

Environmental Assessment

Startup Training Levee Flood Fight

Snohomish County, Washington
January 18, 2005



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

**Startup Training Levee Flood Fight
Snohomish County, Washington
18 January 2005**

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

Please send questions and requests for additional information to:

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1 INTRODUCTION

1.1 Background

During the winter of 2005, the Seattle District, United States Army Corps of Engineers (Corps), and Snohomish County as the non-federal sponsor, initiated a flood fight, at the County's request, to repair a damaged section of the Startup Levee. Work was conducted between 18 and 19 January 2005. The Startup levee is part of 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. Though this levee segment is part of the formal levee system, its 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 and is therefore susceptible to erosion. Erosion has occurred at the site and resulted in several remedial actions.

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 has continued toward the training since the 1996 repair. 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 or previous repairs.

Since 2002, the Skykomish River has continued to erode upstream of the earlier repairs and resulted in extensive damage to the levee prism in the January 2005 floods. On January 18, 2005, Snohomish County declared an emergency at the location and requested assistance from the Corps. The Corps responded to the site and initiated actions to reconstruct the eroded levee prism through the placement of large armor rock (rip rap). The work extended for approximately 200 ft and was ended at the upstream limit of levee damage. The levee footprint and height was not altered.

1.2 Purpose and Need

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. The purpose of the repairs was to arrest active erosion at the Startup levee limited to the areas of active erosion and the existing footprint. Emergency repairs to the levee were needed to eliminate an imminent threat of 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 A*.

1.4 Authorization

The Startup Training Levee Flood Fight 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. Flood fight responses are designed to temporarily arrest active levee erosion to 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 flood fight was initiated after consultation with the local sponsor, Snohomish County. The Corps determined that the levee represented an *imminent threat* to life and private and/or public property.

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. 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

Three 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. Additional erosion and loss of flood protection would have occurred, and resulted in a breach of the levee prism and damage to adjacent properties. This alternative was not selected as the levee segment was within the PL 84-99 program and an active request was made by the County for assistance and the emergency confirmed by U.S. Army Corps of Engineers representative prior to action.

2.2 Alternative 3- Upstream Logjam

Discussions which occurred at this location as part of the 2002 rehabilitation identified an alternative to install an upstream logjam to deflect flow away from the damaged bank. While this option might have provided increased fish habitat and reduced future bank erosion at the project site, this alternative would left the levee in a damaged state and was deemed unfeasible by the project team because of the constraints of the PL84-99 rehabilitation program, time available to conduct the repairs and character of the Skykomish River at the time work was completed. 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 other federal or state programs but was dropped from consideration during the flood fight.

2.3 Alternative 4- Repair of Levee using Large Angular rock- Preferred Alternative

The preferred alternative repaired the 200' of erosion by placing class IV riprap and spalls (*Appendix B*). The work was conducted during the flood event which prevented the placement of an engineered toe structure. Woody structures to be placed adjacent to the eroded levee section was discussed but eliminated due to high flood water levels and unknown soil conditions on the affected bench (*Appendix C*).

Construction began on the evening of January 18, 2005 and concluded late the next day January 19, 2005. Equipment utilized included: hydraulic excavator, dump truck, and bulldozer. Construction occurred during the when the river was above flood stage of 15 ft Mean Sea Level (MSL) and in coordination with the US Fish and Wildlife Service

(USFWS), National Marine Fisheries Service (NMFS), Tulalip Tribes, Washington Department of Fish and Wildlife (WDFW) and Snohomish County. 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, the following construction best management practices (BMPs) were implemented as practicable See Table 1.

Table 1. BMPs Implemented During Construction

1. Equipment used near the water was clean prior to construction.
2. Work was conducted efficiently with a minimum of rock and equipment.
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 available or onsite during the construction.
9. Rock used in the repair was clean of debris and obtained from an established quarry.

2.4 Existing conditions

2.4.1 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). Several flood control structures control flood damages on the Wallace and Skykomish Rivers.

2.5 Elements of the Natural Environment

2.5.1 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.

2.5.2 *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.

2.5.3 *Plant Communities*

Prior to construction, the levee in this repair stretch was covered primarily with blackberry (*Rubus spp.*) and grasses. A few small willows were present upstream of the repair as were willows planted as part of the 2002 repair immediately downstream. 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 to exist at the site.

2.5.4 *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.

2.5.5 *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. Blacktail deer and other mammals frequent the wooded areas adjacent to the river and feed in nearby fields.

2.5.6 *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	—

2.5.6.1 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 but none are located within 1 mile. Wintering bald eagles frequent the Skykomish River and were observed in the general area during the emergency repair. Adult eagles were seen perching in nearby trees and actively feeding on gravel bars within visual distance of the repair. Bald eagle perch trees were not affected by the repairs.

