US Army Corps of Engineers®
Seattle District

NOTICE OF PREPARATION/
CLEAN WATER ACT PUBLIC NOTICE

Planning Branch
Environmental Resources Section
P.O. Box 3755
Seattle, WA 98124-3755
ATTN: Bobbi Jo McClain (PM-PL-ER)

Public Notice Date: March 24, 2011
Expiration Date: April 25, 2011
Reference: PL-11-09

Project Name: Nisqually Park Levee Repair

Interested parties are hereby notified that the U.S. Army Corps of Engineers, Seattle District (Corps) plans to prepare, pursuant to the National Environmental Policy Act (NEPA) , an environmental assessment (EA) for the Nisqually Park Levee rehabilitation project to repair the damage along the right bank of the Nisqually River where the river crosses the western boundary of Mount Rainier National Park, at the park's southwest corner. The levee spans from river mile (RM) 67.6 to RM 68.6. The January 2009 flood event damaged many reaches along the levee, creating over-steepened slopes, lost armor rock in several areas at the upstream end, and lost toe rock. Approximately 1700 feet of levee was damaged. In the current condition, the levee offers a five-year level of flood protection.

AUTHORITY

The proposed levee repair is authorized by Public Law 84-99 (33 U.S. Code Section 701n). Corps rehabilitation and restoration work under this authority is limited to 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 local sponsor.

BACKGROUND

The Nisqually River watershed is a 761 square mile drainage area with the river headwaters originating on the southern slopes of Mt. Rainier on the Nisqually Glacier. Flood hydrology of the upper Nisqually River is derived from winter rainstorm events, spring snowmelt, and glacial melt runoff. In addition, the Nisqually experiences mud and debris flow events associated with glacial outburst flooding. The upper Nisqually Basin carries heavy bedloads of cobble, gravel, and sand materials. In addition to bedload, the river also transports a significant amount of large woody debris.

Along the Nisqually Park Levee the river is a braided channel with the mainstem channel. Overall, the channel is extremely dynamic and capable of transporting large material.

Flooding occurred on the Nisqually River in January 2009, cresting at 12.68 feet and 8,540 cfs on 8 January with a 13-year flood event occurring at the Nisqually River gage (USGS 12082500) near National, WA. Intense rainfall and rapid snowmelt were a result of a high velocity jet stream which is a common weather pattern experienced in this region.

Approximately 1,700 feet of levee were damaged. Pierce County Public Works and Utilities Department completed interim repairs along 600 feet of the most damaged, easternmost section of the levee in September 2010.

PURPOSE AND NEED

The Nisqually River exceeded flood stage during the January 2009 event and the associated high velocity flows resulted in toe scour and loss of embankment material and riverward armor along 1,700 feet of levee. Many reaches along the damaged levee were over-steepened with slopes varying from 1.5H:1V to vertical. Several areas at the upstream end were missing 50-100% of the riverward slope armor rock. Toe rock was missing along most of the damaged reach, with many large rocks visible in the current river channel. Pierce County completed repairs to the upstream end of the levee in September 2010, repairing 600 feet in total. However the remaining 1,100 feet remains damaged. In the current condition, the levee offers a 5-year level of flood protection.

There are numerous structures in the community protected by this levee, including residences, businesses, historic landmarks, hotels, and the main entrance and roadway into Mount Rainier National Park. There are multiple parcels of land with numerous buildings in the floodplain. An evaluation of the parcels in the immediate vicinity of the floodplain covered a little over 700 acres and showed 86 structures. The purpose of this project is to repair and return the damaged levees to the 20-year level of flood protection, as found prior to the January 2009 flood event, in order to protect lives and property from subsequent flooding.

PROPOSED ACTION

Multiple alternatives were considered as follows.

