

Draft Environmental Assessment

Startup Training Levee Rehabilitation

**Snohomish County, Washington
August 19-30, 2002**



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

Startup Training Levee Rehabilitation
Snohomish County, Washington
August 19-30, 2002

Responsible Agency: The responsible agency for the levee rehabilitation project is the U.S. Army Corps of Engineers, Seattle District.

This document is also available online at:
<http://www.nws.usace.army.mil/ers/envirdocs.html>

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1 INTRODUCTION

1.1 Background

During the summer of 2002, the Seattle District, United States Army Corps of Engineers (Corps), and Snohomish County as the non-federal sponsor, constructed the Startup Training Levee Rehab Project (*see Appendix A*) from August 19 through August 30. The Startup levee system is a Federal levee system designed for flood control to provide protection from periodic, recurring floods. The main levee was completed in 1965 and the training levee, also constructed by the Corps, was completed in 1969.

The levee system includes a 7000-foot long flood control levee, constructed between the Skykomish and Wallace Rivers. The upstream and downstream ends of the levee tie into a Great Northern Railroad embankment, which serves as part of the levee system. The original project was built to protect Startup from periods of flooding (up to a 50-year recurrence interval) when the Skykomish River overflowed into the Wallace River in the vicinity of Startup. The levee, however, did not provide flood protection for 30 acres of farmland and urban structures near the downstream limits of the levee. The Startup training levee was built to provide this additional protection, extending downstream from the main levee 2600 feet and tying into high ground.

When the 2600 foot long training levee was constructed, it was setback from the river a minimum of 200 feet. It was originally composed of earthen embankment material and stabilized in select locations by a 3x 5-foot toe. Typical cross sections range from 2-7 feet in height, 3-10 foot wide top, and riverward slope of 1V: 2H to 1V: 4H. This design was not intended to receive constant, high velocity flows, but rather serve as a guide to shift the direction of occasional floodwaters.

Channel migration since the late 1960's has resulted in a shift of the main river channel and thalweg to directly against the training levee structure. The earthen training levee was not originally designed to receive constant flow from the river's thalweg.

In May of 1996, the Corps completed its first repair job on the training levee. Flood events in 1996 resulted in 250 linear feet of erosion. Repairs resulted in the placement of heavy riprap (class V) and light loose riprap in a trench 20 feet wide, 15 feet deep, and approximately 250 feet long. The trench was located 40 feet landward from the top riverbank.

Channel migration continued toward the training since the 1996 repair and increased the levees susceptibility to flood events. The flood event of January 7-9, 2002, peak flow of 46,100 cfs, 2.5 year event and subsequent peak flow event on February 22, 2002 of 34,800 cfs, 1.6 year event on the Skykomish River resulted in approximately 400'x 27'x 3' of non-continuous erosion damage to the Startup training levee. The location at the 1996 repair was also damaged in 2002, exposing the riprap trench and cutting into the levee prism.

In August of 2002, the Corps repaired this new damage by placing 450-feet of class IV riprap and spalls and enforcing with a rock toe. The riprap and spalls were necessary due to the migration of the river adjacent to the training levee, with its subsequent higher energy than for which it was originally designed. The 250' of 1996 repair was also re-sloped with additional rock material. However, neither the original footprint nor the height of the levee was altered in this repair.

1.2 Purpose and Need

Prior to construction, benefits attributable to the proposed levee are calculated on the difference in probabilities associated with the level of protection provided by the levee in the pre-flood condition compared to the post-flood condition. Prior to the flood, the levee prevented damages from floods up to a 7-year event. Damages to the levee from the 2002 winter floods reduced the level of protection to a 1.6-year recurrence event. Benefits resulting from the rehab project consist of the following:

Repair of the levee eliminated potential property damage (up to a 7-year event) to 7 residential structures and contents and eliminated potential clean up costs to 6 barns and equipment. In addition, potential refugee costs for 15 families and damages to ½ mile of Reese Road were eliminated.

1.3 Location

The project is located between the Wallace and Skykomish Rivers in Startup, Washington, right bank, River Mile 18+ (Section 2, T27N, R08E), see *Appendix B*.

1.4 Authorization

The Startup Training Levee Rehabilitation was authorized by Public Law 84-99 (USCA 701n). Corps rehabilitation and restoration work under this authority is limited to flood control works damaged or destroyed by flood. The rehabilitated structure will normally be designed to provide the same degree of protection as the original structure. This project was authorized as having *emergency* status as stated under the PL 84-99 regulations. The Corps determined that if the levee was not repaired by the next flood event, an *imminent threat* of loss of private and/or public property existed.