2.5.6.2 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 turbid

water and little cover) are not favorable for juvenile salmonids or other bull trout prey items.

2.5.6.3 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 (Corps, 2002) creating high velocities. Spawning activity was concluded prior to the repair and adult Chinook were not observed adjacent to the project before or during construction. Adult Chinook would have expired prior to the emergency repairs and juvenile Chinook immergence would have not fully begun.

2.5.6.4 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).

2.6 Elements of the Built Environment

Land and Shoreline Use

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

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.

Native American Issues

The Tulalip Tribes are co-managers of the river with WDFW. During the emergency repairs, construction Corps coordinated with the Tribe. Tribal representatives were onsite to provide input and express their interests. The tribe has previously 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.

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.

Noise

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

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.

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 flood fight authority are limited. Future planned PL-84-99 rehabilitation of this site may include additional fish enhancement feature but will not address long term solutions to erosion at the site.

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.

3.2.3 *Plant Communities*

At the time of the flood fight, most existing vegetation within the project boundaries was eroded from the levee prism. Vegetation present immediately downstream consisted of willows planted in association with the 2002 levee rehabilitation. The tops of these willows were evident above the flood waters. Immediately upstream, a bench supported several specimens of alder and willow. These trees were approximately 20 feet high and several were lost due to eroding banks at the time of the repair. Grasses and pioneer shrubs (blackberry) were sparsely located on the prism but outside the repair boundary.

3.2.4 *Fish*

No adult salmonids were observed adjacent to project during construction though adult steelhead were likely to be in the reach. Increases in turbidity were minimal compared to the background, localized and short term; likely having minor impacts, if any, to any existing redds located downstream of the project.

Juvenile salmonids would have either migrated to Puget Sound or overwintered in areas of greater productivity and less water velocity. Previous work indicated that adult spawning does occur in the area of the repair but no data exists on whether redds were located immediately adjacent to the erosion or whether they were eroded prior to construction.

3.2.5 *Wildlife*

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

3.2.6 *Endangered Species*

Construction work occurred in January 2005 at flood flows during a period when adult and free-swimming juvenile Chinook are unlikely to be present in the project area. Chinook eggs and immigrating fry would be located in the greater Skykomish River but no effects are known to have occurred to specific redds adjacent to the repair. The effects of the proposed action on bull trout would be limited to adult bull trout as they migrate upstream and through the action area to more favorable spawning grounds.

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. Future actions within the PL 84-99 program will enhance the area of the repairs and ensure secondary adverse effects are avoided.

A Biological Assessment was submitted the Services in March 2005. 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	No Affect

3.3 *Elements of the Built Environment*

3.3.1 *Land and Shoreline Use*

As this project repaired 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 though arresting of active erosion may have beneficial effects to known cultural resource sites.

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 and continues to coordinate on tribal issues.

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

The construction area is not located in a non-attainment area but is located in a maintenance area for ozone. 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)	Consistent to the maximum extent practicable
3. Endangered Species Act (Sec 7)	BE submitted to NOAA Fisheries and USFWS.
4. National Historic Preservation Act (16 USC 470)	Coordination with SHPO is concurrent
5. Clean Air Act (PI 91-604)	Satisfied.
6. National Environmental Policy Act	FONSI will be signed after Final EA

7. Executive Order (E.O.) 11988 Flood Plain Management	Satisfied – no additional levels of flood protection were granted.
8. E.O. 12898 Environmental Justice in Minority populations	Satisfied –extensive coordination with local Tribe addressed concerns

4.1 Coordination and Comments

During the implementation of this emergency action, 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)	Bob Pfeifer	Area Habitat Biologist
US Fish and Wildlife Service (USFWS)	Tom McDowell	Federal Projects Lead.
National Marine Fisheries Service (NMFS)	Tom Sibley	NPS Team Lead
Tulalip Tribes	David Luzi	Tribal Geomorphologist
Snohomish County	Bob Aldrich	Biologist

The Corps has prepared this environmental assessment for the records as an *after-the-fact* document. All public involvement for the actual work was conducted at the time of the repair. This document shall be made available to the public or interested parties upon request.

