

ENVIRONMENTAL ASSESSMENT

LEVEE REHABILITATION
NISQUALLY PARK
PIERCE COUNTY, WASHINGTON



Prepared by:
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Seattle District

March 2017



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ACRONYMS

BMP	Best Management Practice
cfs	cubic feet per second
CFR	Code of Federal Regulations
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
DAHP	Department of Archaeology and Historic Preservation
dbh	diameter at breast height
DPS	distinct population segment
EA	environmental assessment
EPA	Environmental Protection Agency
EFH	Essential Fish Habitat
ESA	Endangered Species Act
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPS	National Park Service
NRHP	National Register of Historic Places
SIP	State Implementation Plan
USFWS	United States Fish and Wildlife Service
WDE	Washington Department of Ecology
WDFW	Washington Department of Fish and Wildlife

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1 INTRODUCTION

The purpose of an Environmental Assessment (EA), as reflected in 15 CFR Sections 1500.1(c) and 1508.9(a)(1) of the Council on Environmental Quality Regulations implementing the National Environmental Policy Act of 1969 (as amended) (NEPA), is to “provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact” on actions authorized, funded, or carried out by the federal government, and “to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.” This assessment evaluates environmental consequences of rehabilitation actions to be carried out by the U.S. Army Corps of Engineers (Corps) at a location where the Nisqually Park Levee was damaged during floods in 2015.

The levee was originally built in the 1960s to protect State Route 706 and residential properties. The Corps has repaired the levee in 1977, 2004, and 2011. The levee has also been repaired by other entities in other years. In 2015, three high water events occurred over the six-week period from the end of October through mid-December, and the levee was damaged during these floods. On 09 December 2015 at 0100 hours, the Nisqually River near Ashford (U. S. Geological Survey gage 12082500) reached a peak stage of 12.55 feet, equivalent to a river flow of 16,700 cubic feet per second, which corresponds to a 300-year average return interval flood (0.33% Annual Exceedance Probability) based on the August 1987 Pierce County Flood Insurance Study. This largest event was above flood stage for 24 hours on 08 and 09 December. The Nisqually gage is located at River Mile 57.8, approximately 10.7 miles downstream of the Nisqually Park Levee, which is centered at approximately River Mile 68.5. Damages occurred in two locations during the 2015 floods and need to be repaired in order to restore the pre-damage level of protection.

1.1 Project Location

The Nisqually Park Levee is located along the right bank of the Nisqually River in Pierce County (Township 15 North, Range 7 East, Sections 33 and 34; Willamette Meridian), upriver of Ashford, Washington. The project location is shown in Figure 1. The levee is a complete system approximately 4,650 feet long. During the 2015 flooding, damage occurred in two locations; Site 1, adjacent to the upstream end of the levee, is within the Mount Rainier National Park. Site 2 is downstream and not within the national park.

1.2 Authority

The proposed work is authorized by Public Law 84-99 (33 U.S. Code Section 701n). The Corps’ rehabilitation and restoration work under this authority is limited to the repair of flood control works damaged or destroyed by floods. The statute authorizes rehabilitation to the condition and level of protection exhibited by the flood control work prior to the damaging event. Pierce County is the non-Federal sponsor of the proposed action.

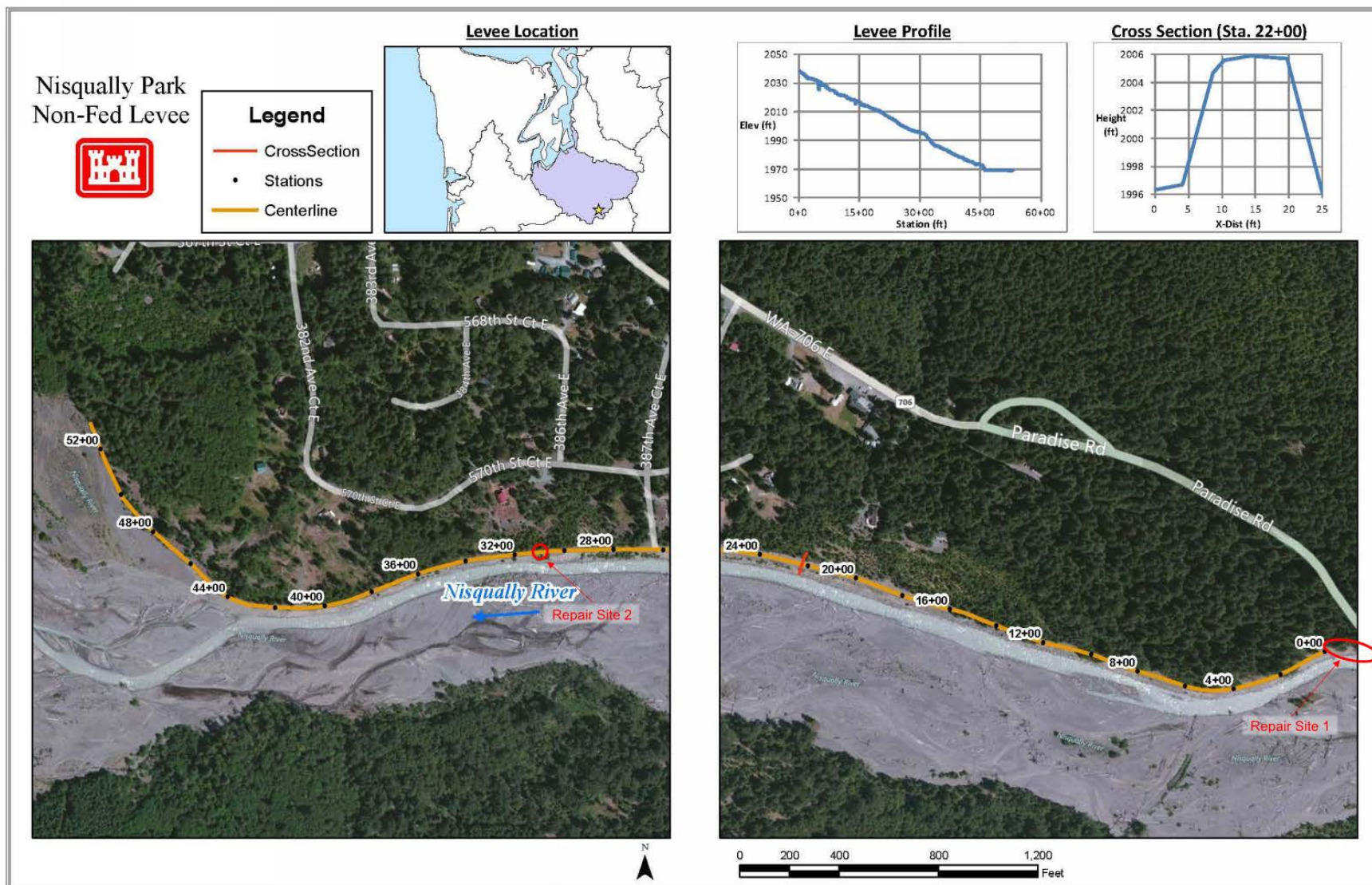


Figure 1. Nisqually Park Levee project location

1.3 Project Purpose and Need

The purpose of the proposed project is to restore adequate and reliable flood protection to the same level provided by the levee prior to the damaging flood events. The Nisqually Park Levee provides protection to 467 structures, including residences and national park facilities as well as public roads and utilities. In an undamaged state, the levee provides approximately a 500-year level of protection.¹

Damage occurred in two locations (Figure 2) during the high water events in 2015. Adjacent to the upstream end of the levee (Site 1), the embankment suffered damage along 300 linear feet consisting of toe scour and loss of riprap armor. Approximately 3,000 feet downstream, at Site 2, damage occurred along 40 linear feet when the river undercut the toe of the levee and dislodged riprap from the slope armor; including transitions to adjacent parts of the levee, the repair length would be 90 feet. The damaged sections are shown in Appendix A.

In the damaged condition, the levee provides a 4-year level of protection. If the levee failed, structures could be flooded. The Corps has not received any reports of lost lives in previous floods, an indication of a well-informed population at risk; however, the risk of loss of life still exists.

2 ALTERNATIVES CONSIDERED

2.1 No Action Alternative

Under the No Action Alternative, the Corps would not perform the repairs and would leave the facility in its current damaged state. This alternative would not meet the project purpose because the damaged structure does not provide adequate and reliable flood protection. The No Action Alternative is not recommended because failure to take action would endanger protected homes, government facilities, and public infrastructure during future floods. The No Action Alternative is carried through the alternative comparison process in this EA to provide a baseline for comparison of other alternatives.

2.2 Non-Structural Alternative

The Non-Structural Alternative would buyout or relocate all existing structures and infrastructure presently within the area protected by the levee. The costs and timeframe for implementing this alternative make it incompatible with the project purpose; accordingly, it was eliminated from further consideration. In addition, the Corps has no authority to pursue the non-structural alternative if not requested by the sponsor. The sponsor has notified the Corps that they do not wish to pursue the non-structural alternative.

¹ In 2011, when the Nisqually Park Levee was last repaired, the levee was estimated to provide a 20-year level of protection. Subsequent modeling revealed that the storms that occurred in 2009 were much more severe and that the existing levee provides a 500-year level of protection.



Figure 2. Locations of the Proposed Repair Sites

2.3 Repair In Kind Alternative (Preferred Alternative)

The Repair In Kind Alternative includes repair of the riverward slope and toe of the damage sites along the right bank of the Nisqually River. Approximately 390 feet of the riverward slope and toe would be restored to its pre-damage level of protection at two locations, Site 1 and Site 2 (Figure 2). Drawings of the proposed repairs are shown in Appendix B. The Repair in kind Alternative is the Preferred Alternative.

The repairs would begin with site preparation, preparation of access routes, and preparation of the prism to receive new material. The access routes for these repairs are along existing asphalt (Paradise Road and 387th Avenue Court East) and gravel roads. Storage and staging would occur near the project locations as shown in Figure 3, and would consist of temporary stockpiling and storage of excess rock, supplies, equipment, and vehicles. The embankment would be re-graded either by benching down, or by placing a temporary fill ramp, to provide access to the toe of Site 1. Work on the toe and riverward slope would be conducted from the riverbed to avoid disruption to traffic on Paradise Road. Work would be limited to the areas shown in Figure 3.

Immediately upstream of Site 1, the river would be temporarily diverted into a historic channel using a combination of on-site materials including boulders, large woody debris, gravel, and branches. Temporarily redirecting the river channel from the upstream repair site during construction would require capture and relocation of fish.