- No Action. The No-Action alternative would make no repair and leave the levee in its current damaged condition. This alternative does not satisfy the project goal. Without repair, the loss of toe and embankment armor would result in continued prism scour, and ultimately, levee failure. The results of a failure would include damages to infrastructure, homes and historical sites previously protected by the Nisqually Park Levee.
- Setback Levee. The Setback alternative considers moving the levee away from the river's edge to allow the river access to more natural floodplain. Setting back the levee was evaluated but was not selected as it would require the relocation of existing infrastructure, would require the removal of a significant number of mature riparian trees within the National Park, and would result in significant additional implementation costs.
- Repair In Kind. This alternative returns the levee to pre-flood levels of protection at the same location as the pre-flood levee. The area of the pre-flood toe would be excavated to allow construction of a 10 feet high x 12 feet wide buried toe of 10 to 15 ton rock. A transition zone of 6 to 8 ton rock would be placed above the buried toe to transition to the exposed toe of the levee. The levee face would be re-graded to a 3H:1V slope to match pre-flood conditions. A 2 foot layer of 8 to 10 inch spalls would be placed on the riverward face of the levee from the toe to the crown, which would then be overlain with a 4.5 foot blanket of 2 to 4 ton rock armor. A 6-inch gravel lift would be installed along the top of the levee crown to create a driving surface for inspection and maintenance access. In order to complete repairs, a temporary diversion berm may need to be constructed to move the Nisqually River away from the construction area and into an existing side channel further from the bank. The berm would be removed at the project's conclusion.
- Nonstructural. This alternative would not repair the levee but instead would relocate all existing structures, utilities and other infrastructure within the area protected by this levee.

The costs associated with this alternative were deemed too high for the associated level of benefit.

The current recommended alternative for this PL 84-99 levee rehabilitation is the Repair In Kind Alternative. This alternative maintains the levee in its pre-damage location with a larger buried toe and larger armor rock so that future repairs should be minimized. It would offer the same level of protection as before the damaging January flood event. Final selection of the preferred alternative and finalization of the design, including any mitigation of impacts, would occur during the NEPA process and before construction.

ANTICIPATED IMPACTS

The Corp's preliminary analysis of the principal effects to the Repair to Pre-Flood Design Alternative is summarized as follows.

The project site is at the southwestern corner of Mt. Rainier National Park, close to the entrance along Paradise Road. Paradise Road is the access road from the west side of the park to the Longmire and Paradise facilities.

In the project area, the Nisqually River is a braided channel approximately 600 feet wide with a relatively high-gradient. As of February 2011, the main channel of the river within the project area runs along the right bank at the toe of the levee. Prior to the damage, the levee in this location was heavily armored and nearly devoid of vegetation on the top and waterward face, with the exception of two stands of cedar and fir trees and an occasional willow for a total length of approximately 100 feet on the waterward side of the levee. On the landward side is a dense riparian forest of spruce, fir and cedar, with understory vegetation and moss cover on many of the rocks.

Water Quality. There would be short-term impacts from the construction of repairs to the levee. Water would be temporarily diverted away from the construction site. This would be constructed by piling up the river rock and woody debris from within the channel or on nearby gravel bars to block the main channel and divert the water into an existing dendritic channel. Because of the depth to which the toe would be buried, the work must be done in the dry. There may be a temporary increase in turbidity due to the diversion. Turbidity would be monitored during the diversion and levee repair. If turbidity exceeds water quality standards, construction would pause and adjustments to construction methods would be made so that turbidity remains within acceptable levels.

Wetlands. There are no jurisdictional wetlands on this site.

Fish and Wildlife. The project is within the Mount Rainier National Park, which provides habitat to a variety of species. The surrounding forest of the park consists of an even-aged stand of 80 to 100 year old Douglas fir (*Pseudotsuga menzeisii*). However the trees adjacent to the project are younger (approximately 20 years old) and there is very limited riparian vegetation within the project footprint. The lack of riverward vegetation and trees limits shading of the river, insect and nutrient input to the river, and overall riparian corridor function in the project reach. There is considerable woody debris within the river that has migrated from upstream and deposited on large mid-channel gravel and cobble bars. All efforts would be made to retain as much vegetation as possible within the project site. Fish exclusion protocols would be followed during the diversion phase of construction to remove fish from the dewatered channel.

