulse of sedimentation following the opening of the new side channel, resulting in short-term turbidity increases as the streambed adjusts to the new flow. Small amounts of turbidity may also be generated during the levee removal and the installation of ELJs. The majority of ELJs are to be placed in the dry, however a few will be placed along the banks of the Dungeness River. Turbidity monitoring will occur during these sediment generating activities. Localized shifting of sediments could continue sporadically after construction as the new stream heals and adjusts. High flows during the winter and spring following construction may continue to mobilize sediments in the project area, potentially contributing to small increases in turbidity over that normally seen during high flow events. During inlet/outlet construction and watering of the new channel, appropriate turbidity control measures (temporary coffer dam, silt curtains, or similar) would be used to isolate construction from the river and to minimize turbidity impacts. Long-term impacts of the project will be beneficial for water quality through the increased connection to the floodplain and improved riparian habitat.

**c. Historical and Cultural Resources.** The Corps has coordinated its environmental review impacts on cultural resources for NEPA with its responsibilities to take into account effects on historic properties as required by Section 106 of the National Historic Preservation Act (1966). The Corps has determined and documented the area of potential effect (APE) for both direct and indirect effects, as required by 36 C.F.R. Part 800.4 of the regulations implementing Section 106. The APE includes the 110-acre levee setback footprint (the half-mile of levee to be removed), the new levee alignment and the proposed one-mile emergency road that will connect the southern end of the newly setback levee. The Washington State Historic Preservation Officer (SHPO) agreed with our determination of the APE on August 17, 2011. Previous cultural resources surveys indicated that two historic structures and one prehistoric archaeological site are located within the APE. The two historic structures were mitigated under a memorandum of agreement (MOA) executed on November 15, 2012. The SHPO agreed on January 15, 2015 with our determination of adverse effect for prehistoric archaeological site (45CA650). Mitigation of adverse effects to site 45CA650 will be subsequently resolved through a separate MOA with the SHPO, Advisory Council on Historic Preservation (ACHP), and the Indian tribes (Jamestown S'Klallam Tribe and Lower Elwha Klahham Tribe).

**e. Environmental Benefits.**

The project would restore ecosystem function and structure by reconnecting the river to its historic floodplain, creating off-channel habitat for salmonids and other fish, and restoring riparian habitat for other wildlife. Off-channel habitat critical for juvenile salmonid refuge and rearing created by the project includes 3500 feet of backwater channels and over 2900 feet of side channels. The addition of native riparian plants along the new side and back channels would provide shading and cover leading to localized cooler temperatures, and increased primary production of energy in the form of insect and leave drop. Construction of ELJs and large wood clusters would create pools and cover that would provide

refuge for juvenile salmonids from avian predators. Restored riparian vegetation will create habitat for birds, amphibians, and small mammals.

**9. CONCLUSION**

The Corps finds that this project is within the public's interest and complies with the substantive elements of Section 404 of the Clean Water Act.

## Attachment A

### Clean Water Act 404(b)(1) Evaluation [40 CFR §230] Permit Application Evaluation [33 CFR §320.4]

#### 404(b)(1) Evaluation [40 CFR §230]

#### Potential Impacts on Physical and Chemical Characteristics [Subpart C]:

##### 1. Substrate [230.20]

The construction will move substrate around within the project area. The material excavated to create the side channels and backwater areas will be reused on site to build the terraced forested areas at the entry to the side channel. Additionally the material excavated with the levee removal will be reused in the construction of the setback levee. No significant change in substrate will occur.

##### 2. Suspended particulates/turbidity [230.21]

Minimal turbidity is expected during construction. Best management practices (BMPs) for sediment control will be used throughout construction to minimize any potential turbidity issues. There would be a pulse of sedimentation following the opening of the new side channel, resulting in short-term turbidity increases as the streambed adjusts to the new flow. Small amounts of turbidity may also be generated during the levee removal and the installation of ELJs. The majority of ELJs are to be placed in the dry, however a few will be placed along the banks of the Dungeness River. Turbidity monitoring will occur during these sediment generating activities. Localized shifting of sediments could continue sporadically after construction as the new stream heals and adjusts. High flows during the winter and spring following construction may continue to mobilize sediments in the project area, potentially contributing to small increases in turbidity over that normally seen during high flow events. During inlet/outlet construction and watering of the new channel, appropriate turbidity control measures (temporary coffer dam, silt curtains, or similar) would be used to isolate construction from the river and to minimize turbidity impacts. All “in-water” construction work would take place during the established fish window (July 15 through September 30), which is the driest time of the year.