At Site 1, riverbed material deposited in the scoured toe area would be excavated, then the buried toe would be reconstructed with 6- to 17-ton stone, incorporating 2- to 4-ton stone as needed to fill voids and provide tight interlocking. The riverward slope would be restored at a ratio of 2H:1V, using 6- to 17-ton stone below 8 feet from the top of bank. The uppermost 8 feet of the slope would be restored at a ratio of 2H:1V using 2- to 4-ton stone. Finally, excavated riverbed material would be replaced over the buried toe up to 2 feet deep. Any remaining excavation spoils would be disposed of at an approved location. Six inches of topsoil would be placed over the upper 10 feet (slope length) of the riverward slope and hydro-seeded. The land located between the road shoulder and the crest of the slope would be resurfaced with up to 6 inches of crushed rock as needed to repair damage from heavy equipment operation. Diversion berms would be removed and river water redirected to the existing channel.

At Site 2, the damaged portion of the levee would be deconstructed by removing, salvaging, and stockpiling remnant riprap and other existing material as practicable. Red alder saplings would be removed from the slope. Work at Site 2 would be accomplished 'in the dry' under current channel configurations, because the active channel is not adjacent to the levee at this location. Streambed materials deposited over the buried toe would be excavated to assess the extent of scour damage and the toe would be reconstructed if necessary using 2- to 4-ton stone. Excavated materials would be stockpiled in approved upland areas or disposed of off-site. The largest riprap would be worked to the toe of the slope, and the slope rock would be supplemented with additional 2- to 4-ton stone as necessary, to reconstruct the 2H:1V slope. If necessary, Class V riprap would be incorporated to fill voids and provide tight interlocking. Excavated material would be utilized within the pre-damage project footprint as much as possible. Surplus or unusable excavated materials would be moved off-site and taken to a commercial disposal facility. Six inches of topsoil would be placed over the upper 10 feet (slope length) of the riverward slope and hydro-seeded. The levee crown would be returned to pre-repair conditions and re-surfaced with crushed rock. Disturbed soil on the levee, access routes, and staging areas would be hydro-seeded with native grasses.

At Site 1, construction activities and staging would occur after 04 September 2017. Construction activities at Site 2 could begin on 01 August 2017. At Site 1, noise-generating activities would be performed only between two hours after sunrise and two hours before sunset through 23 September, then there would be no timing restriction on noise-generating activities. Project repairs would require in-water work, and all proposed in-water work would be completed during the approved in-water work window (16 July – 30 September). The proposed construction effort is expected to take approximately 6-8 weeks total.

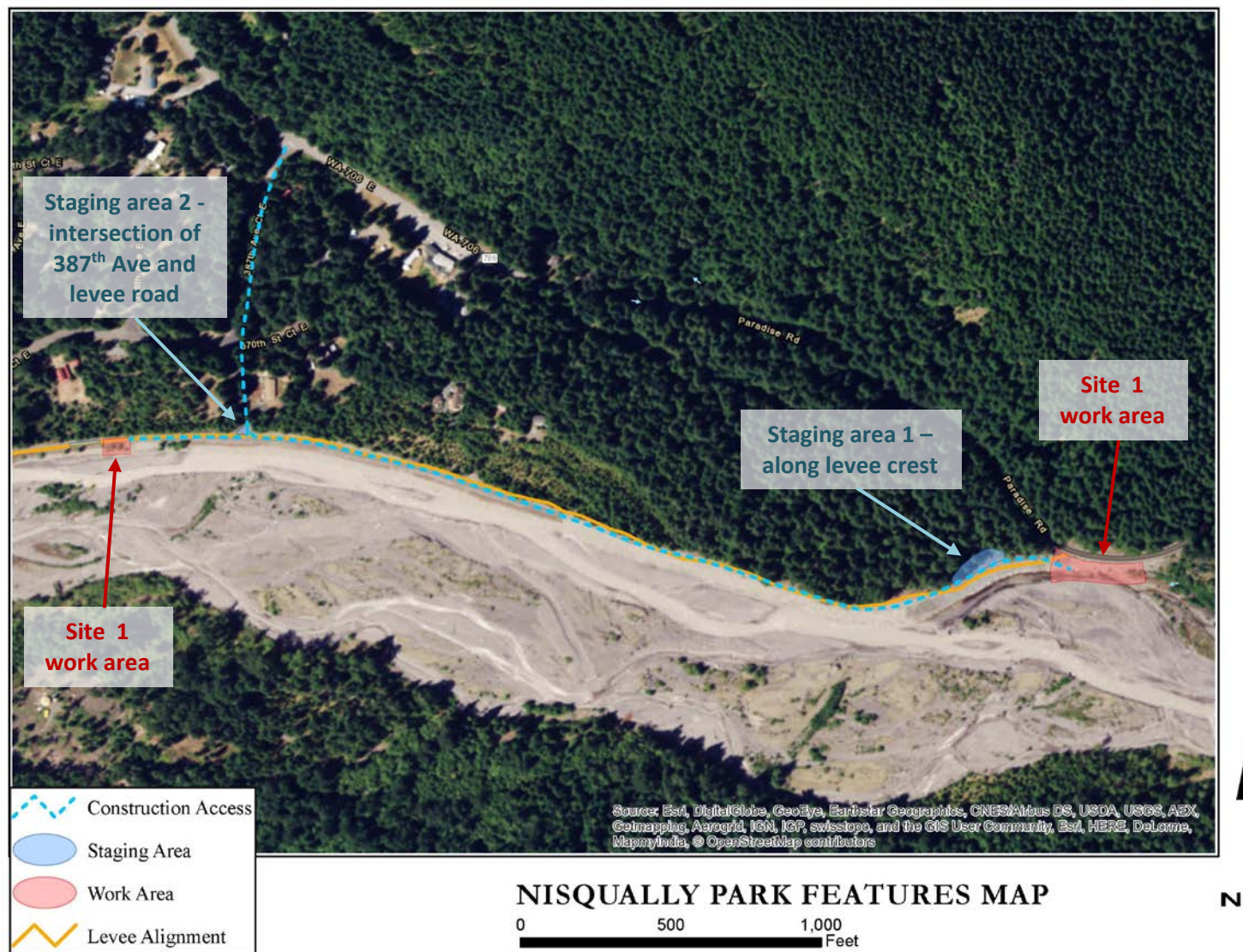


Figure 3. Construction access, staging, and work areas

2.4 Mitigation Features

Measures to mitigate effects of a proposed action are evaluated as part of documentation under NEPA. The following specific measures would be implemented:

- No new access roads would be constructed.
- All excavation and permanent placement of fill would be within the pre-damage bank protection or levee footprint.
- All staging of excavated and fill material, other construction material, fuel, and machinery would be in previously disturbed upland areas except where material is temporarily placed on the riverbed at Site 1.
- Construction sites would be marked to limit vegetation removal and minimize the area disturbed and to avoid impacts to surrounding vegetation.
- Vegetation removal would be limited to the minimum extent required to complete the repairs.
- Equipment used near water would be cleaned prior to construction.
- Only clean material would be placed on the riverward side of the levee. There would be no dumping of material into the river. Rocks would be individually placed or placed by the single bucket load.
- A Fueling and Spill Recovery Plan would be developed prior to construction that would include specific Best Management Practices (BMPs) to prevent spills and to prepare to react quickly should an incident occur.
- Biodegradable hydraulic fluids would be used as appropriate in any portion of equipment working in the water.
- Refueling of machinery would be no closer to the water than the back of the levee, at least 100 feet landward from the riverbank.
- Construction equipment would be regularly checked for drips or leaks. Any leak would be fixed promptly or the equipment would be removed from the project site.
- At least one fuel spill kit with absorbent pads would be on site at all times.
- The work area would be isolated from the flowing water of the river except as necessary to divert the river. The river channel would be temporarily diverted away from the work site during construction at Site 1 to minimize entrainment of sediment and turbidity.
- Drive trains of equipment would not operate in the water.
- Water quality monitoring for turbidity would be performed for a minimum of one day at the start of each new sediment-generating activity. In the event that significant sediment enters the river and high levels of turbidity occur, work would be halted until the situation can be assessed and corrected.
- In-water work would be accomplished only during the approved in-water work window (16 July – 30 September) unless variances are granted by regulating agencies.

- Prior to isolating the in-water work area, a fishery biologist experienced with work-area isolation and competent to ensure the safe handling of fish would conduct or supervise any required capture and release operation following the Dewatering and Fish Capture Protocol given in Appendix A of the 2008 U.S. Army Corps of Engineers' Restoration Programmatic Agreement for the State of Washington. The fish biologist would record species and lengths of any fish killed. That data would be provided to USFWS.
- At Site 1, construction activities and staging would occur after the marbled murrelet and northern spotted owl early nesting seasons, and may commence during the late nesting seasons no earlier than 05 September.
- Northern spotted owl surveys are ongoing, and the National Park Service (NPS) may provide specific locations of owl territories. Currently, there are no known northern spotted owl nest sites within or near the project area. Exclusion zones to reduce impacts to the northern spotted owl are based on the most recent information available and can change within a season as new information is gained. If an active owl territory was identified near the project area, a work exclusion zone would be established or the work would be rescheduled.
- At Site 1, noise-generating activities would be performed between two hours after sunrise and two hours before sunset to lessen disturbance to marbled murrelets flying to and from the nest until the end of nesting season, 23 September.
- After 23 September, at Site 1, all work on National Park land would be conducted Monday through Friday, 7: 00am through 6:00pm.
- At Site 1, the Corps would halt any activities and notify the Park Superintendent upon discovery of threatened or endangered species or archeological, paleontological, or historical findings. All artifacts unearthed would remain the property of Mount Rainier National Park.
- At Site 2, the Corps would halt any activities and notify the State Historic Preservation Officer and affected tribes upon discovery of archeological, paleontological, or historical findings.

3 ENVIRONMENTAL RESOURCES OF CONCERN

3.1 Hydrology, Topography, and Soils

The proposed project is located along the north side of the Nisqually River in the upper river basin at an elevation approximately 2,000 feet above sea level. The Nisqually River's headwaters lie on the southern slopes of Mount Rainier on the Nisqually Glacier. The river's drainage basin at the repair site is approximately 65 square miles. The upper watershed receives more than 70 inches of precipitation annually. The driest months in the upper watershed are June through August and the wettest months are November through January (Pierce County Public Works and Utilities 2012). Floods of the upper Nisqually River result from winter rainstorms, spring snowmelt, and glacial melt. In addition, the Nisqually River experiences mud and debris flows associated with glacial outburst flooding. The upper Nisqually River carries heavy bedloads of cobbles, gravel, and sand, and transports a substantial amount of large woody debris. It is a braided river with multiple, shallow channels that shift often, separated by gravel bars that are exposed except at very high flows. One of the low-flow active channels runs along the toe of the levee at Site 1. Currently, Site 2 abuts a river gravel bar.