Bald eagle may be found at the site. Though no longer listed under ESA, they are protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act, so caution would be taken to avoid harm to the birds or their habitat.

There is a peregrine falcon eyrie within about 1.5 miles of the project site. The project area is also part of the White River elk range. These species may avoid the project area during construction due to increased noise and human presence but would not be significantly impacted by the repair.

Potential effects of the proposed work on threatened or endangered species and designated critical habitat will be addressed per Section 7 of the Endangered Species Act (ESA). Table 1 lists the Federally listed species occurring in the general project area.

Table 1: Federally listed species in the project vicinity.

Species (Scientific name)	**Federal Status**	**Habitat present in or near project?**	**Species presence in or near project?**
Northern spotted owl (*Strix occidentalis caurina*)	Threatened	Yes	No
Marbled murrelet (*Brachyramphus marmoratus marmoratus*)	Threatened	Yes	Yes
Fisher (*Martes pennanti*)	Candidate	Yes	No
Gray Wolf (*Canis lupis*)	Endangered	Yes	No
Canada Lynx (*Lynx canadensis*)	Threatened	Yes	No
Grizzly Bear (*Ursus arctos horribilis*)	Threatened	Yes	No
Chinook Salmon (*Oncorhynchus tshawytscha*)	Threatened	No	No
Bull Trout (*Salvelinus confluentus*)	Threatened	No	No
Steelhead (*Oncorhynchus mykiss*)	Threatened	No	No
Dolly Varden (*Salvelinus malma*)	Proposed for Listing	No	No

The National Park Service has ongoing northern spotted owl surveys. These have not shown nest sites in the project area, however any exclusion zones would be defined with the most recent data and could change as new information is gathered.

The forest adjacent to the project is young and is not considered to be suitable habitat for marbled murrelet or spotted northern spotted owl. However suitable habitat is nearby. Annual surveys by the National Park Service (NPS) have shown that the upper Nisqually River Basin does include a few nesting murrelets (NPS 2010). Murrelet nesting behaviors may be disrupted

by noise and activity during the early nesting period (USFWS 2004). To minimize disturbance, construction would not occur during this early nesting period and would be restricted to begin after 6 August. Murrelets travel to and from their nesting locations at dawn and dusk. Restricting construction to daylight hours would further limit impacts to the species.

The Nisqually River is used by Chinook, chum, coho and pink salmon, as well as steelhead, but they are restricted to the reaches downstream of La Grande Dam. La Grande Dam is several miles downstream of the project site and is a barrier to fish passage. Anadromous salmonids do not occur at the project site. There is no documentation of bull trout or Dolly Varden in the Nisqually River (NPS 2010). No effect to these species is anticipated.

Despite a wide historic distribution and available habitat, extensive surveys in Mount Rainier National Park in 2001-2002 did not find evidence of fishers or Canada lynx. Gray wolves are naturally recolonizing in Washington, however there are no confirmed reports of their activity within Mount Rainier. Similarly no confirmed reports of grizzly bear exist though tracks were identified adjacent to the park in 1993 (NPS 2008).

Cultural Resources. Prior to repairs, a Corps archeologist will conduct a cultural resources survey of the project area to determine if there is a potential for the proposed repairs to cause effects to historic properties. A National Historic Preservation Act (NHPA) Section 106 cultural resources report will be prepared for the proposed 2011 Nisqually Park Levee repair. The report will include the findings of the investigations for area of potential effects (APE), recommendations for archaeological monitoring during construction (if any), and a determination of effects to archaeological and historic properties that may be present in the APE. If archaeological monitoring is recommended at the Nisqually Park levee, the report will include a monitoring plan and protocols to be followed. The protocols will include an inadvertent discovery clause that will apply when an archaeological monitor is not present. The Corps' determinations of effects to historic properties, the investigation report, and monitoring plan will be reviewed by the Washington State Historic Preservation Officer (SHPO) and the appropriate tribes prior to construction.