1.5 NEPA Requirements

As the federal Action Agency for this project, the Corps is required by the National Environmental Policy Act (NEPA) (40 CFR § 1500 et. seq.) to assess the effects to the human environment of proposed agency actions, determine the significance of those effects, and coordinate with other agencies, Tribes, and the interested public in that assessment. The Corps has implemented NEPA through its ER 200-2-2 regulation. This EA has been prepared *after-the-fact*, in accordance with this regulation, which allows for environmental documentation after project construction in emergency situations where sufficient time does not exist to complete the documentation prior to construction.

2 ALTERNATIVES

Four alternatives were evaluated to address project objectives.

2.1 Alternative 1- No Action Alternative

The No Action alternative would have consisted of allowing damage to the existing levee to remain. Further erosion and loss of flood protection would have occurred, and increasing damage to adjacent properties was considered highly likely. This alternative was not considered further.

2.2 Alternative 2- Riprap with Wood

The use of rock (riprap) with incorporated woody material was also explored. Under the appropriate conditions, a combination of rock and woody material can be used as effective bank protection that provides some increase in fish habitat when compared to a pure riprap bank. Corps hydraulic engineers investigating this option determined that because the thalweg of the river was directly adjacent to the project repair, it was not structurally sound to incorporate wood into the rockwork. Therefore, this option was not further considered because it would not provide the necessary level of flood protection and structural stability.

2.3 Alternative 3- Upstream Logjam

Installation of an upstream logjam to deflect flow away from the damaged bank was also considered. While this option might have provided increased fish habitat and reduced future bank erosion at the project site, this alternative would leave the levee in a damaged state and was deemed unfeasible by the project team because of the constraints of the PL84-99 rehabilitation program. The PL84-99 program restricts acquiring offsite real estate and limits funds to *in-kind* levee rehabilitation projects that maintain the existing level of pre-flood protection. The Corps did recognize that an upstream log jam might be a future solution to further bank protection and habitat issues that could be investigated under the Corps' 1135 or 206 programs should a local sponsor initiate a request for a 1135 or 206 project.

2.4 Alternative 4- Preferred Alternative

The preferred alternative repaired the 400' of erosion by placing class IV riprap and spalls and enforcing with a weighted rock toe. The area of the 1996 repair was also re-sloped with some additional rock material. One lift of willows was incorporated into the rock to provide beneficial vegetation along the levee (*see Appendix C*).

Construction began on August 19, 2002 and concluded on August 30, 2002. Equipment utilized included: hydraulic excavator, dump truck, and bulldozer. Construction occurred during the July 15 – August 31, 2003 work window established by the Washington Department of Fish and Wildlife (WDFW) when juvenile salmonids are least likely to be

in the area. Construction vehicles accessed the site by the existing road located on top of the levee. Construction vehicles were staged in the field on the backside of the levee, away from the river.

In addition, construction best management practices (BMPs) as suggested by the Washington State Department of Ecology were implemented. See Table 1.

Table 1. BMPs Implemented During Construction

1. Equipment used near the water was cleaned prior to construction.
2. Work was conducted during a period of low flow.
3. Biodegradable hydraulic fluids were used in machinery at the site.
4. Refueling occurred on the backside of the levee.
5. Construction equipment was regularly checked for drips or leaks.
6. At least one fuel spill kit with absorbent pads was onsite at all times.
7. Drive trains of equipment did not operate in the water.
8. At least one biologist was onsite during the majority of construction.
9. Water quality was monitored during construction.

2.5 Existing conditions

2.5.1 Introduction/General Setting

The Skykomish-Snohomish Valley is quite broad and ranging up to two miles wide. It presents mainly cleared farmland with intermittent strips of deciduous growth. Bordering hillsides are moderately steep, most with relatively dense conifer-deciduous cover. Agriculture is the major land use, with some logging on adjacent slopes. Gravel mining is also important. Scattered rural and suburban residences exist in a number of areas across the valley, as well as over some surrounding slopes (Williams et al 1975).

2.6 Elements of the Natural Environment

2.6.1 Geology/Soil

The project is located on the southern edge of the Puyallup fine sandy loam soil unit. Pilchuck loamy sand is located on the adjacent flood plain to the south. The Puyallup fine sandy loam is a very deep soil found on terraces where it formed in alluvium of mixed origin. It is typically characterized by a surface layer of very dark grayish brown fine sandy loam about 10 inches thick, then a dark grayish brown and olive brown fine sandy loam about 20 inches thick, which is underlain by a dark grayish brown sand to a depth of 60 inches or more.