The Nisqually River generally traverses a broad plain in the project vicinity, but it is constrained at Site 1 where the river meets the base of a steep hillside; State Route 706 (Paradise Road) runs along the lower hillslope, immediately landward of Site 1 (Figure 1). Floods have damaged the levee and adjacent lands in the past. In the 2006 flood, the Nisqually River washed away approximately 5 acres of land immediately upstream of the Nisqually Park Levee. That flood breached National Park Service levees and destroyed the Sunshine Point Campground as well as part of the State Route 706 (Paradise Road) and buried power cables.

The upper river basin is geologically dominated by andesite (lava) flows, volcaniclastic rocks, and undifferentiated glacial drift. Most soils in the area are moderately permeable (Pierce County Public Works and Utilities 2012).

3.1.1 No Action Alternative

The No Action Alternative would result in a higher risk of additional levee damage and consequent potential for flood damage. In the event of a levee breach during a flood, the active river channel could migrate, changing the hydrology in the immediate area of the breach and throughout the affected reach of the river. With no levee in place, the active floodplain of the river would broaden in this area. The No Action Alternative could lead to emergency flood fight measures during flood events. Those measures could include construction of temporary roads and placement of large rock. In-water work could be required during an emergency repair.

3.1.2 Repair in Kind Alternative

The Repair in Kind Alternative would restore the levee to pre-flood conditions and the previous level of protection. Therefore, the proposed action is not expected to have any appreciable impact on hydrology, topography, or soils.

3.2 Water Quality

The Washington Department of Ecology (WDE) has determined mainstem of the Nisqually River meets standards for clean water (Pierce County Public Works and Utilities 2012). The Washington State Water Quality Assessment 303(d)/305(b) (WDE 2016b) does not list the Nisqually River in the project area as impaired, though a few tributaries upstream are listed with temperature concerns. Table 1 (WDE 2016b) lists the designated uses of the upper Nisqually River.

Table 1. Designated aquatic uses for Upper Nisqually River from Alder Dam to Tahoma Creek

Environment	Freshwater
Aquatic Life Use	Core Summer Salmonids Habitat
Recreation	Extraordinary Primary Contact Recreation
Water Supply	Domestic
	Industrial
	Agricultural
	Stock
Miscellaneous	Wildlife Habitat
	Harvesting
	Commerce/Navigation
	Boating
	Aesthetics

3.2.1 No Action Alternative

Under this alternative, the unrepaired levee could sustain further damage, which could lead to flood fighting measures and placement of fill during high water. This would increase sediment and turbidity in the river—a minor concern during a flood event. Levee failure could allow floodwater to entrain debris, sediment, household goods, chemicals, and waste materials if floodwaters inundated the residential properties. These could include pollutants that could be transported back into the river with substantial impacts to water quality.

3.2.2 Repair in Kind Alternative

The Repair in Kind Alternative would most likely require work in the water at Site 1, but not in flowing water of the river. Diverting the channel from Site 1 for the period of construction would reduce potential for widespread turbidity impacts. Construction would cause minor, temporary, and localized increases in turbidity, limited to the times when the channel is blocked to divert water into a far channel and when the water is redirected into the original channel after construction. Suspension of sediments can increase biochemical oxygen demand and reduce dissolved oxygen levels in the water. In-water work is not anticipated at Site 2. The river, frequently, moves within the river channel and could move again before construction. If this occurs, the Corps would adjust the in-water construction accordingly.

Best management practices, including restrictions on fueling and prevention of fluid leaks from construction equipment, would minimize discharge of pollutants into the river. Construction materials would be obtained from contaminant-free sources. Turbidity would be monitored upstream and downstream of the project site during construction. If turbidity exceeded State water quality standards, particulate-generating activities would be halted until standards were met and construction methods would be changed to avoid future exceedances. Materials used to restore the levee are coarse in texture and tend not to be sediment-generating. Erosion of topsoil from the repaired areas would be prevented by revegetation through seeding; however, heavy rains before the grasses are established could lead to minor sediment in runoff from the project area.

There is minimal vegetation at each repair site; however, vegetation clearing could slightly decrease shading and increase exposure of bare rock to the sun, which could lead to minor, local water temperature increases.

3.3 Vegetation and Wetlands

There are no wetlands at or immediately adjacent to the repair sites. The upstream repair site (Site 1) is nearly devoid of vegetation, with just moss and scattered herbs, shrubs, and tree saplings on the upper slope. Sod covers the embankment between the riprap and the road.

At the downstream repair site (Site 2), the riverward slope supports red alder saplings (approximately 15 with diameters at breast height [dbh] of 1 to 4 inches, and 10 with dbh of less than an inch) and a small amount of Himalayan blackberry (*Rubus armeniacus*; a non-native invasive species). A young conifer forest of Douglas fir (*Pseudotsuga menziesii*) and mountain hemlock (*Tsuga mertensiana*) grows landward of the levee, with some trees rooted in the levee.

Staging Area 1 was cleared during past construction events and presently supports shrubby re-growth. Staging Area 2 is unvegetated.

3.3.1 No Action Alternative

Under the No Action Alternative, no repairs would be constructed so vegetation would not be impacted. Levee failure during a flood event could result in the complete loss of the trees and vegetation currently growing on the levee and potentially the loss of many of the trees in the areas protected by the levee, as has occurred during previous flood events at this site.

3.3.2 Repair in Kind Alternative

Construction of the proposed Repair in Kind Alternative would require the removal of the little vegetation that currently exists at Site 1, Site 2, and Staging Area 1. Topsoil would be placed on the upper slopes of the levee and seeded to mitigate for temporary vegetation loss. This will decrease the time it takes for the site to return to pre-construction habitat functionality. Impacts to vegetation would be short-term and minor.

3.4 Habitat and Wildlife

Section 3.5 below discusses the occurrence and impacts to species listed under the Endangered Species Act (ESA). The Alder and La Grande Dams, located approximately 24.3 and 25.8 miles (respectively) downstream, limit anadromous fish species (including bull trout [*S. confluentus*], discussed in Section 3.5) to the mainstem and tributaries below the dams. Consequently, there are no anadromous fish within the reach of the river adjacent to the project site. During previous repairs of the Nisqually Park Levee, cutthroat trout (*Oncorhynchus clarki*) and sculpin species were documented in the Nisqually River (USACE 2011). Other trout species that could potentially occur within the project area include Dolly Varden (*Salvelinus malma*), steelhead (*O. mykiss*), and eastern brook trout (*S. fontinalis*).

The area surrounding the levee is habitat for large mammals such as black-tailed deer (*Odocoileus hemionus columbianus*), elk (*Cervus elaphus*), black bear (*Ursus americanus*), gray wolf (*Canis lupus*), coyote (*Canis latrans*), cougar (*Felix concolor*), and wolverine (*Gulo gulo*). Smaller mammals also likely inhabit the riparian area, such as beaver (*Castor canadensis*), mink (*Mustela vison*), river otter (*Lutra canadensis*), muskrat (*Ondatra zibethicus*), bobcat (*Lynx rufus*), Douglas squirrel (*Tamiasciurus douglasii*), porcupine (*Erethizon dorsatum*), and bats (Pierce County Public Works and Utilities 2012; USACE 2011).

Due to the presence of tree, shrub, and herbaceous vegetation layers and the presence of downed wood and snags, birds that likely inhabit the riparian areas along the river include pileated

woodpecker (*Dryocopus pileatus*), downy woodpecker (*Picoides pubescens*), hairy woodpecker (*Picoides villosus*), barred owl (*Strix varia*), great-horned owl (*Bubo virginianus*), neo-tropical migratory songbirds, and raptors such as goshawk (*Accipiter gentilis*) and red tailed hawk (*Buteo jamaicensis*) (USACE 2011). The riparian area also likely supports birds such as great blue heron (*Ardea herodias*) and belted kingfisher (*Ceryle alcyon*) that feed on fish and amphibians in the floodplain of the river.

Resident amphibians likely to inhabit the shoreline area include red-legged frog (*Rana aurora*), Pacific chorus frog (*Hyla regilla*), long-toed salamander (*Ambystoma macrodactylum*), Larch Mountain salamander (*Plethodon larselli*), and rough skinned newt (*Taricha granulosa*). Tailed frogs (*Ascaphus truei*) have been recorded within the extremely cold, upper reaches of the Nisqually River, more than five miles upstream of the levee (USACE 2011). Resident reptiles include the garter snake (*Thamnophis sirtalis*) and possibly Northern alligator lizard (*Gerrhonotus coeruleus*).

3.4.1 No Action Alternative

The No Action Alternative could result in continued erosion of the levee, especially in a flood event, and could leave the levee vulnerable to continued damage and breaching. A breach would result in inundation and potentially further erosion behind the levee with associated damage to forest habitat, severe turbidity, and potential for entrainment of pollutants by the river. Turbidity might not differ from that of the ambient floodwater, but other pollutants could adversely affect aquatic organisms. A flood fight would likely be undertaken to prevent a breach and could require in-water work during periods outside of the in-water work window and likely perpetuate the habitat conditions in the long-term. In the absence of emergency action to prevent a levee breach, over the long-terms conversion of forest to river channel would represent a long-term loss of habitat to forest-dwelling species, while it would likely provide a benefit to aquatic habitat through restoration of natural channel- and habitat-forming processes.

3.4.2 Repair in Kind Alternative

The primary impacts to fish and wildlife would be minor and temporary increases in turbidity, noise, vibration, air pollution, and human activity, which may displace fish and wildlife during construction. Potential effects would only occur during construction. Fish could also be harmed during the capture and relocation process when the river is being diverted into a historic river channel and again when redirecting the river to the current channel. When redirecting the river channel, turbidity may increase temporarily and in the immediate area within Nisqually River, which may disrupt fish use of the area.

Construction vehicles and heavy equipment used during the repairs would temporarily produce noise, vibration, and air pollution that could affect fish and wildlife. Construction of the buried toe at the upstream site would be accomplished during the established in-water work window (16 July to 30 September), so the potential disruption of incubating fish eggs would be minimized. The Corps would coordinate with resource agencies if instream work were required outside the 16 July to 30 September construction window. Repair at Site 2 could be accomplished without working in the water. Removal of vegetation at the downstream site and at Staging Area 1 may displace wildlife and slightly reduce in-water shade and organic input to the river. Confining work to the existing levee footprint plus temporary work areas on the braided riverbed would minimize potential for impacts to terrestrial mammals, birds, amphibians, and reptiles. Effects would be minor, localized, and of short duration.