##### 3. Water [230.22]

The work is not expected to add any nutrients to the water that could affect the clarity, color, odor, or aesthetic value of the water, or that could reduce the suitability of the Dungeness River for aquatic organisms or recreation. Long-term impacts of the project will be beneficial for water quality through the increased connection to the floodplain and improved riparian habitat. The project would fill 1.2 acres of existing wetland. Since the majority of the reconnected floodplain is lower than parts of the river and the location of the project is within a gaining reach of the river, the restoration site will become a large wetland complex, with ample groundwater exchange. Over time the project is likely to contribute to an increase in wetlands in the reach, despite the initial loss.

##### 4. Current patterns and water circulation [230.23]

Surface water and groundwater availability within the restoration site will likely increase significantly throughout the year due to construction of the realigned levee due to a majority of the site being lower than the existing river channel. Efforts to construct and naturally maintain channels and ponds will not be hindered by a lack of water. Due to the depressed topography, and location within a gaining reach of the river, the restoration site is expected to become a large wetland complex, with ample groundwater exchange which would be a cold water refuge for salmonids during warm periods.

The compaction of the levee foundation is likely to disrupt the flow of shallow groundwater, diverting it into constructed channels that drain back to the river, however due to the presence of lenses of noncohesive gravels and cobbles, the levee is not likely to block all seepage pathways from the site toward Meadowbrook Creek.

During flood events, water will be allowed to pond to depths potentially exceeding 8 feet adjacent to the realigned levee. This is a significant change from existing conditions, where flows spread out across the fields until concentrating in swales, ditches and channels. During flood events, water may cross over Towne Road and be trapped between the road (local drainage divide) and the setback levee. This could create significant surcharge pressure on the local groundwater table, and if allowed to occur frequently may increase flow in Meadowbrook Creek above historic conditions. For this reason, and to reduce fish stranding risk, channels will be used to prevent long duration ponding near the levee.

**5. Normal water fluctuations [230.24].**

Daily streamflow trends are characterized as having two high runoff periods (late fall/early winter & late spring/early summer with low flow periods in March and later summer. Typical late summer streamflows average less than 200 cubic feet per second (cfs), while average winter flows in December through February are approximately 400 cfs. Peak sustained flows occur during snowmelt in May, June, and July. Average daily discharge is 382 cfs, 33 in/year, 276,000 acre-ft (USGS 2008). The river basin hydrology has been dramatically altered by an irrigation system initiated in 1896, and an estimated 173 miles of canals and ditches spread Dungeness River water throughout the lower watershed area. Since 1993, water conservation projects have been implemented on the irrigation system to reduce the impacts of water withdrawal on instream flows. Projects include piping, lining ditches, replacing siphons, and outreach.

The project would result in flood elevations decreasing as much as 1.9 feet in the restored reach (average of 0.7 feet) in the main channel. Within the bounds of the restoration site flood elevations increase as expected due to levee removal, however in the vicinity and downstream of Sequim Dungeness Way, flood elevations in the floodplain are reduced due to the assumption that the realigned levee would contain the 1 percent annual exceedance probability flood. At the downstream end of the project where overflows return to the river, main channel flood levels may increase by 1 foot due to the backwater effects of momentum exchange with the overflows, however the increase is localized and would not threaten roads, levees, or bridges.

**6. Salinity gradients [230.25]**

No effect to salinity gradients would occur.

**Potential Impacts on Biological Characteristics of the Aquatic Ecosystem [Subpart D]:**

**1. Threatened and endangered species [230.30]**

The Corps has determined that the project may affect, but is not likely to adversely affect listed salmonid species or their critical habitat. The Corps has also determined that there will be no effect to four listed bird species and one invertebrate species. Construction of the project will occur during the fish window to limit impacts on listed salmonids. The project is designed to improve long-term conditions for listed salmonids and other wildlife by increasing floodplain connection, creating side channel and back water habitat, and improving riparian habitat.