Air Quality. Construction vehicles and heavy equipment would temporarily and locally generate gasoline and diesel exhaust fumes, carbon dioxide (CO_2), carbon monoxide, and dust on roadways. These emissions are not expected to exceed the Environmental Protection Agency's (EPA) *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. Unquantifiable but insignificant exacerbation of effects of CO_2 emissions on global climate change is also anticipated.

Noise. Temporary local increases in noise would occur as a result of construction activities. Work would be done during daylight hours to minimize impact to nearby residents.

Traffic. Construction equipment and delivery trucks would need to use Paradise Road, and thus may disrupt local and park traffic during the peak of recreation season. Signs, traffic flaggers, and other safety precautions would be needed to minimize disruptions to park users.

Recreation. The project is adjacent to a major entry/exit location for the national park. Disruptions to park visitors would be minimized to the extent possible. The roadway would remain open with potential increase in traffic due to the delivery of materials to the construction site.

Cumulative Effects. Council on Environmental Quality (CEQ) regulations implementing NEPA require that the cumulative impacts of a proposed action be assessed. A cumulative impact is an "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions" (40 CFR § 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place (40 CFR § 1508.7). CEQ's guidance for considering cumulative effects states that NEPA documents "should compare the cumulative effects of multiple actions with appropriate national, regional, state, or community goals to determine whether the total effect is significant" (CEQ 1997).

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 and again in 2004. In 1977, 1086 feet of levee was 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 resloped 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 constructed. The County performs annual maintenance on the levee for access and inspection. The Mount Rainier National Park Service has several projects ongoing in the repair vicinity. The proposed project is designed to restore the levee to its pre-flood level of protection and to limit the need for future repairs at this location, though maintenance activities would be expected to continue. Cumulative effects will be analyzed and addressed, as required, pursuant to NEPA and ESA.

COMPLIANCE WITH OTHER LAWS AND REGULATIONS

The Corps will coordinate the proposed action with the U.S. Fish and Wildlife Service concerning anticipated effects on threatened and endangered species and their critical habitat, pursuant to Sec. 7(a)(2) of the Endangered Species Act. A biological evaluation is being prepared, based on a preliminary determination that this project is not likely to adversely affect marbled murrelet.

The proposed work site is not in a navigable waterway, so an evaluation would not be needed under Sec. 10 of the Rivers and Harbors Act.

Pierce County is considered coastal under the Coastal Zone Management Act (CZMA). A determination of consistency with state and county shoreline management plans pursuant to the CZMA will be made.

The project is not anticipated to cause violations of any standards under the Clean Air Act.

The project will involve a discharge of fill material into waters of the United States that will be evaluated for substantive compliance with guidelines promulgated by the Environmental Protection Agency under authority of Section 404(b)(1) of the Clean Water Act. The project includes minor deviations to the pre-flood condition in that the repair includes larger toe rock which will change the size of the buried toe below the river bed from the pre-flood condition (decreasing the width into the channel by approximately 3 feet and increasing the depth approximately 6 feet). By analogy, the provisions of the regional conditions under Nationwide Permit 3, allow for minor deviations in the design pursuant to the Corps of Engineers' Clean Water Act Section 404(b)(1) permitting program. The Corps will request review of the project by the Washington State Department of Ecology such that the project provides reasonable

assurance of compliance with the Water Quality Standards of Washington State, under Section 401 of the Clean Water Act.

EVALUATION
The Corps has made a preliminary determination that the environmental impacts of the proposal can be adequately evaluated under the National Environmental Policy Act through preparation of an environmental assessment (EA). Preparation of an EA addressing potential environmental impacts associated with the levee rehabilitation project is currently underway.

In preparation of the environmental documentation for this project, coordination has been conducted or is ongoing with the following public agencies:

1. U.S. Fish and Wildlife Service,
2. National Park Service,
3. Environmental Protection Agency,
4. Washington Department of Fish and Wildlife,
5. Washington Department of Ecology,
6. State Historic Preservation Office, and
7. Nisqually Tribe

Any person who has an interest that may be affected by this disposal of fill or dredged material may request a public hearing. The request must be submitted in writing to the District Engineer within the comment period of this notice, and must clearly set forth the following: the interest that may be affected, the manner in which the interest may be affected by this activity, and the particular reason for holding a public hearing regarding this activity.