2.6.2 *Surface Water*

The mainstem of the Skykomish River, below the confluence of the North and South Forks, extends generally west 30 miles until its confluence with the Snohomish River. This lower stretch of the river is predominantly pool-riffle type stream.

2.6.3 *Plant Communities*

Prior to construction, the levee in this repair stretch was covered primarily with blackberry (*Rubus spp.*). According to the Washington Department of Natural Resources (WDNR) Natural Heritage Program web page, there are 20 species on the WDNR rare plants web-based list in Snohomish County (<http://www.dnr.wa.gov/nhp/refdesk/lists/plantsxco/Snohomish.html>). None of these plants or their associated communities are known from the site.

2.6.4 *Fish*

The Snohomish/Skykomish River system is inhabited by steelhead, chinook, coho, pink, and chum salmon. Bull trout are also present in the system. The project reach provides transportation for all salmon species utilizing the upper river basins. Chinook, coho, pink, and chum salmon use this area, spawning in the main river and its numerous side channels. Juvenile rearing takes place within all accessible waters in the reach.

Chinook spawning is not believed to occur directly adjacent to the project site because of the high river velocities and the location of the thalweg against the training levee. It is also unlikely that juveniles would be found directly adjacent to the levee, but rather upstream or downstream from the project in areas of slower water.

2.6.5 *Wildlife*

Minimal wildlife use observed or expected to be found near the project site prior to construction. Small birds and mammals may have fed on existing blackberry patches.

2.6.6 *Endangered Species*

The project area has been designated as Essential Fish Habitat (EFH) for various life stages of Pacific salmon. EFH for Pacific salmon consists of 4 major components: (1) spawning and incubation; (2) juvenile rearing; (3) juvenile migration corridors; (4) adult migration corridors and adult holding habitat. Important features of essential habitat for spawning, rearing, and migration include adequate: (1) substrate composition; (2) water quality (e.g. dissolved oxygen, nutrients, temperature, etc.); (3) water quantity, depth and velocity; (4) channel gradient and stability; (5) food; (6) cover and habitat complexity (e.g. large woody debris, pools, channel complexity, aquatic vegetation, etc.); (7) space; (8) access and passage; and (9) flood plain and habitat connectivity.

Three species protected under the Endangered Species Act of 1973 (16 USC 1531-1544) potentially occur in the project vicinity. A list of species potentially affected by the proposed project was requested from the U.S. Fish and Wildlife Service (USFWS). National Marine Fisheries Service (NMFS) Northwest Region web site

(<http://www.nwr.noaa.gov/1habcon/habweb/listnwr.htm>) was consulted to determine which species under NMFS jurisdiction potentially occur in the project area. Table 1 summarizes the information received from USFWS and NMFS.

Table 2. ESA Listed Species that Potentially Occur in the Project Vicinity

Species	Listing Status	Critical Habitat
Bald Eagle <i>Haliaeetus leucocephalus</i>	Threatened	—
Coastal/Puget Sound Bull Trout <i>Salvelinus confluentus</i>	Threatened	—
Puget Sound Chinook Salmon <i>Oncorhynchus tshawytscha</i>	Threatened	Designated
Puget Sound/Strait of Georgia Coho Salmon <i>Oncorhynchus kisutch</i>	Candidate	—

2.6.6.1 Bald Eagle

According to the WDFW priority habitat and species database, bald eagle nests and a communal night roost are located within several miles of the project area. However, the project was constructed after the end of the nesting seasons and it was also very unlikely that eagles would have begun using the communal night roost. No eagles were observed during construction.

2.6.6.2 Coastal/Puget Sound Bull Trout

Reproducing populations of bull trout have been documented in the upper Skykomish River basin. Anadromous, fluvial, and resident life history forms are all found in the Skykomish River system, at times spawning at the same time and place (Kramer 1994). Genetic exchange probably occurs among these forms, based on spawning observations and the sizes of spawners. Spawning occurs from late August to early or mid-November but is more typically seen between the first week in October and the first week in November. Spawning commences as the temperature drops to about 8° C and decreases when the water temperature increases above 8° C.