3.5 Threatened and Endangered Species

Section 7(a)(2) of the ESA of 1973 requires that federally funded, constructed, permitted, or licensed projects take into consideration impacts to federally listed and proposed threatened or endangered species. Four species protected under the ESA (Table 2) may occur in the project vicinity.

Table 2. Species listed under ESA that potentially occur in the project vicinity

Species	Listing	Critical Habitat
Marbled Murrelet <i>Brachyramphus marmoratus</i>	Threatened	Designated
Northern Spotted Owl <i>Strix occidentalis caurina</i>	Threatened	Designated
Coastal-Puget Sound Distinct Population Segment (DPS) Bull Trout <i>Salvelinus confluentus</i>	Threatened	Designated
Gray Wolf <i>Canis lupus</i>	Endangered	Not Designated

Other listed species may occur in Pierce County, but are unlikely to occur in the action area and thus would not be affected by the proposed actions. This is due to lack of suitable habitat, or because their presence is so transitory that any temporary effects to these species from construction activities would not be perceived as unusual, cause disruption of behavior, or lead to measurable reductions in their prey base. These species include Canada lynx (*Lynx canadensis*), grizzly bear (*Ursus arctos horribilis*), and yellow-billed cuckoo (*Coccyzus americanus*). Yellow-billed cuckoo is a medium-sized bird that breeds in large blocks of riparian habitat, particularly woodlands with cottonwoods and willows. No deciduous forested riparian habitat is located along the Nisqually River in the project vicinity, no riparian forest vegetation would be affected by the proposed action, and there have been no recent sightings of yellow-billed cuckoo in the project vicinity. Therefore, this species would not be affected and will not be discussed further.

Within Mount Rainier National Park, approximately 23,000 acres of forested area are defined as suitable marbled murrelet nesting habitat. Within the park, the presence of murrelets has been documented within four river corridors: the Carbon, Mowich, Puyallup, and Nisqually rivers (NPS 2008). Repeated radar surveys along the Nisqually River at the Kautz Creek and Tahoma Creek confluences have detected very few (mean 4.7 per day, range 1-12) marbled murrelet targets, suggesting that part of the Nisqually River drainage supports few marbled murrelets (Hamer Environmental 2000 and ABR, Inc. 2001-2009, as cited in NPS 2012). No active nests have been identified within the park; however, nest surveys have been few and limited to the Carbon River drainage. The forest near Site 1 is likely suitable habitat for marbled murrelets because it is dominated by mature Douglas fir. Although critical habitat is not designated for murrelets at the proposed repair sites, at Site 1 this is largely a result of no critical habitat designated within Mount Rainier National Park because these lands are already federally protected as a national park. Gifford Pinchot National Forest is located along the left bank of the Nisqually River near Site 1 and it contains areas designated as critical habitat approximately 0.5 mile from the project site. During a May 2011 site visit, four platform trees suitable for murrelet nesting were located at the upstream end of the levee that is adjacent to Site 1 and additional platform trees were noted further inland in the stand of trees.

The Douglas fir forest in the project vicinity is also suitable spotted owl habitat. The nearest known spotted owl territory is centered approximately 2.2 miles away. Calling surveys have been conducted annually along the roadway adjacent to the proposed project, and none have detected use of the area

by spotted owls. Critical habitat is not designated at the proposed repair sites; however, the Gifford Pinchot National Forest is located along the left bank of the Nisqually River near Site 1, portions of which are designated as critical habitat.

Bull trout have not been documented to occur in the upper Nisqually River watershed (NPS 2012; WDFW 2016b). Critical habitat for Coastal-Puget Sound bull trout is not designated in the project area. In Mount Rainier National Park, bull trout are known to exist in the White, West Fork, Carbon, Mowich, and Puyallup rivers and their tributaries. Spawning occurs in the upper reaches of the Carbon River basin where higher elevations produce cool temperatures. Bull trout spawning in the Carbon River basin generally occurs in September (NPS 2008). Bull trout rear in the upper Puyallup, Mowich, Carbon, upper White, West Fork White, and Greenwater rivers (NPS 2008). No suitable habitat is present within the project area.

Mount Rainier National Park contains preferred habitat and prey for gray wolves; however, no gray wolves have been detected within the project area. No critical habitat has been designated for gray wolf. Numerous reported observations of gray wolves have occurred in the park in the last 20 years; however, none has been confirmed by State or Federal biologists (NPS 2008). Carnivore surveys in the park, including snow tracking and camera stations between 2000 and 2002, did not find evidence of wolves utilizing the park (Reid et al. 2010, as cited in NPS 2012). In addition, recent surveys conducted by Washington Department of Fish and Wildlife (WDFW) have not observed gray wolves in the Southern Cascades where the project is located (Becker et al. 2013 and 2016). No documented wolf packs are present in the project area and no known gray wolf den or rendezvous sites have been identified in the project vicinity (WDFW 2016a).

3.5.1 No Action Alternative

The No Action Alternative could result in continued erosion of the levee, especially in a flood event, and could leave the levee vulnerable to continued damage and breaching. A breach would result in inundation behind the levee with associated severe turbidity and potential pollution impacts to the river. A levee breach could also allow flood waters to destroy forests in the area protected by the levee, potentially affecting the availability of murrelet and owl habitat. A flood fight would likely be undertaken to prevent a breach and could require in-water work during periods outside of the in-water work window. If emergency actions occurred in the spring at the beginning of nesting season, these actions could have greater impact on marbled murrelets and northern spotted owl than a scheduled repair.

3.5.2 Repair in Kind Alternative

The Corps sent a Biological Assessment of the impacts of the proposed repairs to the USFWS on 17 November 2016, requesting informal consultation.

The Repair in Kind Alternative would maintain the Nisqually River and its adjacent habitat as it existed prior to the flood damage. The Corps evaluated potential effects to threatened and endangered species in the Biological Assessment and made the determinations listed below. BMPs and other mitigation measures, as discussed above in Section 2.4, would be employed during construction to minimize the impact to fish and wildlife and their habitat.

The Repair in Kind Alternative ***may affect, but is not likely to adversely affect marbled murrelet and its designated critical habitat.*** This determination is made based upon the following reasons: 1) marbled murrelets have been documented to be present along Nisqually River, 2) suitable habitat is present in the action area, 3) construction noise and activity could disrupt marbled murrelets if they

are present in the suitable habitat area adjacent to Site 1, 4) no mature trees would be removed as part of the project, 5) no active nests have been identified in Mount Rainier National Park, and 6) construction activities at Site 1 would be restricted to later nesting season (5 September) and daily work restriction of two hours before sunrise and two hours after sunset to lessen disturbance to marbled murrelets.

The Repair in Kind Alternative ***may affect, but is not likely to adversely affect northern spotted owl and its designated critical habitat.*** This determination is made based upon the following reasons: 1) northern spotted owls have been documented to be present along Nisqually River, 2) suitable habitat is present in the action area, 3) construction noise and activity could disturb northern spotted owls if they are present in the suitable habitat area adjacent to Site 1, 4) no trees would be removed as part of the project, 5) no active nests have been identified within the action area, and 6) construction activities would be restricted to later nesting season to lessen disturbance to northern spotted owls.

The Repair in Kind Alternative ***will have no effect on Coastal-Puget Sound DPS bull trout.*** This determination is based upon the following reasons: 1) bull trout are not documented to occur in the Nisqually River upstream of the LaGrande and Alder dams (which are well downstream of this project area), 2) in-water work would be conducted during summer months, 3) the project is not expected to alter river temperatures or riparian habitat function, and 4) the Repair in Kind Alternative would maintain the pre-flood status quo of the sites.

The Repair in Kind Alternative ***will have no effect on the gray wolf.*** This determination is made based upon the following reasons: 1) gray wolves are very rare in the Southern Cascades and presence of any individuals in the project area is very unlikely, 2) suitable habitat is present within the project area, but no active den or rendezvous sites are documented to be present, 3) no mature trees or other vegetation would be removed in the forest adjacent to the levee, and 4) no foraging or denning habitat would be affected.

3.6 Cultural Resources

The Corps has coordinated its environmental review of 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. Historic properties are those cultural resources that are eligible for inclusion or listed on the National Register of Historic Places. The Corps has determined and documented the area of potential effect (APE) for both direct and indirect effects, as required at 36 CFR § 800.4 of the regulations implementing Section 106.

The APE for the Nisqually Park Levee cultural survey includes two levee repair areas, three staging areas and an access road. The total APE is 3.95 acres. The Washington State Historic Preservation Officer (SHPO) agreed with our determination of the APE on 27 February 2017.

A records search and literature review was conducted of information on file at the Washington State Department of Archaeology and Historic Preservation (DAHP) and in the records of Mount Rainier National Park (MRNP). Using the Washington Information System for Architectural and Archaeological Records Data online database, one National Register of Historic Places (NRHP) district was identified within the APE. Site 45PI625 is the Mount Rainier National Park Historic District. A file search indicated there are 31 buildings and structures (45 years or older), 15 archaeological sites, and an additional NRHP listed historic district within a half mile area surrounding the APE. There are no NRHP determinations of eligibility for any of the buildings. Of the archaeological sites, one has been determined officially not eligible for inclusion in the NRHP,

seven are potentially eligible, and seven have no determination of NRHP eligibility. One of these sites was the Sunshine Point CCC Campground (no Smithsonian site number given), which was destroyed by flooding in 2009. The site is not in the DAHP database but is on file at MRNP. The second district (45DT152) is the Nisqually Entrance Historic District and is in the Washington Heritage Register.

On 24 August 2016, archaeologists conducted a pedestrian visual survey of the entire project APE. One structure older than 50 years of age was identified and documented during the survey: the Nisqually Park Levee. The results of four earlier surveys also were reviewed. The levee was determined to be not eligible for inclusion in the NRHP because although the property is associated with flood control, a significant theme contributing to broad patterns of local and regional history under Criterion A, it has been periodically repaired and rebuilt and does not retain sufficient integrity to demonstrate its connection to that time period (c. 1960). Research did not identify any associations with any persons significant to local, state, or national history, and the levee is recommended as not significant under Criterion B for association with significant persons. The levee is also not significant under NRHP Criterion C. The earthen and stone levee does not embody distinctive characteristics of a type, period, or method of construction. Earthen levees protect against erosion throughout the Northwest and this specific levee is not known for any significant engineering design or achievements. The levee is recommended not eligible under Criterion D as further work on the levee is unlikely to provide significant information contributing to our knowledge of local, state, or national history.

Based on the results of previous surveys and the current survey, there are no NRHP-eligible historic properties in the APE.

3.6.1 No Action Alternative

Under this alternative, the Corps would not repair the levee and the threat of future levee failure would increase. Future flooding events or the emergency flood fight actions could result in the erosion or destruction of cultural resources within the floodplain protected by the levee.