The decision whether to conduct the project will be based on an evaluation of the probable impact on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered; among these are: conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, consideration of property ownership and, in general, the needs and welfare of the people.

The Corps invites submission of factual comment on the environmental impact of the proposal. The Corps will consider all submissions received before the expiration date of this notice. The nature or scope of the proposal may be changed upon consideration of the comments received. The Corps will initiate an Environmental Impact Statement (EIS), and afford all the appropriate public participation opportunities attendant to an EIS, if significant effects on the quality of the human environment are identified and cannot be mitigated.

Submit comments to this office, Attn: Environmental Resources Section, no later than 30 days from the date of this notice to ensure consideration. In addition to sending comments via mail, comments may be e-mailed to bobbi.j.mcclain@usace.army.mil. Notice of Preparation can be found at the following website: http://www.nws.usace.army.mil/ers/doc_table.cfm under "*Nisqually Park*". Requests for additional information should be directed to Bobbi Jo McClain at 206-764-6968 or the above e-mail address.

REFERENCES

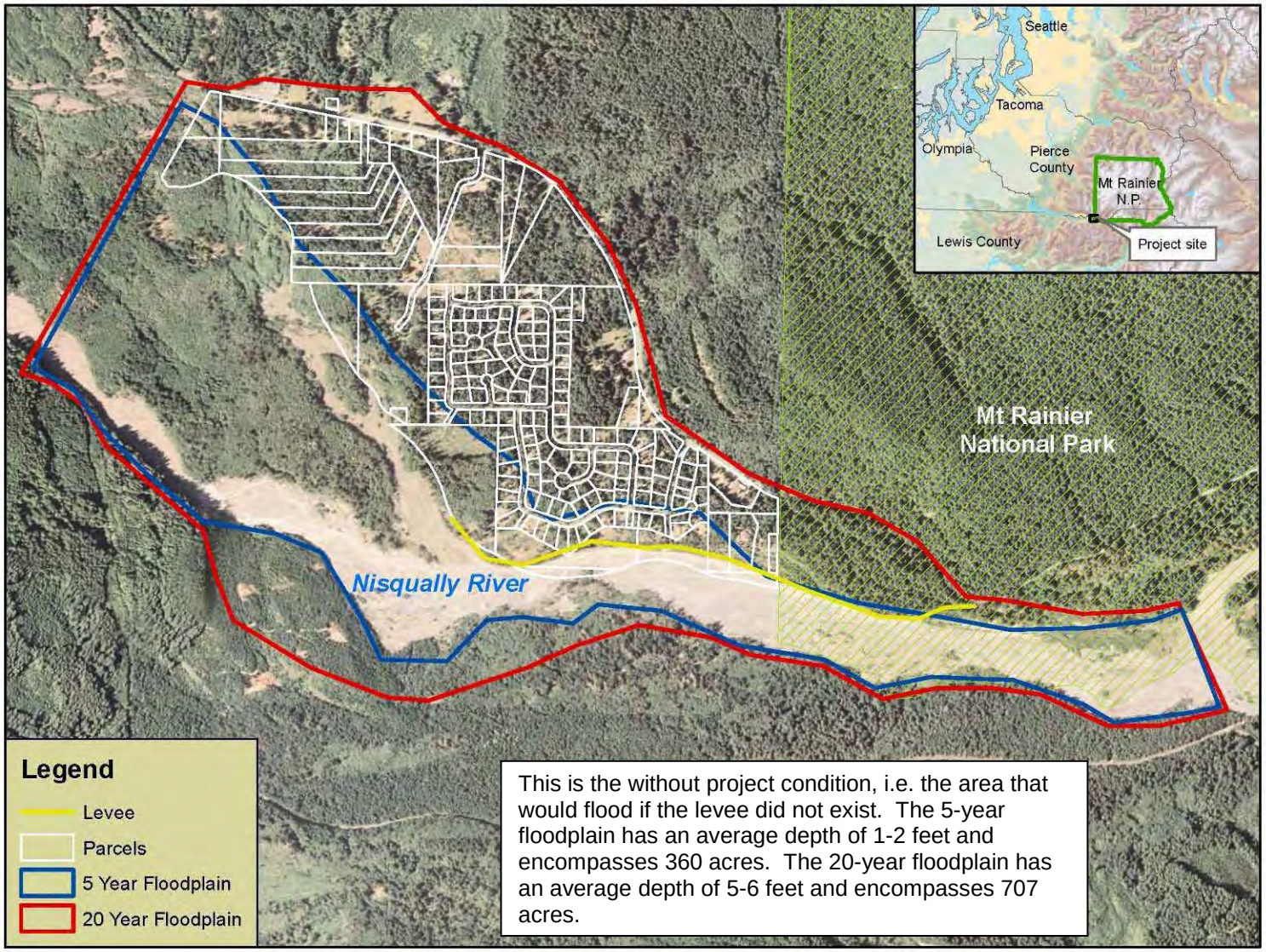
Council on Environmental Quality (CEQ). 1997. Considering Cumulative Effects Under the National Environmental Policy Act. Available online at: http://ceq.hss.doe.gov/nepa/ccenepa/ccenepa.htm.