Bull trout are apex predators that remain in places where prey is abundant. Bull trout will also follow prey around, such as migrating juvenile salmon. It is unlikely that bull trout would be located adjacent to the project area because the existing conditions (fast water and little cover) are not favorable for juvenile salmonids or other bull trout prey items.

2.6.6.3 Puget Sound Chinook Salmon

The 1994 WDFW Salmon and Steelhead Stock Inventory defines three stocks of chinook that can be found near the project reach: 1) Snohomish Summer chinook, 2) Snohomish Fall chinook, and 3) Wallace River Summer/Fall chinook.

The stock most likely to found near the project reach are Snohomish Summer chinook, which spawn in the mainstem Snohomish River and the mainstem Skykomish Rivers and associated tributaries in September. The stock origin is considered native. The Skykomish River from Sultan to Goldbar, which includes the project area, is a primary spawning reach for chinook and regularly supports heavy concentrations of spawners (WDFW 1999; Puget Sound TRT 2001). Spawning has been observed above and below the project reach, however, spawning does not occur adjacent to the levee because the thalweg of the river is directly against the levee (Aldrich, 2002) creating high velocities. No spawning was observed adjacent to the project before or during construction, likely because this reach did not contain the necessary habitat requirements for spawning. A snorkel survey was conducted during construction by Washington Trout, and observed no adult chinook adjacent to the project site.

2.6.6.4 Puget Sound/Strait of Georgia Coho Salmon

In July 1995, NMFS determined that listing was not warranted for the Puget Sound/Strait of Georgia Evolutionarily Significant Unit (ESU) coho salmon. However, the ESU is designated as a candidate for listing due to concerns over specific risk factors.

Coho salmon within this ESU are abundant and, with some exceptions, run sizes and natural spawning escapements have been generally stable. However, artificial propagation of coho salmon appears to have had a substantial impact on native, natural coho salmon populations, to the point that it is difficult to identify self-sustaining, native stocks within this region (Weitkamp et al. 1995). In addition, continuing loss of habitat, extremely high harvest rates, and a severe recent decline in average size of spawners indicate that there are substantial risks to whatever native production remains. There is concern that if present trends continue, this ESU is likely to become endangered in the foreseeable future (Weitkamp et al. 1995).

2.7 Elements of the Built Environment

2.7.1 Land and Shoreline Use

Land use adjacent to and in the vicinity of the project includes private residences and small farms.

2.7.2 Cultural Resources

Corps cultural resources investigations were coordinated with the Tulalip Tribes and the Washington State Historic Preservation Office regarding the project design and construction.

2.7.3 Native American Issues

The Tulalip Tribes are co-managers of the river with WDFW. During the design, construction, and post-construction phases the Corps coordinated with the Tribe. Tribal representatives have expressed concerns about project impacts to fish habitat and suggested the need for environmental restoration work near the project site¹. Corps archeologists also coordinated with the Tribe to discuss any relevant cultural resources issues.

2.7.4 Recreation

Local recreation consists of fishing and boating in the river around the project site. The levee is adjacent to private land and therefore public recreation does not occur at the site, except occasionally by boat.

2.7.5 Noise

No noise pollution producing sources exist in the project vicinity. There are no industrial noise sources, major highways, or other loud activities.

2.7.6 Air Quality

Air quality in Snohomish County and at the site is regulated by the Puget Sound Clean Air Agency. Motor vehicles are the largest source of air pollutants in Snohomish County, although wood-burning stoves also contribute. Problems generally occur during the dry late summer when minimal wind conditions persist for long periods of time, or during mid-winter thermal inversions. Particulates, sulfur dioxide, ozone, and carbon monoxide are the pollutants of concern.

2.7.7 Environmental Health/ Hazardous and Toxic Waste

There are no known hazardous or toxic waste sources or sites in the area. Surveys of the site by Corps' biologists revealed no HTRW threats on the site or within the project footprint.

¹ The Corps acknowledged Tribal habitat restoration concerns and explained that the habitat restoration options under the PL84-99 authority are limited, and perhaps a future Corps project under the 206 or 1135 program could focus on environmental restoration in the reach.

3 ENVIRONMENTAL EFFECTS OF THE SELECTED ALTERNATIVE

3.1 Existing Conditions

3.1.1 General Setting/ Climate

The Corps believes there were no effects to the climate or general setting of the project. The work conducted merely returned the flood damage reduction function of the existing levee to its prior levels.