3.6.2 Repair in Kind Alternative

The Repair in Kind Alternative would not affect any identified historic or other cultural resources. The project construction management plan (CMP) requires the following action:

If artifacts are found anytime during excavation, all construction will cease in that location. Any construction activities that may impact the artifacts will not occur until approved by the project manager and Cultural Resources Coordinator.

Additional specific measures for protection of artifacts and other potential cultural resources would be required in the CMP and the construction contract. The Corps has determined that this undertaking would have *no effect on historic properties*.

3.7 Air Quality and Noise

The Environmental Protection Agency's (EPA) Clean Air Act sets National Ambient Air Quality Standards (NAAQS) for several criteria pollutants including ozone, lead, carbon monoxide, nitrogen oxides, sulfur dioxide, and particle pollutants with diameters less than 10 and 2.5 microns. Air quality in the upper Nisqually River basin meets EPA's standards for all air quality parameters (WDE 2016b).

Ambient noise levels are not elevated at the proposed levee repair sites. Noise is generally limited to traffic along State Route 706, local traffic, and sounds of the natural environment.

3.7.1 No Action Alternative

The No Action Alternative would have no direct effect on air quality or noise. Emergency actions may be required to protect lives and property in the event of a flood. These actions would likely have similar air emissions and noise effects as the Repair In Kind Alternative. Effects to air quality and noise would be temporary and noise would be within the range of intensity produced by on-going activities in the area.

3.7.2 Repair in Kind Alternative

Construction vehicles and heavy equipment used during the proposed construction would temporarily and locally increase gasoline and diesel exhaust fumes. Residents and tourists traveling through the project area might notice an increase in gasoline or diesel exhaust fumes. The small area of construction and the short duration of the work would limit the impacts to air quality. The activity would constitute routine repair of an existing facility, generating an increase in direct emissions of a criteria pollutant or its precursors that would clearly be *de minimis* and would therefore be exempted by 40 Code of Federal Regulations (CFR) Section 93.153(c)(2)(iv) from the conformity determination requirements. Emissions generated by the construction activity would be minor and short-term. Unquantifiable but minor exacerbation of effects of greenhouse gas emissions on global climate change would occur.

Noise would increase during construction; however, the effects of construction noise would be consistent with typical background noise in the area. Construction would be during daylight hours. Noise impacts would be temporary, local, and minor.

3.8 Utilities, Public Services, Land Use, and Recreation

The levee provides protection to approximately 700 acres with 467 structures, including residences (occupied both seasonally and year-round), historic landmarks, hotels, the main entrance into Mount Rainier National Park, and associated utilities and public infrastructure including State Route 706. The upstream repair site is within Mount Rainier National Park. Generally, 1.5 to 2 million people visit Mount Rainier National Park each year. Recreational opportunities within the area include sightseeing, wildlife observation, mountain/rock climbing, camping, photography, hiking, fishing, and boating.

3.8.1 No Action Alternative

Under the No Action Alternative, the current damaged state of the levee would continue, with a diminished level of flood protection and a higher risk of levee breach and resulting flood damage to utilities, public infrastructure, homes, and national park facilities and disruption of land uses including recreation. If flood fights were effective, impacts to utilities, public services, existing land uses, and recreation would be minimal from the No Action Alternative. If flood fights were not implemented in time or were not sufficient, a breach in the levee could cause substantial impacts to public infrastructure and services, including interrupting travel of visitors to the national park. If unabated, repeated flooding would also require changes in zoning, permitted construction, and other functions related to land use behind the levee.

3.8.2 Repair in Kind Alternative

Implementation of the Repair in Kind Alternative would provide long-term flood risk reduction to public infrastructure, utilities, and land use within the protected area of the levee and the recreation activities those support. The road into Mount Rainier National Park is on the levee crest at the upstream repair site. Most work at Site 1 would be accomplished from the riverbed to reduce disruption of park traffic. During repairs, there would be a temporary and localized increase and disruption of traffic by construction vehicles, including workers traveling to and from the site and the transport of materials. Flaggers and signs would be used, as needed, to safely move traffic around the construction site. Impacts to utilities, public infrastructure, land use, and recreation would be short-term and minor.

4 UNAVOIDABLE ADVERSE EFFECTS

Unavoidable adverse effects associated with the Preferred Alternative would be: (1) a possible temporary and localized increase in turbidity in Nisqually River which could disrupt fish use of the area; (2) temporary and localized increase and disruption of traffic by construction vehicles including workers traveling to and from the site and the transport of materials; (3) temporary and localized increase in noise, vibration, air pollutant emissions, and human activity which may disturb nearby residents and fish and wildlife in the area; and (4) removal of tree saplings and shrubs from within the proposed construction area. These unavoidable impacts would be short in duration, minor, and local. Mitigation measures, as described in Section 2.4, would be implemented during construction to minimize adverse project effects to the surrounding natural and built environment.

5 CUMULATIVE EFFECTS

NEPA defines cumulative effects as the impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions in the project vicinity, regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR §1508.7).

The levee was originally built by local interests in the 1960s to protect State Route 706 and residential properties. The Corps rehabilitated portions of the levee in 1977, 2004, and 2011, and other parties have repaired it in other years. In 1977, 1,086 feet of levee were repaired, including replacement of the levee in two breach locations and replacement of Class V armor rock at a scour location. In 2004, the Corps completed repairs on 800 feet at the western end of the levee. At that time the riverward face was re-sloped to 2H:1V and a 3-foot blanket of Class V riprap armor was placed. A toe of Class V riprap was also constructed with two feet of toe rock buried and five feet of launchable toe placed. A flood in November 2008 required 1,700 feet of levee repairs. In September 2010, Pierce County completed the first 600 feet of the Federal project at the western end of the damage area. During the Pierce County repairs, an 800-foot segment of river was diverted where fish salvage efforts moved approximately 71 cutthroat trout and 95 sculpin. In 2011, the Corps completed the remaining 1,100 linear feet of repairs along the levee.

The actions with the largest potential for cumulative impacts in this area are continuation of residential construction on properties protected by the levee and the consequent loss of native vegetation and wildlife habitats as development continues. There are no known plans to raise the levee to provide an increased level of flood protection or to extend the levee beyond its current footprint. The project maintains the existing level of flood protection. In the event of winter storms

that damages other sections of the levee, Pierce County would likely flood fight to prevent damage to adjacent properties.

While the original construction of the levee removed a portion of the floodplain from the active influence of the river, the proposed repair of the levee would not change the condition of the floodplain, the river, or their functions relative to the condition before the levee was damaged. The harm to the function of the river and its floodplain would not be increased by repair of the levee, but rather would be maintained at its current level.

The proposed action addressed in this EA would maintain but not add to loss of the active floodplain. When evaluated in the context of past, present, and reasonably foreseeable actions, the proposed project would not result in significant cumulative effects.

6 COORDINATION

A Notice of Preparation for the proposed rehabilitation of the levees (EN-ER-16-9) was issued on 25 October 2016 for a 30-day public review. No comments were received.

7 ENVIRONMENTAL COMPLIANCE

7.1 Federal Statutes

7.1.1 American Indian Religious Freedom Act

The American Indian Religious Freedom Act of 1978 (42 U.S.C. 1996) establishes protection and preservation of Native Americans' rights of freedom, belief, expression, and exercise of traditional religions. Courts have interpreted the American Indian Religious Freedom Act to mean that public officials must consider Native Americans' interests before undertaking actions that might impact their religious practices, including impact on sacred sites.

The proposed work is not expected to have any effect upon Native Americans' rights of freedom of belief, expression, and exercise of traditional religions.

7.1.2 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d) prohibits the taking, possession, or commerce of bald and golden eagles, except under certain circumstances. Amendments in 1972 added to penalties for violations of the Act or related regulations.

No take of either bald or golden eagles is likely through any of the actions discussed in this EA. Bald and golden eagles are uncommonly or occasionally seen in Mount Rainier National Park and construction would occur only during the end of the nesting period when young are fledging. No impacts are expected; however, if active nests were observed closer than a quarter mile from construction, consultation with the USFWS would occur and, depending on their advice, a plan for the eagles would be developed to ensure that impacts to the nesting pair were minimized.

7.1.3 Clean Air Act

The Clean Air Act requires states to develop plans, called State Implementation Plans (SIP), for eliminating or reducing the severity and number of violations of National Ambient Air Quality Standards while achieving expeditious attainment of the NAAQS. The Act also requires Federal actions to conform to the appropriate SIP. An action that conforms with a SIP is defined as an action that will not: (1) cause or contribute to any new violation of any standard in any area; (2) increase the frequency or severity of any existing violation of any standard in any area; or (3) delay timely

attainment of any standard or any required interim emission reductions or other milestones in any area.

The Corps has determined that emissions associated with the project would not exceed EPA's *de minimis* threshold levels (100 tons/year for carbon monoxide and 50 tons/year for ozone) or affect the implementation of Washington's Clean Air Act implementation plan and, as the project constitutes routine facility repair generating an increase in emissions that is clearly *de minimis*, a conformity determination is not required, pursuant to 40 CFR 93.153 (c)(2)(iv).

7.1.4 Clean Water Act, Section 401 and 404

The Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.) is more commonly referred to as the Clean Water Act (CWA). The CWA is the primary legislative vehicle for Federal water pollution control programs and the basic structure for regulating discharges of pollutants into waters of the United States. The CWA was established to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." The CWA set goals to eliminate discharges of pollutants into navigable waters, protect fish and wildlife, and prohibit the discharge of toxic pollutants in quantities that could adversely affect the environment. The many sections of the CWA address different types of discharges into waters of the United States. Three sections of the CWA could be pertinent to the proposed action: Section 401 covers water quality standards and evaluation of the effects discharges would have on those standards, Section 402 addresses stormwater runoff from disturbed areas, and Section 404 addresses discharge of fill.

Sections 404 and 401: Placement of fill riprap into the Nisqually River (waters of the U.S.) may trigger Section 404, which applies to the discharge of dredged or fill material into waters of the U.S. Activities regulated under Section 404 would also trigger application of evaluation and compliance with Section 401.