**2. Fish, crustaceans, mollusks, and other aquatic organisms in the food web [230.31]**

Fish, crustaceans, mollusks, and other aquatic organisms may be temporarily impacted by small turbidity increases. The long-term improvements to the project site are expected to benefit aquatic organisms.

**3. Other wildlife [230.32]**

Wildlife in the vicinity of the project are expected to be acclimated to human presence and noise as the project area is adjacent to residential, agricultural areas, and local access roads. Birds and other wildlife may be temporarily displaced due to increased noise and presence of equipment. Long-term benefits to wildlife include improved riparian conditions and a greater diversity of habitat.

### **Potential Impacts on Special Aquatic Sites [Subpart E]:**

- 1. Sanctuaries and refuges [230.40]**

The proposed and completed actions will have no effect on sanctuaries and refuges.
- 2. Wetlands [230.41]**

A portion of the project will fill 1.2 acres of existing wetlands and convert 9.2 acres of wetland to side and back channel habitat. However, a majority of the reconnected floodplain is lower than parts of the river. Due to the depressed topography, and the location of the project within a gaining reach of the river, the restoration site is expected to become a large wetland complex, with ample groundwater exchange. Over time the project is likely to contribute to an increase in wetlands in the reach, despite the initial loss.
- 3. Mud flats [230.42]**

No mud flats are present at the project site; therefore, the proposed and completed action will have no effect on mudflats.
- 4. Vegetated shallows [230.43]**

No vegetated shallows are present at the project site; therefore, the proposed and completed action will have no effect on vegetated shallows.
- 5. Corral reefs [230.44]**

Not applicable.
- 6. Riffle and pool complexes [230.45]**

Large side channels along with anchored large wood and engineered logjams are proposed to reestablish hydraulic processes, including the creation of pool habitat. Engineered logjams will be located where it is desired to split or deflect flow along constructed channel alignments. Typically the river will form large pools at woody hard points, which are also natural locations for wood and gravel storage. Growth and/or abandonment of constructed logjams is a natural process and is to be expected. Locating some of logjams at low points where flow is most likely to be present will ensure that some of the structures will be engaged with the river, thus creating pools.

### **Potential Effects on Human Use Characteristics [Subpart F]:**

- 1. Municipal and private water supplies [230.50]**

The proposed and completed action will have no effect on municipal or private water supplies.
- 2. Recreational and commercial fisheries [230.51]**

The project location is not open to public use. The access will be unchanged by the project. No effect to recreational and commercial fisheries is expected.
- 3. Water-related recreation [230.53]**

The proposed and completed action will have no effect on water-related recreation.
- 4. Aesthetics [230.53]**

The aesthetics of the site are expected to change slightly with the reconnection of the area to the floodplain. The view of the area from Towne Road is likely to change from the existing wet meadow to a side channel/backwater wetland complex.
- 5. Parks, national and historic monuments, national seashores, wilderness areas, research sites and similar preserves [230.54]**

Not applicable.

### **Evaluation and Testing [Subpart G]:**

- 1. General evaluation of dredged or fill material [230.60]**

Excavated soils will be placed within the site along the elevated margins of the relic oxbow to help restore natural rates of connectivity with the floodplain. Constructed terraces will be gently sloped and heavily revegetated with native species to resist erosion by the river and accelerate restoration of

the riparian forest.

Any imported material will be free from contamination and obtained from a permitted local quarry. For the new levee segment, a buried toe of riprap will be required at the downstream end of the restoration project, as the levee ties into the bridge approach. This toe will be excavated to an elevation of approximately 12 feet NAVD 88 to match the existing river channel elevation.

**2. Chemical, biological, and physical evaluation and testing [230.61]**

No soil sampling is required as no contamination is known or expected. Turbidity monitoring will be completed as necessary to ensure compliance with state water quality standards during construction.

**Actions to Minimize Adverse Effects [Subpart H]:**

**1. Actions concerning the location of the discharge [230.70]**

The materials to be discharged (toe rock and levee material) are clean and the materials to be excavated will be reused on site. Staging areas will be located in uplands.

**2. Actions concerning the material to be discharged [230.71]**

Bank armoring material will be required to meet Corps standards for placement of riprap. Material will be imported from an approved, clean source.