3.2 Elements of the Natural Environment

3.2.1 Geology/ Soils

This was a replacement in kind of a pre-existing levee structure. The Corp believes there was no effect to local geology or soils from this repair project, other than preventing future erosion at the project site by armoring the bank with additional riprap.

3.2.2 Surface water

The Corps expects no significant effects to surface waters from this levee rehabilitation. Flows in the Skykomish River were not significantly altered, and no shift in the thalweg is believed to have occurred. Turbidity was monitored during construction and turbid water was not observed beyond a 300 ft mixing zone.

3.2.3 Plant Communities

During construction, the existing blackberry was mowed and any new rockwork was supplemented with willow (*Salix species*) plantings. These willows are anticipated to grow rapidly and provide cover and shade for migrating and rearing salmonids. The willows will also support insect production, which provides an important food source for rearing juveniles. Willows were underrepresented in the existing vegetation, which was not a very diverse riparian community.

3.2.4 Fish

The project design provided beneficial effects to fish from the inclusion of willow plantings in the levee rehabilitation. These plantings will increase habitat complexity, provide prey organisms, and increase shade and refuge for fish.

No adult salmonids were observed adjacent to project during construction. Increases in turbidity were minimal and short term; likely having minor impacts, if any, to any early spawning salmonids downstream of the project.

3.2.5 Wildlife

No effects to local wildlife were observed from the project. No wildlife were observed at the project site, and no distressed animals were encountered during the project.

3.2.6 Endangered Species

Construction work occurred during the NMFS fish window for in-water work, July 15 through August 31. This fish window corresponds to the portion of the year when juvenile chinook are least likely to be present in the Skykomish River. This period also allowed construction work to occur prior to the peak of chinook spawning, although some adult fish were observed in the river system at the time of construction (Aldrich, 2002). The effects of the proposed action on bull trout were similar to those described for chinook. This fish window also corresponds to the portion of the year when bull trout are least likely to be present in the Skykomish River. Willow plantings incorporated into the repair design provided cover and helped increase prey production for bull trout and other salmonids.

The Corps has determined that the described action did not reduce the quality and/or quantity of EFH for Pacific salmon. No adverse effects to EFH were observed to result from the described action.

A Biological Assessment was submitted the Services in March 2003. Section 7 consultations are currently underway with NOAA Fisheries and the U.S. Fish and Wildlife Service. Table 3 summarizes the effect determinations made in the Biological Assessment for each of the species potentially occurring in the project vicinity.

Table 3. Determination Summary

Species	Effect Determination	Critical Habitat Determination
Bald Eagle	Not likely to adversely affect	—
Bull Trout	Not likely to adversely affect	—
Chinook	Not likely to adversely affect	---

3.3 Elements of the Built Environment

3.3.1 Land and Shoreline Use

As this project rehabilitated an existing levee, there was no observed effect to land and shoreline use or character from this project.

3.3.2 Cultural Resources

There were no observed harmful effects to cultural resources resulting from the project construction.

3.3.3 Native American Issues

There were no observed harmful effects to Native American issues or interests from this project. The Corps coordinated habitat and cultural resource issues with the Tulalip Tribes.

3.3.4 Recreation

There were no observed effects to recreation from the project. Recreational boat traffic was not impeded by project construction.

3.3.5 Noise

There were minor and temporary effects to noise levels onsite during construction. These effects were due to operation of construction machinery, and did not persist after construction.

3.3.6 Air Quality

Because of the minimal amount of construction equipment (bulldozer, excavator, and dumptruck), air quality impacts from the operation of construction machinery were likely *de minimus* under current EPA regulations. No significant effect to local air quality occurred as a result of the project.

3.3.7 Environmental Health/ Hazardous and Toxic Waste

There were no effects to Environmental health or hazardous and toxic waste from the project.

4 LEGAL, POLICY AND REGULATORY CONSTRAINTS/COMPLIANCE AND RELATIONSHIP TO OTHER PLANS

Compliance with the following laws and regulations are required for the proposed action:

Table 4. Environmental Compliance

Law/Policy/Regulation	Compliance Action
1. Clean Water Act (§ 401 & 404)	Exempt (33CFR 323.3)
2. Coastal Zone Management Act (16 USC 1451) Sec 307 (c)(1)	Exempt (repair of existing structure)
3. Endangered Species Act (Sec 7)	BA submitted to NOAA Fisheries and FWS and consultation is underway
4. National Historic Preservation Act (16 USC 470)	Coordination with SHPO is underway
5. Clean Air Act (Pl 91-604)	This document
6. National Environmental Policy Act	FONSI will be signed after Final EA
7. Executive Order (E.O.) 11988 Flood Plain Management	Satisfied – no additional damage to or building within the floodplain will occur
8. E.O. 12898 Environmental Justice in Minority populations	Satisfied –extensive coordination with local Tribe addressed concerns