The proposed project at Site 1 would entail discharge of fill material into waters of the United States and would be evaluated for substantive compliance with guidelines promulgated by the Environmental Protection Agency under authority of Section 404(b)(1) of the CWA. The project at Site 1 would include minor deviations to the pre-flood condition in that the repair would include use of larger rock on the slope and in the buried toe and could require fill to temporarily divert the Nisqually River during construction. The project would result in minor deviations in the footprint of the levee compared to the pre-damage condition. The provisions of the regional conditions under Nationwide Permit (NWP) 3 allow for minor deviations in the design for the repair and maintenance of existing structures pursuant to the Corps CWA Section 404 permitting program. The Corps has concluded that Site 1 is functional analogous to NWP 3 to comply with Section 404 and the general Water Quality Certification issued by the US Environmental Protection Agency for proposals meeting the criteria of NWP 3, under Section 401 of the Clean Water Act. Site 1 is completely located on Federal land, Mount Rainier National Park.

CWA regulations exempt some activities from section 404 and 401 permit requirements. The exemption at 33 USC 1344(f)(1)(B) and 33 CFR 323.4(a)(2) applies at Site 2 because all riverward work at the repair site would be conducted on a currently serviceable structure (i.e., the levee) within the pre-damage levee footprint and the character, scope, and size of the resulting structure would not change as compared to the original fill design. Therefore, the proposed repairs at Site 2 do not require a 404 (b)(1) evaluation nor a Section 401 water quality certification.

Stormwater runoff from ground disturbed during the levee rehabilitation could carry sediment into the river. Regulations require that operators must seek coverage under the Construction Stormwater General Permit for clearing, grading, or excavation of one or more acres. The 390-foot length of levee repair and the land needed to install the earthen river diversion would be expected to disturb less than 1 acre of land; therefore, a Section 402 permit would not be required.

7.1.5 Coastal Zone Management Act

Under the Coastal Zone Management Act of 1972 (16 USCA 1451-1465), Sec. 307(c)(1)(A), “[e]ach Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs.” The Corps has determined that the proposed rehabilitation activities comply with the policies, general conditions, and activities as specified in the Pierce County Shoreline Management Use Regulations. The proposed action is consistent to the maximum extent practicable with the State of Washington Coastal Zone Management Program.

A determination of consistency was provided to WDE for their review on 26 October 2016. Concurrence from WDE of the project’s consistency with the enforceable policies of the Washington State Coastal Zone Management Program was received 13 December 2016 (Appendix D).

7.1.6 Endangered Species Act

The Endangered Species Act (16 U.S.C. 1531-1544), amended in 1988, establishes a national program for the conservation of threatened and endangered species of fish, wildlife, and plants and the habitat upon which they depend. Section 7(a) of the ESA requires that Federal agencies consult with USFWS and the NMFS, as appropriate, to ensure that proposed actions are not likely to jeopardize the continued existence of endangered or threatened species or to adversely modify or destroy designated critical habitats.

As a part of the coordination, a Biological Assessment was sent to the USFWS on 17 November 2016, requesting concurrence that the proposed levee repair will have *no effect* on gray wolf or Coastal-Puget Sound DPS bull trout and that the project *may affect, but is not likely to adversely affect*, marbled murrelet and the northern spotted owl and their respective designated critical habitat. In a letter dated 20 March 2017, the USFWS concurred with the Corps’ determination (Appendix E).

7.1.7 Federal Water Project Recreation Act

In the planning of any Federal navigation, flood control, reclamation, or water resources project, the Federal Water Project Recreation Act, as amended (16 U.S.C. 460(l)(12) et seq.), requires that full consideration be given to opportunities that the project affords for outdoor recreation and fish and wildlife enhancement. The Act requires planning with respect to development of recreation potential. Projects must be constructed, maintained, and operated in such a manner if recreational opportunities are consistent with the purpose of the project.

This EA assesses impacts of alternative actions on recreation. Impacts of the proposed action to recreation would be short-term in nature and less than significant.

7.1.8 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801 et. seq.) requires Federal agencies to consult with NMFS on activities that may adversely affect Essential Fish Habitat (EFH). The objective of an EFH assessment is to determine whether the proposed

action(s) “may adversely affect” designated EFH for relevant commercial or Federally- managed fisheries species within the proposed action area. The assessment describes conservation measures proposed to avoid, minimize, or otherwise offset potential adverse effects to designated EFH resulting from the proposed action.

The Nisqually River is designated EFH for Chinook, coho, and pink salmon; however the Alder and La Grande dams restrict upstream passage of anadromous fish. These dams are downstream of the project area and as such the project area does not contain EFH and no effect to EFH downstream would be expected.

7.1.9 National Environmental Policy Act

NEPA (42 U.S.C. 4321 et seq.) requires that Federal agencies consider the environmental effects of their actions. It requires that an Environmental Impact Statement (EIS) be included in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment. The EIS must provide detailed information regarding the proposed action and alternatives, the environmental effects of the alternatives, appropriate mitigation measures, and any adverse environmental effects that cannot be avoided if the proposal is implemented. Agencies are required to demonstrate that these factors have been considered by decision makers prior to undertaking actions. Major Federal actions determined not to have a significant adverse effect on the quality of the human environment may be evaluated through an EA.

This EA evaluates the environmental effects of the proposed Nisqually Park Levee repairs. The following discussion assesses how the Corps has complied with NEPA’s requirements. In accordance with NEPA, Federal projects are required to disclose potential environmental impacts and solicit public comment. A Notice of Preparation for the Rehabilitation of the Nisqually Levee was published on 25 October 2016, with an expiration date of 25 November 2016. No comments were received.

This EA has been prepared pursuant to NEPA Sec. 102(C). Effects on the quality of the human environment as a result of the proposed project are anticipated to be less than significant. The EA has incorporated any necessary and applicable modifications to the scope and/or nature of the project, any effects to the human environment resulting from these modifications, the procedures and practices used to implement the project, and/or the type and extent of compensatory mitigation associated with the project. Accompanying this EA is a Finding of No Significant Impact (FONSI).

7.1.10 National Historic Preservation Act

Section 106 of the National Historic Preservation Act requires that a federally assisted or federally permitted project account for the potential effects on sites, districts, buildings, structures, or objects that are included in or eligible for inclusion in the National Register of Historic Places. A finding of No Historic Properties Affected was submitted to the Washington SHPO in a letter dated 21 February 2017. The SHPO agreed with our findings on 27 February 2017 (Appendix C).

7.1.11 Treaty Rights

In the mid-1850s, the United States entered into treaties with nearly all of the Native American tribes in the territory that would become Washington State. These treaties guaranteed the signatory tribes the right to "take fish at usual and accustomed grounds and stations . . . in common with all citizens of the territory" [U.S. v. Washington, 384 F. Supp. 312 at 332 (WDWA 1974)]. In U.S. v. Washington, 384 F. Supp. 312 at 343 - 344, the court resolved that the Treaty tribes had the right to

take up to 50 percent of the harvestable anadromous fish runs passing through those grounds, as needed to provide them with a moderate standard of living (Fair Share). Over the years, the courts have held that this right comprehends certain subsidiary rights, such as access to their "usual and accustomed" fishing grounds. More than *de minimis* impacts to access to usual and accustomed fishing areas violates this treaty right [Northwest Sea Farms v. Wynn, F.Supp. 931 F.Supp. 1515 at 1522 (WDWA 1996)]. In U.S. v. Washington, 759 F.2d 1353 (9th Cir 1985), the court indicated that the obligation to prevent degradation of the fish habitat would be determined on a case-by-case basis. The Ninth Circuit has held that this right also encompasses the right to take shellfish [U.S. v. Washington, 135 F.3d 618 (9th Cir 1998)].

- The work would not interfere with access to usual and accustomed fishing and gathering areas
- The work would not cause the degradation of fish runs in usual and accustomed fishing grounds or with fishing activities or shellfish harvesting and habitat
- The work would not impair the Treaty tribes' ability to meet moderate living needs

The Corps notified the Nisqually Indian Tribe, Muckleshoot Indian Tribe, Puyallup Tribe of Indians and the Squaxin Island Tribe about the proposed action on 22 November 2016, requesting that they identify properties to which they may attach religious or cultural significance or other concerns with historic properties that may be affected.

7.2 Executive Orders

7.2.1 Executive Order 11990, Protection of Wetlands

Executive Order 11990 encourages Federal agencies to take actions to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands when undertaking Federal activities and programs. No wetlands exist within the proposed construction area. The proposed project is consistent with this order.

7.2.2 Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations

Executive Order 12898, dated February 11, 1994, requires Federal agencies to consider and address environmental justice by identifying and assessing whether agency actions may have disproportionately high and adverse human health or environmental effects on minority or low income populations. Disproportionately high and adverse effects are those effects that are predominately borne by minority and/or low income populations and are appreciably more severe or greater in magnitude than the effects on non-minority or non-low income populations.

The project does not involve siting a facility that would discharge pollutants or contaminants, so no human health effects would occur. The proposed action would not have a disproportionate adverse impact on low-income or minority populations since the preferred alternative would restore the pre-existing level of flood protection to the floodplain. Therefore, the project complies with this order.

7.2.3 Executive Order 11988, Floodplain Management

Executive Order 11988 requires Federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy of the floodplain, and to avoid direct and indirect support of floodplain development where there is a practicable alternative. In accomplishing this objective, "each agency shall provide leadership and shall take action to reduce the risk of flood

loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by flood plains.”

By Corps policy (Engineering Regulation 500-1-1), the provisions of Executive Order 11988 are normally not applicable to the repair of flood control works to the pre-disaster condition, as the repair actions do not directly affect either the modification or occupancy of floodplains, and do not directly or indirectly impact floodplain development. The proposed project does not constitute a major rehabilitation project, require extensive engineering and design, or significantly change the project footprint and therefore is not required to be evaluated for its impact on the floodplain.

8 CONCLUSION

Based on the above analysis, the proposed Rehabilitation of the Nisqually Park Levee is not a major Federal action significantly affecting the quality of the human environment, and therefore does not require preparation of an environmental impact statement.

9 REFERENCES

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10 PREPARERS

Hannah Hadley, Environmental Coordinator, U.S. Army Corps of Engineers
Bonnie Easley-Appleyard, Environmental Scientist, HDR, Inc.

APPENDIX A: PHOTOGRAPHS OF THE DAMAGED LEVEE



Photograph 1: Nisqually River, looking upstream toward Site 1.



Photograph 2: Site 1, looking upstream at damage (1).



Photograph 3: Site 1, damaged slope.



Photograph 4: Site 2 damage. Voids in face and slope toe.



Photograph 5: Site 2, looking upstream at damage.



Photograph 6: Site 2, looking upstream.



Photograph 7: Site 2, looking downstream at damage.