**3. Actions controlling the material after discharge [230.72]**

There would be a pulse of sedimentation following the opening of the new side channel, resulting in short-term turbidity increases as the streambed adjusts to the new flow. Turbidity monitoring will occur during these sediment generating activities and BMPs will be in place to limit the impact to the river. Localized shifting of sediments could continue sporadically after construction as the new stream heals and adjusts. High flows during the winter and spring following construction may continue to mobilize sediments in the project area, potentially contributing to small increases in turbidity over that normally seen during high flow events.

**4. Actions affecting the method of dispersion [230.73]**

The project includes construction of two elevated vegetated terraces. Due to the high sediment load, and large gradient between the existing river thalweg and the low areas within the proposed project area (including the constructed channels) there is a risk that the mainstem Dungeness River could abandon its current channel and migrate into the constructed channels. This will be mitigated by incorporating large amounts of LWD into the ELJs at the head of constructed channels where they diverge from the mainstem, and by constructing the elevated vegetated terraces to reduce out-of-river overflows. If the main channel was abandoned during low flows it would still serve as a side channel during floods and could be enhanced as part of future restoration efforts.

**5. Actions related to technology [230.74]**

The technology used in the proposed project is considered acceptable for this scope of work. Disposal will involve use of a hydraulic excavator with material transported to and from the site in dump trucks. Road construction equipment will also be needed to reconstruct Towne Road. Best management practices would be used, including drive trains of equipment would not operate in the water, all equipment would be cleaned prior to in-water construction work, no refueling would occur near the Dungeness River, construction equipment will be regularly checked for drips or leaks, all equipment and vehicles would be required to be kept in good operating condition to minimize exhaust emissions, and standard practices would be used to control fugitive dust during the construction phase.

**6. Actions affecting plant and animal populations [230.75]**

The Corps has coordinated construction activities with state and federal resource agencies to minimize impacts to fishery and wildlife resources. There will be temporary disturbance to wildlife in the project vicinity due to noise from operation of machinery. Timing of construction will avoid impacts to sensitive species.

**7. Actions affecting human use [230.76]**

The Corps has taken all appropriate and practicable steps to assure minimal impacts to human use, safety and general appreciation of the area. Traffic will be detoured around the area during construction and Towne Road will be reconstructed to minimize traffic disruption. Towne Road may need to be closed periodically, as it will run through the reconnected floodplain. Signs and flaggers will be used as needed to minimize impacts and improve safety. Construction will occur during daylight hours to minimize noise impacts to nearby houses.

**8. Other actions [230.77]**

Best management practices will be used in the proposed construction to ensure that no unnecessary damage to the environment occurs.

**General Policies for Evaluating Permit Applications [33 CFR §320.4]**

**1. Public Interest Review [320.4(a)]**

The Corps finds this ecosystem restoration project to be in compliance with the 404(b)(1) guidelines and not contrary to public interest.

**2. Effects on wetlands [320.4(b)]**

The project would result in 1.2 acres of wetland fill, 9.2 acres of wetland conversion to side and back channels, and reconnection of 110 acres of floodplain to the river. Surface water and groundwater availability within the restoration site will likely increase significantly throughout the year following construction with the newly aligned levee in place. This is due to a majority of the site being lower than parts of the river. Due to the depressed topography, and location within a gaining reach of the river, the restoration site would become a large wetland complex, with ample groundwater exchange. Over time the project is likely to contribute to an increase in wetlands in the reach, despite the initial loss.

**3. Fish and wildlife [320.4(c)]**

The Corps has found that no negative impacts will occur to sensitive species and impacts to fish and wildlife will be temporary and minimal.

**4. Water quality [320.4(d)]**

The project will involve a discharge of fill material into waters of the United States. The Corps does not issue permits for its own civil works activities. Nevertheless, the Corps will comply substantively with Section 404, and will obtain a water quality certification under Section 401 prior to construction. When project drawings are advanced in the design phase, the Corps will provide these and all other necessary documentation for the Washington State Department of Ecology to certify that the action will not violate established water quality standards.

Section 402 of the Act requires a National Pollutant Discharge Elimination System (NPDES) permit and the associated implementing regulations for General Permit for Discharges from large and small construction activities for construction disturbance over one acre. This project will have land disturbance well over one acre; therefore, a NPDES permit will need to be obtained.