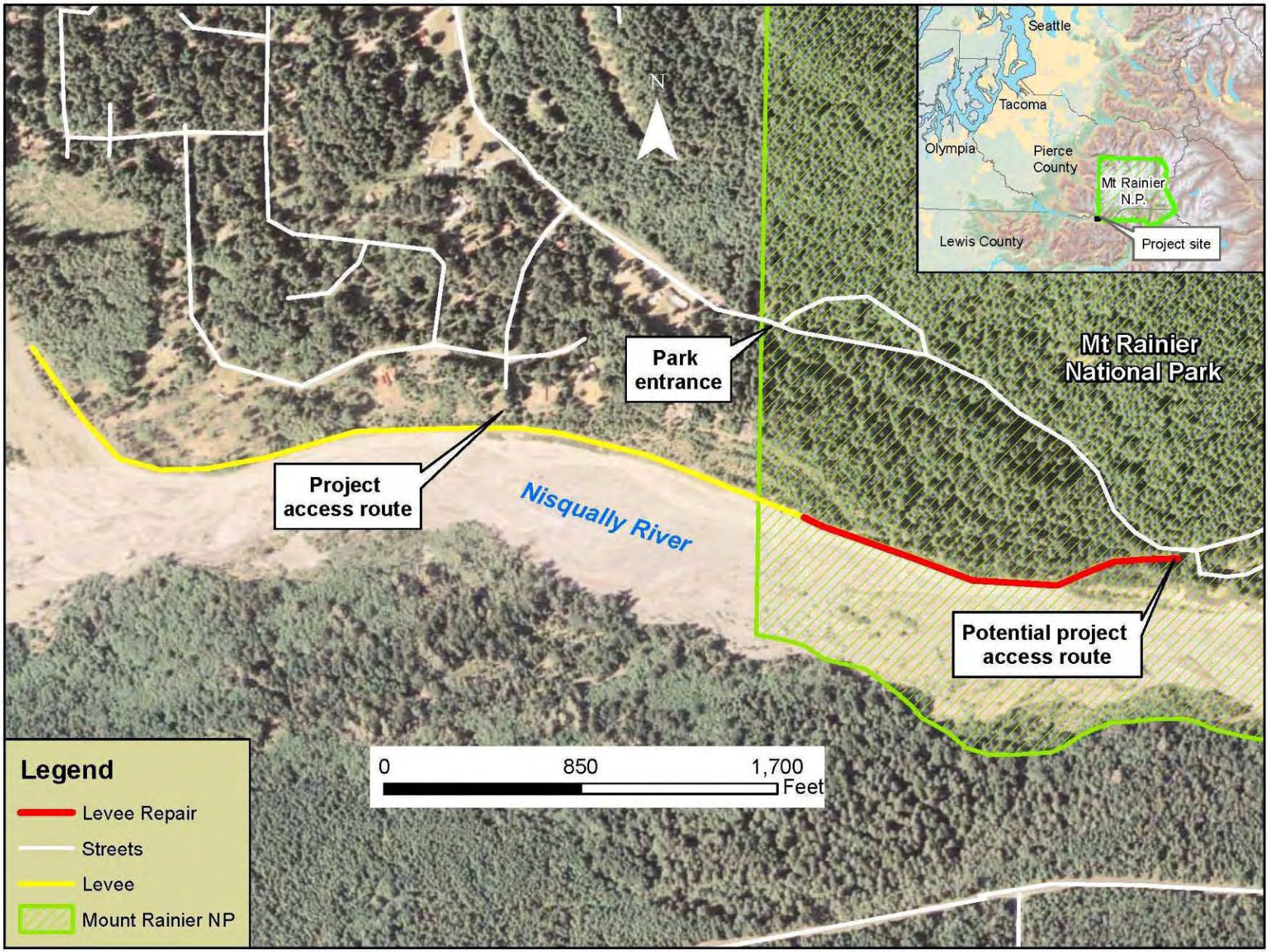
National Park Service. 2008. Environmental Assessment for the Carbon River Wonderland Trail Reroute. Mount Rainier National Park. Ashford, WA.