APPENDIX B: DESIGN DRAWINGS

[illegible]

**FY16 LEVEE REHABILITATION
NISQUALLY RIVER
NISQUALLY PARK LEVEE NSQ-01-16**

PIERCE COUNTY WA



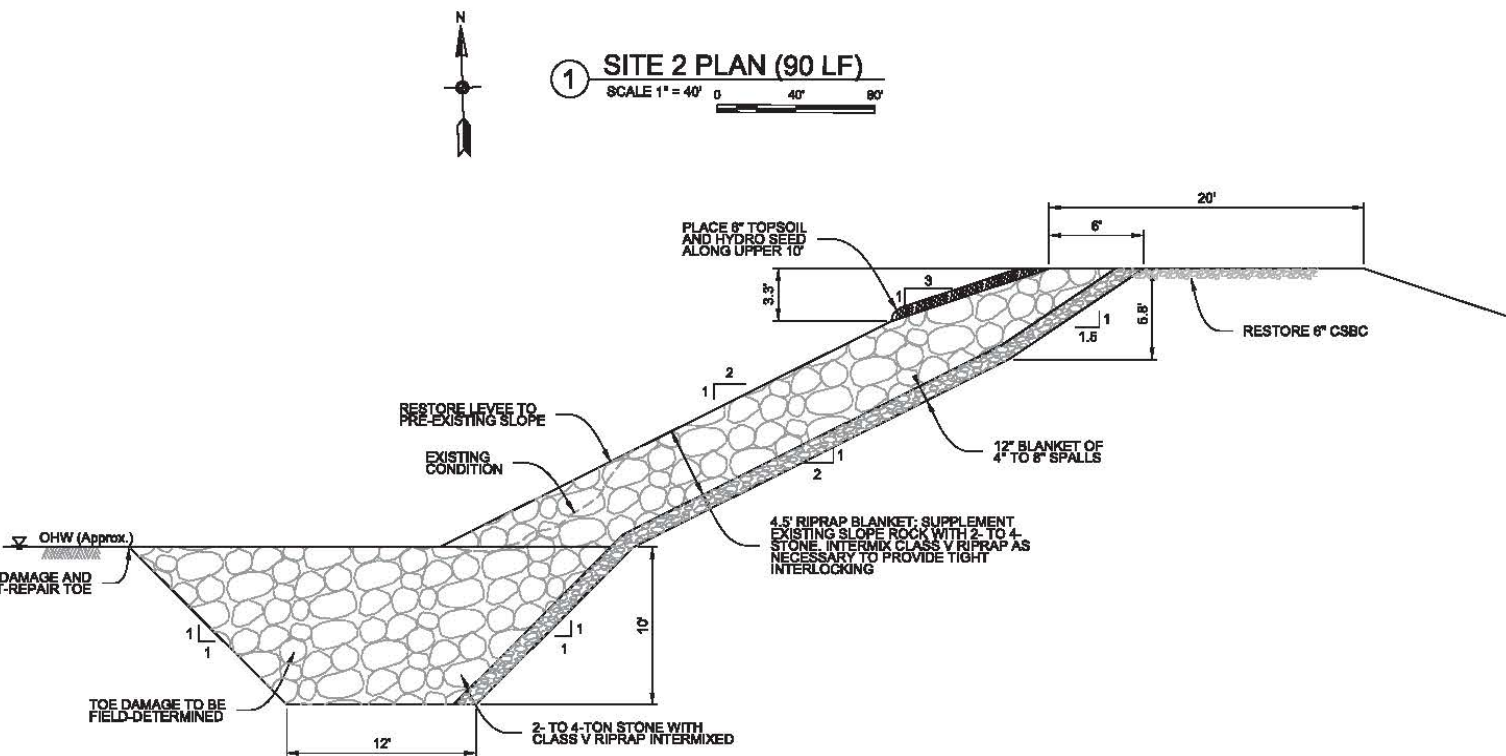
PN NSQ-01-16 FY16



PROJECT LOCATION MAP

PLATE NO.		TITLE
GENERAL		
G-001	TITLE, VICINITY MAP, PROJECT MAP, AND INDEX	
CIVIL		
C-100	SITE ACCESS PLAN	
C-101	SITE 1 PLAN AND SECTION	
C-102	SITE 2 PLAN AND SECTION	

FPM LEVEE REMEDIATION NISQUALUM RIVER, PIERCE COUNTY, WA NISQUALUM PARK LEVEE NSQ-01-06 TITLE, VICINITY MAP, PROJECT MAP, AND INDEX	Prepared by J005 _____ Date _____ Chief, Civil Engineer		Reviewed by J005 _____ Date _____ Chief, Storm and Tidal Engineer		Recommended by J005 _____ Date _____ Chief, Design Branch Approved by J005 _____ Date _____ Chief, Engineering Div.		File No. 1 _____ Date _____ Submittals No. _____
	U.S. ARMY CORPS OF ENGINEERS 315 1 ST AVENUE SEATTLE, WASHINGTON		Submitter's No. J005 _____ Date _____		Recommended by J005 _____ Date _____		File No. 2 _____ Date _____
	Project Manager J005 _____ Date _____		Submitter's No. J005 _____ Date _____		Recommended by J005 _____ Date _____		File No. 3 _____ Date _____
	Reviewer's No. J005 _____ Date _____		Submitter's No. J005 _____ Date _____		Recommended by J005 _____ Date _____		File No. 4 _____ Date _____



(A) SITE 2 TYPICAL SECTION (90 LF)
SCALE 1" = 5'

LEGEND:

- WORK AREA
- - - - - STAGING AREA

NOTES

1. HORIZONTAL DATUM IS WASHINGTON STATE PLANE COORDINATE SYSTEM SOUTH ZONE NAD 83.
2. VERTICAL DATUM BASED ON NAVD 1988.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING UNDERGROUND AND OVERHEAD UTILITIES AS APPLICABLE PRIOR TO COMMENCING WORK.
4. QUARRY SPALLS SHALL CONFORM TO GRADATION IN TABLE 1.
5. CLASS V RIPRAP SHALL CONFORM TO GRADATION IN TABLE 2, AND 2- TO 4-TON STONE SHALL CONFORM TO GRADATION IN TABLE 3. STONE SHALL BE HARD, SOUND, AND DURABLE MATERIAL FREE FROM SEAMS, CRACKS, AND OTHER DEFECTS TENDING TO LEAD TO PREMATURE WEATHERING.
6. EXISTING RIPRAP MAY BE SALVAGED FOR USE IN THIS PROJECT. SALVAGED STONE MUST BE COMPETENT AND FREE OF CRACKING AND WEATHERING.
7. CRUSHED SURFACING BASE COURSE (CSBC) SHALL CONFORM TO WSDOT SPEC 9-03.9(3). THE REQUIRED GRADATION IS SHOWN IN TABLE 4.
8. TOPSOIL SHALL CONSIST OF A 75/25 MIXTURE OF ENGINEERED SOIL AND LARGE ROOTS REMOVED SO THAT SOIL IS FREE TO GRADATION IN TABLE 5 AND SHALL BE FREE OF ROOTS, CHEMICALS, GARBAGE, AND DEBRIS.

TABLE 1. QUARRY SPALL GRADATION

100% SMALLER THAN	8"
100% LARGER THAN	4"

TABLE 2. CLASS V RIPRAP GRADATION

100% SMALLER THAN	1,800 LB (28"-42")
50% SIZE	750 LB (22"-28")
90% LARGER THAN	350 LB (17"-23")
10% RANGE	25-350 LB (7"-18")

TABLE 5. ENGINEERED TOPSOIL GRADATION

SIEVE SIZE	% PASSING BY WEIGHT
1/2"	100
NO. 4	75-100
NO. 10	40-75
NO. 16	25-55
NO. 40	25-50
NO. 200	10-20

TABLE 3. 2- TO 4- TON STONE GRADATION

100% SMALLER THAN	8,000 LB (52"-66")
50% SIZE	8,000 LB (38"-52")
100% LARGER THAN	4,000 LB (22"-30")

TABLE 4. CSBC GRADATION

SIEVE SIZE	% PASSING BY WEIGHT
1.25"	100
1"	80-100
5/8"	50-80
NO. 4	25-45
NO. 40	3-18
NO. 200	7.5 MAX

TABLE 6. EARTHWORK QUANTITIES

MATERIAL	VOL (CY)
CLASS V RIPRAP	100
2- TO 4- TON STONE	290
QUARRY SPALLS	90
CSBC	30
TOPSOIL	30

REPAIR STEPS

1. EXCAVATE RIVERBED MATERIAL DEPOSITED OVER BURIED TOE AND VERIFY EXTENT OF TOE DAMAGE.
2. REPAIR BURIED TOE WITH 2- TO 4-TON STONE. INCORPORATE CLASS V RIPRAP AS NECESSARY TO FILL VOIDS AND PROVIDE TIGHT INTERLOCKING.
3. PLACE 2- TO 4-TON STONE TO REPAIR SCOUR AT TOE OF SLOPE. INCORPORATE CLASS V RIPRAP AS NECESSARY.
4. RE-WORK EXISTING RIPRAP REMAINING ON SLOPE TO PROVIDE TIGHT INTERLOCKING. IF NECESSARY, REPAIR BEDDING BLANKET WITH 4" TO 8" QUARRY SPALLS.
5. TRANSITION UPSTREAM AND DOWNSTREAM ENDS OF REPAIR TO SMOOTHLY TIE INTO EXISTING SLOPE.
6. PLACE 6" OF TOPSOIL ALONG UPPER 10' (SLOPE LENGTH) OF RIVERWARD SLOPE.
7. RESTORE 6" CSBG ON LEVEE CREST.
8. HYDROSEED TOPSOIL ALONG RIVERWARD SLOPE AND ALL EXPOSED OR DISTURBED SOIL. HYDROSEED MIX SHALL CONSIST OF NATIVE GRASS SPECIES AND MULCH.

IF SHEET MEASURES LESS THAN 22"x34" IT IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.



11

[illegible]

U.S. ARMY CORPS OF ENGINEERS SEATTLE DISTRICT SEATTLE, WASHINGTON	COMPONENT NAME		Access Route	
	DATE BY	DATE BY		
	SUBMITTER NAME			
			FPA # 14-00000000	

FY16 LEVEE REHABILITATION
NISQUALLY RIVER, PIERCE COUNTY, WA
NISQUALLY PARK LEVEE
NSQ-01-18
SITE 2
PLAN AND SECTION

Steel number:
C-102

APPENDIX C: CULTURAL RESOURCES



Allyson Brooks Ph.D., Director
State Historic Preservation Officer

February 27, 2017

Mr. Evan Lewis
Environmental & Cultural Resources
Seattle District
Corps of Engineers
PO Box 3755
Seattle, Washington 98124

Re: Nisqually Park Levee Rehabilitation Project
Log No.: 2016-11-08296-COE-S

Dear Mr. Lewis:

Thank you for contacting our department. We have reviewed the professional archaeological survey report you provided for the proposed Nisqually Park Levee Rehabilitation Project along the Right bank of the Nisqually River near Ashford, Pierce County, Washington.