**5. Historic, cultural, scenic, and recreational values [320.4(e)]**

Construction of the proposed alternative would result in an adverse effect to archaeological site 45CA650. The site was determined to be eligible for the National Register of Historic Places under Criterion D in 2010. The Corps is currently working with the Jamestown S'Klallam Tribe and the Department of Archaeology and Historic Preservation to identify mitigation measures acceptable for all parties. The stipulations for mitigation will be codified in a Memorandum of Agreement signed by all consulting parties.

Recreational opportunities would not be changed in the project area. Opportunities for local residents to walk, run, and bird watch would still be available. The aesthetics of the site would not change significantly with the reconnection of the area to the floodplain. The view of the area from Towne Road will not be impaired by project features. Temporary closure and rerouting of Towne Road may

temporarily disrupt traffic during construction, but drivers may utilize alternative routes. Post-construction, Towne Road would be subject to periodic flooding (of short duration, potentially every 2-5 years) which would impede local traffic movement through the project site; however, alternate routes exist.

**6. Effects on limits of the Territorial Sea [320.4(f)]**

Not applicable.

**7. Consideration of property ownership [320.4(g)]**

Federal involvement in ecosystem restoration is supported in law and Executive Order.

**8. Activities affecting coastal zones [320.4(h)]**

Pursuant to the Coastal Zone Management Act (CZMA), the Corps' actions are required to be consistent to the maximum extent practicable with the approved State Coastal Zone Management Program. The Corps will prepare a Coastal Zone Consistency evaluation and provide it to Washington Department of Ecology for concurrence.

**9. Activities in marine sanctuaries [320.4(i)]**

Not applicable.

**10. Other federal, state, or local requirements [320.4(j)]**

The Corps will send information about the proposed action to all applicable federal, state, local, and tribal parties. The project will have no effect on terrestrial ESA-listed species and is not likely to adversely affect listed fish species. A Specific Project Information Form (SPIF) for restoration project, will be provided to the U.S. Fish and Wildlife Services and the National Marine Fisheries Service to ensure compliance with ESA. A Joint Aquatic Resources Form will be filed with the Washington Department of Ecology to ensure compliance with Clean Water Act Section 401 and the Coastal Zone Management Act. Additionally a Stormwater Pollution Prevention Plan will be developed and a Construction General permit will be sought from the Environmental Protection Agency for compliance with Clean Water Act Section 402.

**11. Safety of impoundment structures [320.4(k)]**

Not applicable.

**12. Floodplain Management [320.4(l)]**

The project is in compliance. The Corps considered alternatives to reduce hazards and risks associated with floods and to minimize the impact of floods on human safety, health and welfare, and restoring and preserving the natural and beneficial values of the base floodplain. The project maintains the status quo of the level of protection for local residences.

**13. Water supply and conservation [320.4(m)]**

No impacts to water supply are anticipated.

**14. Energy conservation and development [320.4(n)]**

Not applicable.

**15. Navigation [320.4(o)]**

This project will not impede current navigability within the Dungeness River.

**16. Environmental benefits [320.4(p)]**

The project would restore ecosystem function and structure by reconnecting the river to its historic floodplain, creating off-channel habitat for salmonids and other fish, and restoring riparian habitat for other wildlife. Off-channel habitat critical for juvenile salmonid refuge and rearing created by the project includes 3500 feet of backwater channels and over 2900 feet of side channels. The addition of native riparian plants along the new side and back channels would provide shading and cover leading to localized cooler temperatures, and increased primary production of energy in the form of insect and leave drop. Construction of ELJs and large wood clusters would create pools and cover that would provide refuge for juvenile salmonids from avian predators. Restored riparian vegetation will create habitat for birds, amphibians, and small mammals.

**17. Economics [320.4(q)]**

No impacts to economics are anticipated.

**18. Mitigation [320.4(r)].**

As this is a restoration project, it is considered self-mitigating. Although the project will result in the loss of approximately 1.2 acres of wetlands and conversion of 9.2 acres of wetland to side and back channels, the increase in function and values expected from the 110 acres of reconnected floodplain and channel network combined with the systemic benefits throughout the lower Dungeness ecosystem are expected to outweigh the wetland impacts..