National Park Service. 2010. Biological Assessment for Pierce County Levee Repairs. Mount Rainier National Park. Ashford, WA.

U.S. Fish and Wildlife Service. 2004. Evaluation Report: 5-Year Status Review for the Marbled Murrelet in Washington, Oregon, and California. Available online at: http://www.fws.gov/arcata/es/birds/MM/documents/mm5yr_rpt_final_web.pdf

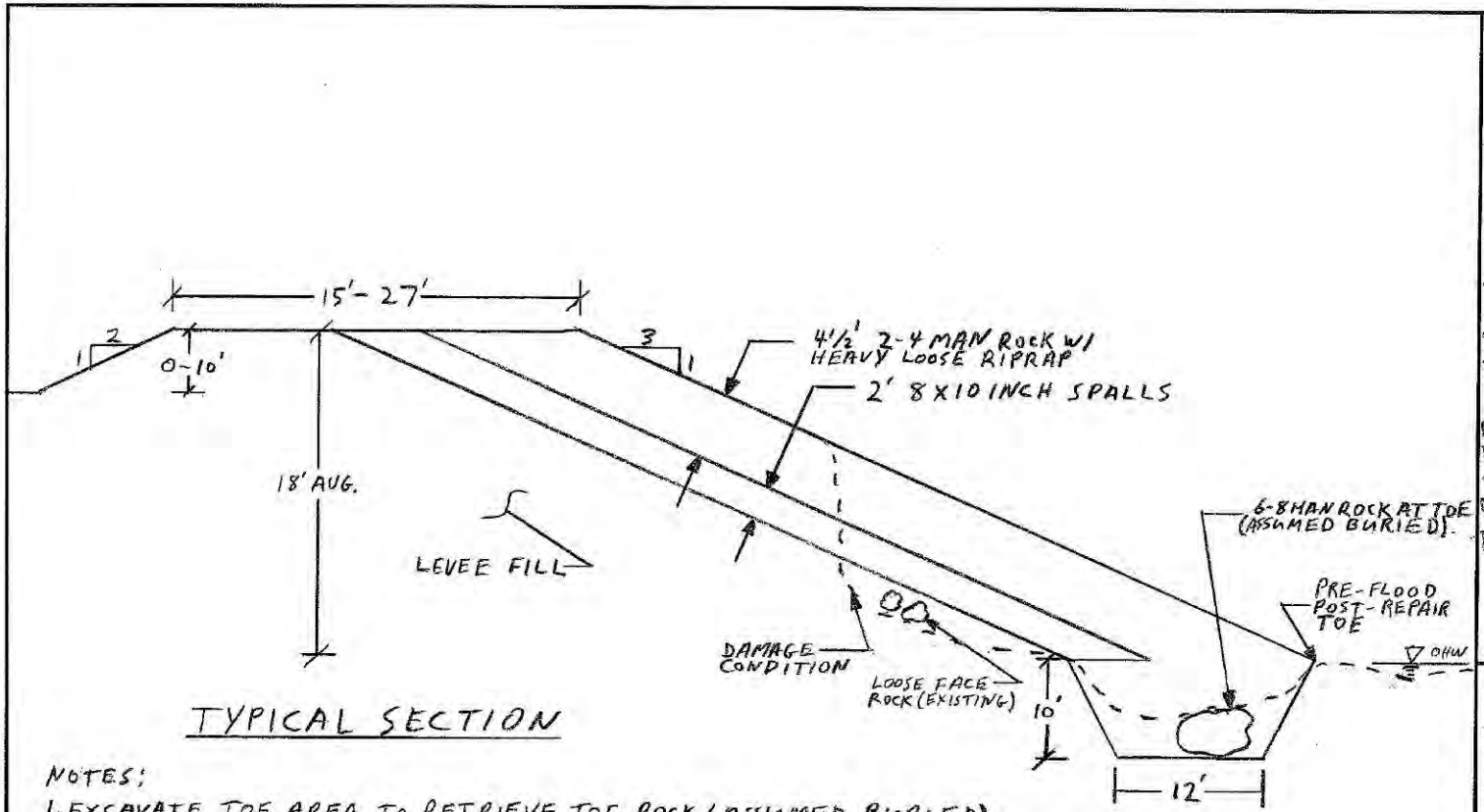
Project Maps, Plans, and Photos.