We concur with your Determinations of No Historic Properties Affected.

We would appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4).

In the event that archaeological or historic materials are discovered during project activities, work in the immediate vicinity must stop, the area secured, and the concerned tribe's cultural staff and cultural committee and this department notified.

These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer in compliance with the Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations 36CFR800.4. Should additional information become available, our assessment may be revised, including information regarding historic properties that have not yet been identified. Thank you for the opportunity to comment and a copy of these comments should be included in subsequent environmental documents.

Sincerely,

Robert G. Whitlam, Ph.D.
State Archaeologist
(360) 890-2615
email: rob.whitlam@dahp.wa.gov

State of Washington • Department of Archaeology & Historic Preservation
P.O. Box 48343 • Olympia, Washington 98504-8343 • (360) 586-3065
www.dahp.wa.gov



APPENDIX D: COASTAL ZONE MANAGEMENT ACT



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

December 13, 2016

U.S. Army Corps of Engineers, Seattle District
ATTN: Evan Lewis, Chief
Environmental and Cultural Resources Branch
PO Box 3755
Seattle, WA 98124-3755

RE: Coastal Zone Consistency for Nisqually Park Levee Rehabilitation Project,
Nisqually River, Pierce County, Washington

Dear Mr. Lewis:

On October 26, 2016, the U.S. Army Corps of Engineers, Seattle District (Corps) submitted a Consistency Determination with the Washington State Coastal Zone Management Program (CZMP). The proposed federal activity includes repair of approximately 300 linear feet of riverward slope at two location on the right bank of the Nisqually River, located upriver from Ashford, Pierce County, Washington.

Pursuant to Section 307(c)(3) of the Coastal Zone Management Act of 1972 as amended, Ecology concurs with Corps' determination that the proposed work is consistent with Washington's CZMP.

If you have any questions regarding Ecology's consistency determination please contact Lori Kingsbury at (360) 407-6926.

YOUR RIGHT TO APPEAL

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do all of the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.



Mr. Evan Lewis
December 13, 2016
Page 2

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board 1111 Israel RD SW STE 301 Tumwater, WA 98501	Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903

Sincerely,



Perry J Lund, Unit Manager
Shorelands and Environmental Assistance Program
Southwest Regional Office

By Certified Mail 91 7199 9991 7036 8381 6875

cc: Andrew B. Carey, Citizens Supporting the Upper Nisqually

e-cc: Hannah Hadley, U.S. Army Corps of Engineers
Loree' Randall, Ecology, HQ SEA
Lori Kingsbury, Ecology, SWRO SEA
Rick Mraz, Ecology, SWRO SEA
ccyrefedpermits@ecy.wa.gov

APPENDIX E: ENDANGERED SPECIES



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Washington Fish and Wildlife Office
510 Desmond Dr. SE, Suite 102
Lacey, Washington 98503



In Reply Refer To:
01EWF00-2017-I-0188

MAR 20 2017

Evan Lewis, Chief Environmental and Cultural Resources
Seattle District, U.S. Army Corps of Engineers
ATTN: Environmental and Cultural Resources (Hadley)
P.O. Box 3755
Seattle, Washington 98124-3755

Dear Mr. Lewis:

Subject: Nisqually River Park Levee Rehabilitation

This letter is in response to your correspondence requesting our concurrence with your "may affect, not likely to adversely affect" determination for the marbled murrelet (*Brachyramphus marmoratus*) and northern spotted owl (*Strix occidentalis caurina*) associated with emergency levee repair project. The project is located on the Nisqually River upstream of the Town of Ashford in Pierce County, Washington. We received your letter and biological assessment on November 21, 2016. The Army Corps of Engineers with the Pierce County as its local sponsor is proposing to undertake this project under the Public Law 84-99. This informal consultation has been conducted in accordance with section 7(a)(2) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Damage to the Nisqually River Park Levee occurred on the right bank between river miles 67.7 and 68.6 during three flood events on the Nisqually River between the end of October and mid-December 2015. The damage occurred at two sites. At Site 1, which is in Mount Rainier National Park (Mt Rainier NP), the levee along the Nisqually Road suffered 300 ft of toe scour and loss of riprap. Further downstream at Site 2, the river undercut 40 ft of the levee toe and dislodged riprap armor from the slope and toe. Site 2 is not currently adjacent to the active channel. The project proposes to repair a total of 390 ft (300 ft at Site 1 and 90 ft at Site 2) along the levee. Project repairs will remain within the existing footprint of the levee. The proposed project includes diverting the river channel into a historic channel, removing some small trees and shrubs along the levee, excavating and placing new rock on the toe and slope, placing new topsoil, and hydro-seeding the disturbed areas with grasses. To mitigate for removal of some riparian vegetation, willows will be planted along the toe near the ordinary high water level.

At Site 1 construction activities will begin after September 5 and noise generating activities will occur between two hours after sunrise and two hours before sunset through September 23. Construction activities at Site 2, approximately 3,200 ft downstream from Site 1, will begin in August. The proposed project will take 6-8 weeks to complete.

In conjunction with a past levee repair at the site, Vince Harke (US Fish and Wildlife) (USFWS) and Paul Massart (Corps) conducted a site visit on May 27, 2011, and surveyed the area for trees containing suitable murrelet nest platforms. Suitable murrelet nesting habitat was located adjacent to the project site, and only four potentially suitable nest trees were located within the USFWS's 111-yard disturbance zone for heavy equipment operations.

Marbled Murrelets

Because the project site is along the road, any marbled murrelets (murrelets) in the area have been exposed to slightly increased (compared to undeveloped areas) background sound levels from traffic and some human presence. The proposed use of large trucks and heavy equipment will cause increased levels of sound, human presence, and activity in the action area. We have previously completed analyses of the potential for disturbance to murrelets (USFWS 2013, pp. pp. 101-110). We concluded that murrelet nesting behaviors may be disrupted by loud noise and activity from heavy equipment operations that occurs in close proximity (within 111 yards) to suitable nesting habitat during the murrelet nesting season (April 1 - September 23) (USFWS 2013, p. 103).

Suitable murrelet nesting habitat is present adjacent to the project site, but only four potentially suitable nest trees are located within the 111-yard disturbance distance; the closest being 45 yards from the project site. Additional platform trees were noted further inland in the stand. The forest at the project site appears to be older second-growth and grades rapidly from young trees along the edge of the levee road to an older mixed-conifer stand at the eastern (upstream) end of the levee. Although the action area contains suitable murrelet nesting habitat it is considered of marginal quality due to the low number of suitable nesting platforms present.

Construction activities at Site 1 will occur after September 5, which coincides with the end of the murrelet nesting season. In Washington, the murrelet nesting season is the period from April 1 to September 23. However, over 95 percent of murrelet chicks have fledged by September 4 (USFWS 2012, Appendix A p. 2). The proposed project will expose a small area of nesting habitat to noise disturbance during the late nesting season.

Given the limited area of marginally suitable habitat exposed and the fact that most murrelets have completed their nesting cycle by early September, we consider the likelihood that an active murrelet nest site will be present within the defined 111-yard disruption distance from the road to be discountable.

Northern Spotted Owl


Sound levels and human presence in the action area will increase above current background levels due to the use of heavy equipment. We have previously completed analyses of the potential for disturbance to northern spotted owls (USFWS 2003, pp. 265-285). We concluded that northern spotted owl nesting behaviors may be disrupted by loud noise and activity from heavy equipment operations that occurs in close proximity (within 66 yards) of nest trees in suitable nesting habitat during the northern spotted owl nesting season (March 1 - September 30) (USFWS 2013, p. 82). The same activity beyond 66 yards of suitable habitat will result in insignificant effects to nesting northern spotted owls (USFWS 2013, p. 82).

The project site is adjacent to suitable habitat for northern spotted owl. In the past, the U.S. National Park Service conducted northern spotted owl surveys as part of their annual demography study along the lower Nisqually Road and did not detect any owls in the project area. However, there is a potential for transient, non-resident northern spotted owls to be present in the project area. Construction activities at Site 1 will occur after September 5, which coincides with the end of the breeding season (March 1 - September 30). Based on northern spotted owl monitoring at Mt Rainier NP, we do not expect any resident, nesting northern spotted owls to be present in the immediately adjacent areas, so there would be no effect to nesting northern spotted owls. However, because the project is in the Mt Rainier NP, it is possible that transient northern spotted owls could disperse through the project area at any time of the year. The effects of short-term disturbance to dispersing northern spotted owls are minor and considered to be insignificant because the owls are simply moving away from a source of short-term disturbance rather than being forced to flush away from an active nest site. Based on the information provided, we concur that the proposed action is not likely to adversely affect northern spotted owl.

This concludes informal consultation pursuant to the regulations implementing the ESA (50 CFR 402.13). This project should be re-analyzed and re-initiation may be necessary if 1) new information reveals effects of the action that may affect listed species or critical habitat in a manner, or to an extent, not considered in this consultation, 2) if the action is subsequently modified in a manner that causes an effect to a listed species or critical habitat that was not considered in this consultation, and/or 3) a new species is listed or critical habitat is designated that may be affected by this project.

A complete record of this consultation is on file at the Washington Fish and Wildlife Office, in Lacey, Washington. If you have any questions about this letter or our joint responsibilities under the Act, please contact Shirley Burgdorf at (360) 534-9340 or Emily Teachout at (360) 753-9583, of this office.

Sincerely,


for Eric V. Rickerson, State Supervisor
Washington Fish and Wildlife Office

Literature Cited

USFWS (US Fish and Wildlife Service). 2003. Biological Opinion and letter of concurrence for effects to bald eagles, marbled murrelets, northern spotted owls, bull trout, and designated critical habitat for marbled murrelets and northern spotted owls from Olympic National Forest program of activities for August 5, 2003, to December 31, 2008. US Fish and Wildlife Service, Lacey, Washington.

USFWS. 2012. Marbled murrelet nesting season and analytical framework for section 7 consultation in Washington. Unpublished agency document. U.S. Fish and Wildlife Service, Washington Fish and Wildlife Office, Lacey, Washington. 8 pp.

USFWS. 2013. Biological opinion for effects to northern spotted owls, critical habitat for northern spotted owls, marbled murrelets, critical habitat for marbled murrelets, bull trout, and critical habitat for bull trout from selected programmatic forest management activities March 25, 2013 to December 31, 2023 on the Olympic National Forest, Washington. USFWS Reference: 13410-2009-F-0388. U.S. Fish and Wildlife Service, Washington Fish and Wildlife Office, Lacey, WA. 404 pp.