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
**SEATTLE DISTRICT, CORPS OF ENGINEERS**  
P.O. BOX 3755  
SEATTLE, WASHINGTON 98124-3755

CENWS-EN-ER

**Draft Finding of No Significant Impact**  
**Lower Dungeness River**  
**Ecosystem Restoration Project**  
**Clallam County, Washington**

**1. Background.** Ecosystem problems in the study area stem primarily from degradation of riverine processes including channel formation, sediment transport, organic matter exchange, food web support, and wood recruitment. Levees constructed along the reach effectively disconnecting the main channel from the historic floodplain. A Corps levee built in 1964 was the first and longest levee constructed in the area disconnecting approximately 410 acres of floodplain, side channel and distributaries from the river. In response to the Corps levee, two private dikes were built on the opposite bank, disconnecting approximately 150 additional acres. Levee construction adjacent to the main channel has impacted the riverine processes that create and sustain habitat, leading to coarser sediments on the bed, elevated gravel bars, less woody debris, and fewer stable pools. The levees also cut off side channels and result in higher velocities and depths during floods. With fewer channels, there is also less riparian area; benefits of riparian areas include providing habitat for mammals, migratory songbirds and raptors, generation of insects of forage value to fish, and shading the river to maintain the cooler temperatures to which native fish have adapted.

The Lower Dungeness River Section 544 Ecosystem Restoration project (Dungeness Project) site is located approximately one mile upstream from the river's outlet at Dungeness Bay on the Strait of Juan de Fuca, and about five miles northwest of the city of Sequim, in Clallam County, Washington. The need for the proposed Federal action arises from the significant degradation of natural processes that sustain the ecological functions of the lower Dungeness River. Disconnection of the river from its historic floodplain has degraded in-channel and off-channel habitat for Federally-listed fish species, as well as the associated riparian zone that historically enhanced the riverine habitat while also providing habitat for mammals, raptors, songbirds and other wildlife. The project is needed to restore a large floodplain site to contribute to the recovery of sensitive fish and wildlife species in the lower Dungeness basin. Restoration opportunities exist to: 1) reconnect and restore the reach's historic side channels and back channels; 2) improve the quantity, quality, and complexity of native riparian and floodplain habitat in the study area; and 3) re-establish riverine processes that create fish habitat and establish the dynamic conditions that sustain the quality of that habitat over time.

**2. Authority.** The proposed project is a separable element of the specifically authorized project, Puget Sound and Adjacent Waters Restoration, Washington, (PSAW) authorized by Section 544 of the Water Resources Development Act of 2000 (Public Law 106-541, December 11, 2000),

which authorizes implementation of critical restoration projects in Puget Sound and its contributing watersheds. The Federal interest in this separable element of the PSAW program stems from its intent to restore habitat for Endangered Species Act (ESA)-listed species that has been impacted by a Corps levee.

**3. Proposed Action.** The proposed action would modify the Corps levee in the reach to reconnect the Dungeness River to 110 acres of floodplain, bounded to the west by the main channel and to the east by Meadowbrook Creek, a groundwater fed stream in a paleochannel of the Dungeness River. Approximately 2,600 feet of the existing Corps levee would be removed, and the material utilized to rebuild a 5,700 foot long realigned levee away from the channel, just west of Meadowbrook Creek. Engineered log jams, large cottonwood livestakes, and anchored large wood clusters would be installed to modulate hydraulic forces with the intent of accelerating development of channels suitable for fish, and to reduce avulsion risk tied to the elevated (aggraded) condition of the existing river bed and site topography. These elements are included to the degree needed to achieve some continuity of habitat elements following levee removal, as hydrologic and sediment processes establish a new (dynamic) equilibrium. Native plants would be planted to control erosion and accelerate habitat recovery where soils are disturbed due to construction.

Approximately 1,800 linear feet of Towne Road would be rerouted landward of the lower, wetter portion of the site. Towne Road would be allowed to flood periodically (approximately every 2-5 years on average). A bridge would be installed where Towne Rd crosses a new back channel, allowing high water to pass under the road to a lower section to the east, and allowing fish entering the lower area to escape when high water recedes. The bridge would also allow terrestrial mammals to avoid the road when traversing the site.