N
Seattle
Tacoma
Olympia
Pierce County
Mt Rainier N.P.
Lewis County
Project site
Park entrance
Mt Rainier National Park
Project access route
Nisqually River
Potential project access route
0
850
1,700
Feet
Legend
Levee Repair
Streets
Levee
Mount Rainier NP

ENGINEERING DESIGN SHEET OFFICE SYMBOL: CENWS-EN-GB-SS

PROJECT: PL84-99 LEVEE REPAIRS	COMPUTED BY: RUDIE	DATE: 4 MAR 10
SUBJECT: MISQUALLY PARK LEVEE	CHECKED BY: WEBER	SHEET: 1 OF: 2
		PART:



TYPICAL SECTION

NOTES;

1. EXCAVATE TOE AREA TO RETRIEVE TOE ROCK (ASSUMED BURIED)
2. PLACE TOE ROCK IN CONFIGURATION INDICATED AND USE EXISTING FACE ROCK TO FILL VOIDS.
3. REGRADE FACE SLOPE TO 3H:1V AND PLACE 2' LAYER OF SPALLS OVERLAIN WITH 4½' GRADED ARMOR ROCK (SEE GRADATION SPECIFICATION, PAGE 2).
4. REBUILD AND COMPACT IN LIFTS FOLLOWING EM 1110-2-1913, TABLE 7-1, CATEGORY 2.
5. NISQUALLY RIVER WILL BE DIVERTED FROM PROJECT DURING CONSTRUCTION. DIVERSION WILL BE SIMILAR TO PIERCE COUNTY DIVERSION DURING 2008 REPAIRS.
6. TOTAL REPAIR APPROXIMATELY 1700 L.F.

ENGINEERING DESIGN SHEET OFFICE SYMBOL: CENWS-EN-GB-SS

PROJECT	COMPUTED BY	DATE:
PL84-99 LEVEE REPAIRS	RUDIE	4 MAR 10
SUBJECT	**CHECKED BY**	SHEET: 2 OF: 2
MISQUALLY PARK LEVEE	DESJARDIN	PART:

FACE ROCK ARMOR GRADATION

54" BLANKET

100% SMALLER THAN	4500 LBS
50% SIZE	2250 LBS
90% LARGER THAN	900 LBS
10%	25-900 LBS.

Photo 1: Illustrating height of levee and loss of properly sized, angular armor rock.**.....**

Photo 2: Showing loss of bank armoring and the scoured levee face.