This draft EA was provided to the following agencies, Tribes and the interested public for public review and comment:

- NOAA Fisheries (formerly National Marine Fisheries Service)
- U.S. Fish and Wildlife Service
- U.S. Environmental Protection Agency
- Snohomish County
- Washington Department of Fish and Wildlife
- Washington Department of Ecology
- Washington Department of Natural Resources
- Tulalip Tribes

4.1 Coordination and Comments

During the design of this project, the Corps coordinated with various state, federal, Tribal, and local agencies to discuss design alternatives and potential impacts to the project vicinity. Contacts are listed in Table 5.

Table 5. Project Coordination

Agency	Contact	Title
Washington Department of Fish and Wildlife (WDFW)	Doug Hennick	Area Habitat Biologist
US Fish and Wildlife Service (USFWS)	Lou Ellyn Jones	Fishery Biologist
National Marine Fisheries Service (NMFS)	Tom Sibley	North Puget Sound Team Lead
Tulalip Tribes	Ann Savery	Habitat Biologist
Snohomish County	Bob Aldrich	Biologist

4.2 Conclusion

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

5 REFERENCES

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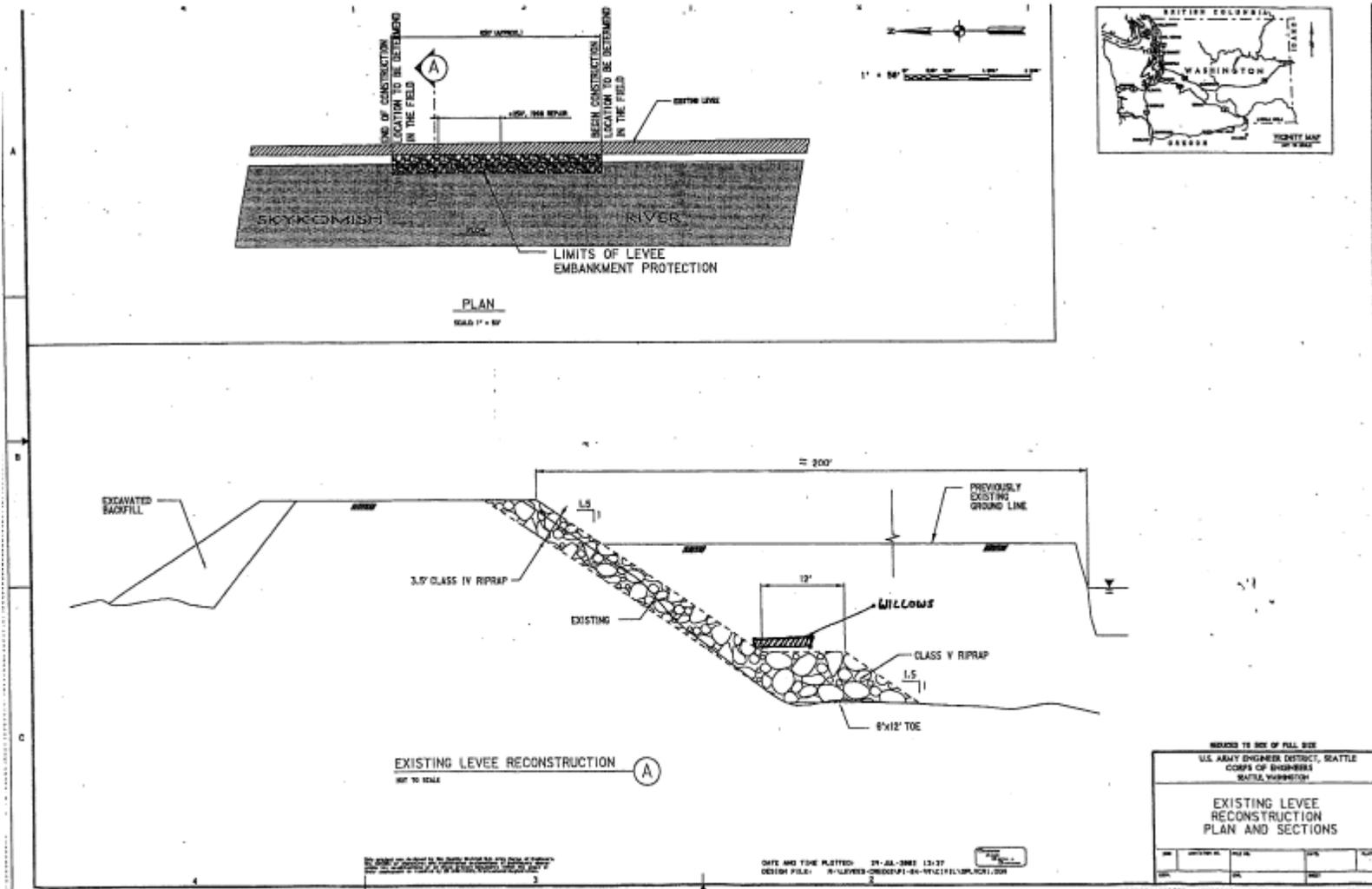
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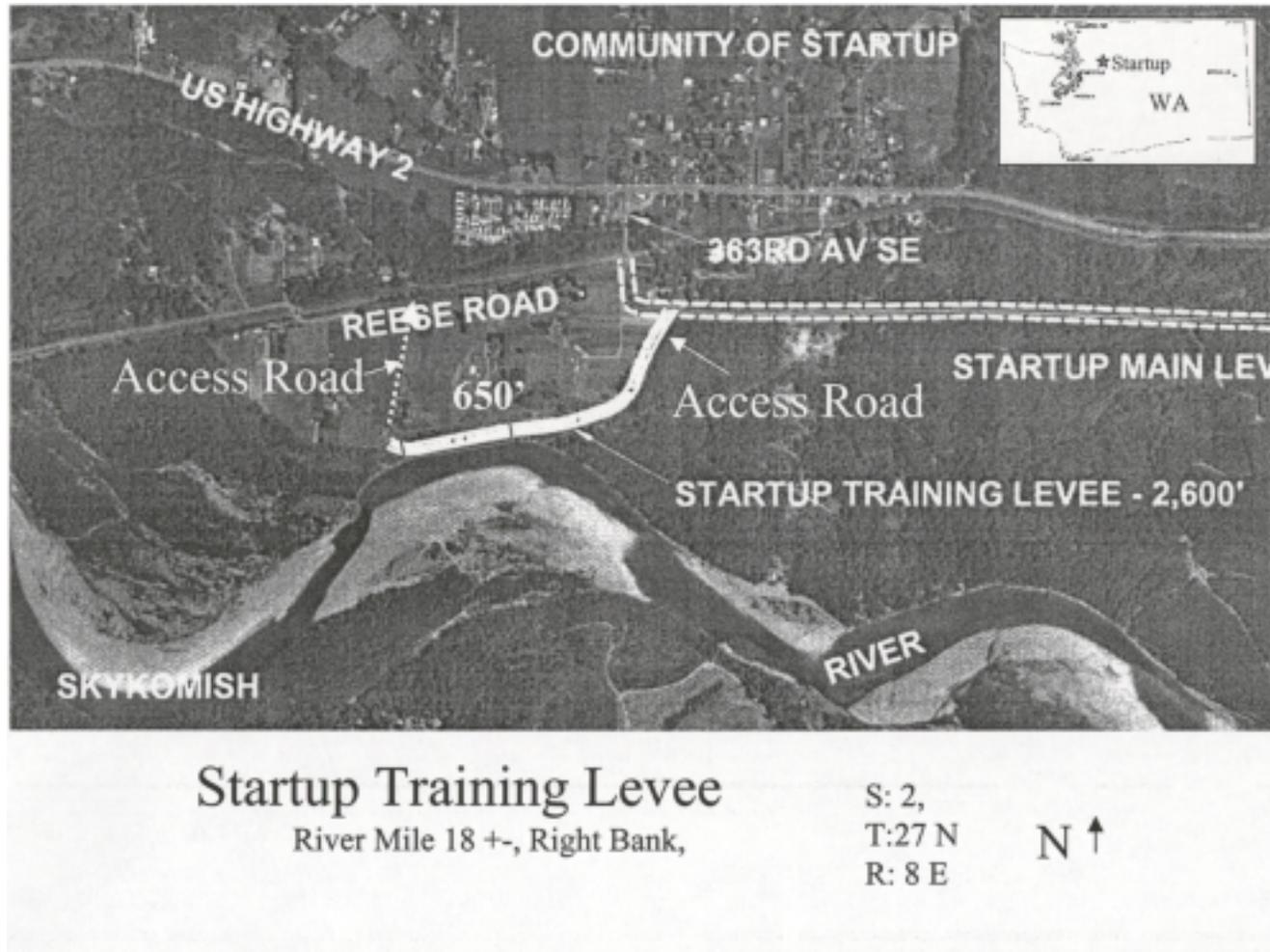
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6 APPENDICES