A new box culvert would be installed to replace the existing corrugated metal pipe culvert that connects the wetland area at the southwest corner of the site to the river, and a new box culvert under the remaining north levee access road (currently Towne Road) would provide access over a groundwater fed side channel conveying river backwater flowing into the site and potentially upstream levee overflows during major floods. The provision of box culverts prevents fish stranding, creates connectivity between restored areas that would otherwise be disconnected, and maintains existing levee access routes.

Since levee realignment would result in a segmented levee, a north access road and a south gravel access road are included as part of the project to ensure adequate emergency access. The south access road will follow the alignment of an irrigation pipeline that is planned by the Clallam Conservation District to replace an existing irrigation ditch.

**4. Summary of Impacts and Compliance.** The impacts of the proposed project are described fully in the project Detailed Project Report/Environmental Assessment (DPR/EA) dated January 2015, and summarized herein.

Temporary unavoidable adverse impacts associated with this project are expected to include construction impacts such as noise disturbance to wildlife and residents in the vicinity of operating heavy machinery; increased emissions from heavy machinery; impacts to turbidity during the connection of the side channel to the river; and disruption of local traffic in the project vicinity. To lessen the potential impacts to threatened, endangered, and sensitive

species, in- water work would take place during the work window of July 15 through September 30. Implementation of best management practices (BMPs) would also minimize impacts to fish and wildlife habitats. Adverse impacts also include the filling of approximately 1.2 acres of existing wetland and excavation of about 9.2 acres of wetland to create side and back channel habitat. Levee modification resulting in periodic overbank flooding, enhancement of the remaining wetlands, expected conversion of additional upland to wetland over time, and plantings and recruitment of native woody species would compensate for this initial loss by increasing the overall habitat complexity and function of the site.

The Corps would coordinate with Federal agencies to ensure careful consideration of fish and wildlife resources. For projects that intend to restore fish habitat, agencies can accomplish their ESA consultation requirements by complying with a programmatic biological opinion for habitat restoration. To fulfill the requirements for consultation under ESA, the Corps would prepare a Specific Project Information Form (SPIF) and submit this form under the Habitat Restoration Programmatic Biological Opinion (2008). Construction would not begin prior to completion of the ESA consultation process.

The Corps has prepared a draft 404(b)(1) analysis, included as an attachment to the DPR/EA (Appendix I). Receipt of Water Quality Certification under Section 401 of the Clean Water Act and a Coastal Zone Consistency Determination for the proposed project would be attained during the final design phase and prior to construction.

The Corps has coordinated its environmental review impacts on cultural resources for NEPA with its responsibilities to take into account effects on historic properties as required by Section 106 of the National Historic Preservation Act (1966). The Corps has determined and documented the area of potential effect (APE) for both direct and indirect effects, as required by 36 C.F.R. Part 800.4 of the regulations implementing Section 106. The APE includes the 110-acre levee setback footprint (the half-mile of levee to be removed), the new levee alignment and the proposed one-mile emergency road that will connect the southern end of the newly setback levee. The Washington State Historic Preservation Officer (SHPO) agreed with our determination of the APE on August 17, 2011. Previous cultural resources surveys indicated that two historic structures and one prehistoric archaeological site are located within the APE. The two historic structures were mitigated under a memorandum of agreement (MOA) executed on November 15, 2012. The SHPO agreed on January 15, 2015 with our determination of adverse effect for prehistoric archaeological site (45CA650). Mitigation of adverse effects to site 45CA650 will be subsequently resolved through a separate MOA with the SHPO, Advisory Council on Historic Preservation (ACHP), and the Indian tribes (Jamestown S'Klallam Tribe and Lower Elwha Klahham Tribe).

Avoidance measures and reduction of impacts would take the form of on-site biological and cultural resources monitoring, the implementation of best management practices (BMPs) during construction, and scheduling to avoid potential impacts to fish and wildlife species.

**5. Finding.** Based on the attached environmental documentation, coordination, and analysis conducted to date by the Corps environmental staff, the Dungeness Project is not expected to result in significant adverse environmental impacts. The Dungeness Project is not considered a major Federal action having significant impact on the human environment. Therefore, the preparation of an environmental impact statement supplement is not required.

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Date

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John G. Buck  
Colonel, Corps of Engineers  
District Commander