6.1 Appendix A. Project Drawings



6.2 Appendix B. Project Map



6.3 Appendix C. Project Photos



Photo 1. Damaged levee (area of the 1996 repair) before any 2002 construction.



Photo 2. Existing riprap before the 2002 repair.



Photo 3. Eroded bank before repair.



Photo 4. Adjacent property.



Photo 5. Adjacent property.



Photo 6. 2002 Construction: - rockwork and laying of dirt for willows.



Photo 7. Willow stakes.



Photo 8. Watering willows.



Photo 9. Willow growth two weeks after planting.



Photo 10. Finished repair.

CENWS-PM-PL-ER

March 22, 2004

FINDING OF NO SIGNIFICANT IMPACT

Startup Training Levee Rehabilitation Project
Skykomish River, Snohomish County, Washington

1. Proposed Action. During the summer of 2002, the Seattle District of the U.S. Army Corps of Engineers (Corps), and Snohomish County as the non-federal sponsor, constructed the Startup Training Levee Rehabilitation Project from August 19 through August 30.

The Startup levee system is a Federal levee system designed for flood control to provide protection from periodic, recurring floods. The main levee was completed in 1965 and the training levee, also constructed by the Corps, was completed in 1969. The levee system includes a 7000-foot long flood control levee, constructed between the Skykomish and Wallace Rivers. The upstream and downstream ends of the levee tie into a Great Northern Railroad embankment, which serves as part of the levee system. The original project was built to protect Startup from periods of flooding (up to a 50-year recurrence interval) when the Skykomish River overflowed into the Wallace River in the vicinity of Startup. The levee, however, did not provide flood protection for 30 acres of farmland and urban structures near the downstream limits of the levee. The Startup training levee was built to provide this additional protection, extending downstream from the main levee 2600 feet and tying into high ground.

Channel migration since the late 1960's has resulted in a shift of the main river channel and thalweg to directly against the training levee structure. The earthen training levee was not originally designed to receive constant flow from the river's thalweg. The levee was damaged during the flood events of January 7-9, 2002, and a subsequent peak flow event on February 22, 2002.

The repair project included placing 450-feet of class IV riprap and spalls and enforcing with a rock toe. An additional 250' of the levee at the location of a previous 1996 Corps rehabilitation project was re-sloped with rock material. Willow plantings were incorporated throughout the length of the repair.

Repair of the levee eliminated potential property damage (up to a 7-year event) to 7 residential structures and contents and eliminated potential clean up costs to 6 barns and equipment. In addition, potential refugee costs for 15 families and damages to ½ mile of Reese Road were eliminated. Repairs to the levee potentially impacted the resources adjacent to the levee as well as downstream of the construction site.

2. Summary of Impacts. Impacts from the rehabilitation action were minor and temporary in nature. Specifically, existing non-native vegetation was removed from the levee form and the noise disturbance created by use of machinery; air quality impacts was determined to be *de minimus*. The Corps is consulting with the U.S. Fish and Wildlife Service and NOAA Fisheries on a finding of *May Affect, Not likely to Adversely Affect* for endangered species in the area. The Corps coordinated necessary cultural resources investigations and compliance with the Tulalip Tribes and the Washington State Historic Preservation Officer. There are no wetlands on the site; no connection to waters of the U.S.; no wetlands were filled during the rehabilitation of the levee. There will be no impacts to wetlands or waters of the U.S. Beneficial effects are expected to the local plant community and to fish habitat from the project.

3. Finding of No Significant Impact. I have determined that the proposed action is in accordance with the environmental documentation, and that planning for this project complies with all applicable laws, regulations, and agency consultations, including the Endangered Species Act, Fish and Wildlife Coordination Act, and National Environmental Policy Act. Based on the analysis described above and provided in more detail in the accompanying Environmental Assessment, this project is not a major Federal action significantly affecting the quality of human environment, and therefore, does not require preparation of an environmental impact statement.

Date

Corps of Engineers

DEBRA M. LEWIS
Colonel,