4.2 Conclusion

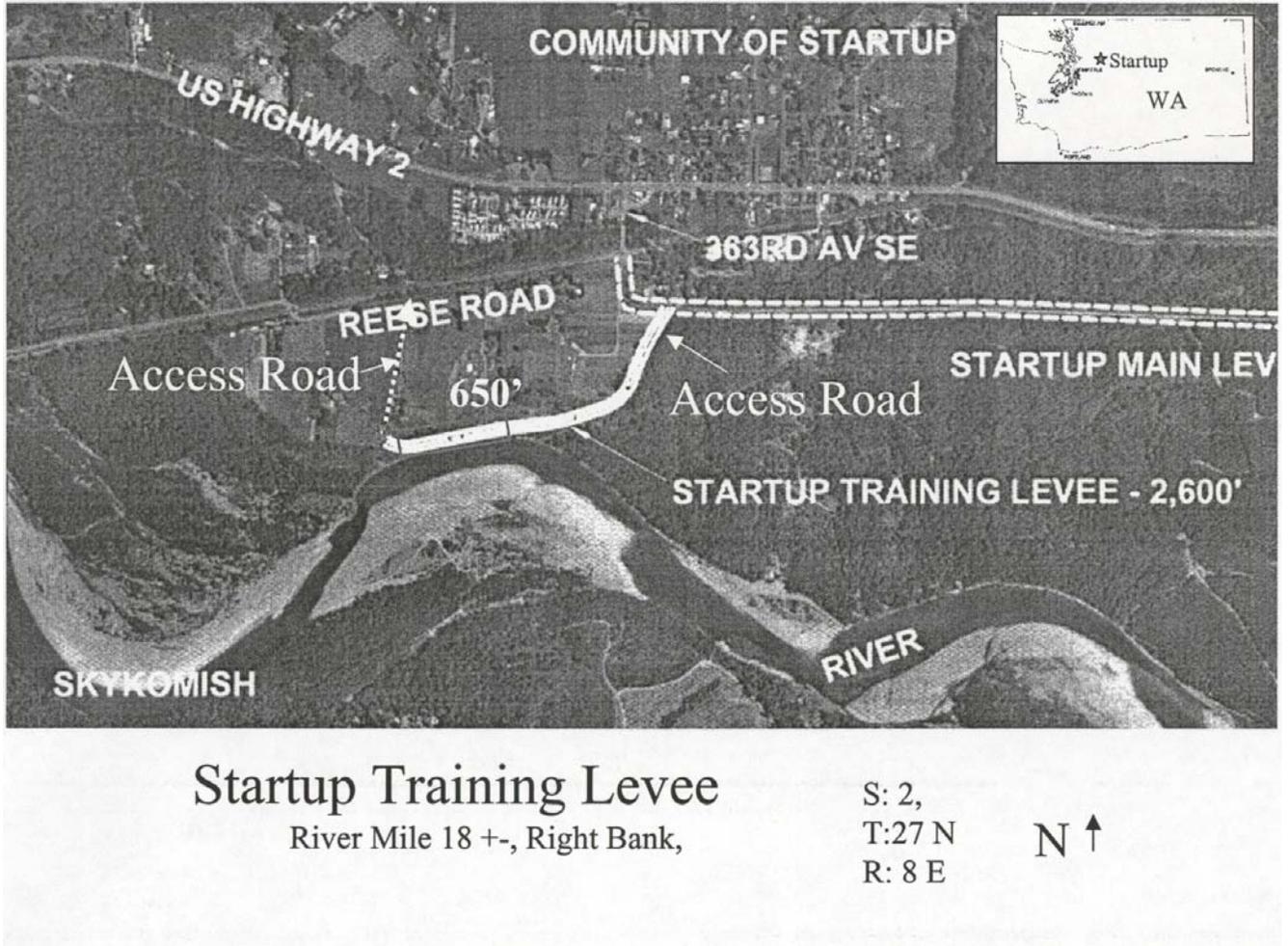
Based on the above analysis, the emergency repairs initiated at the Startup Training Levee was not a major Federal action significantly affecting the quality of the human environment and therefore does not require preparation of an environmental impact statement.

5 REFERENCES

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6 APPENDICES

6.1 Appendix A. Project Vicinity Map

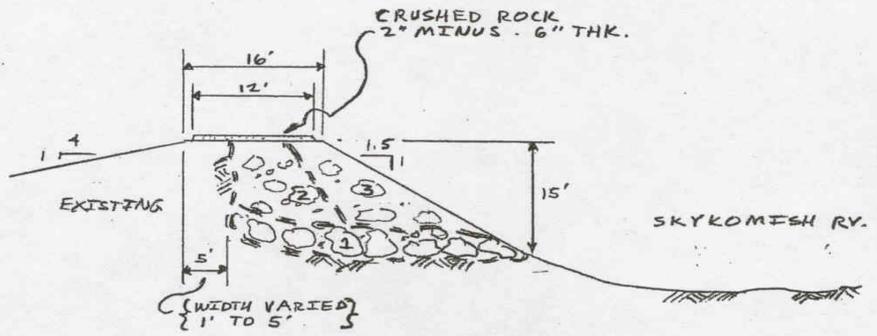


6.2 Appendix B. Project Drawings

ENGINEERING DESIGN SHEET

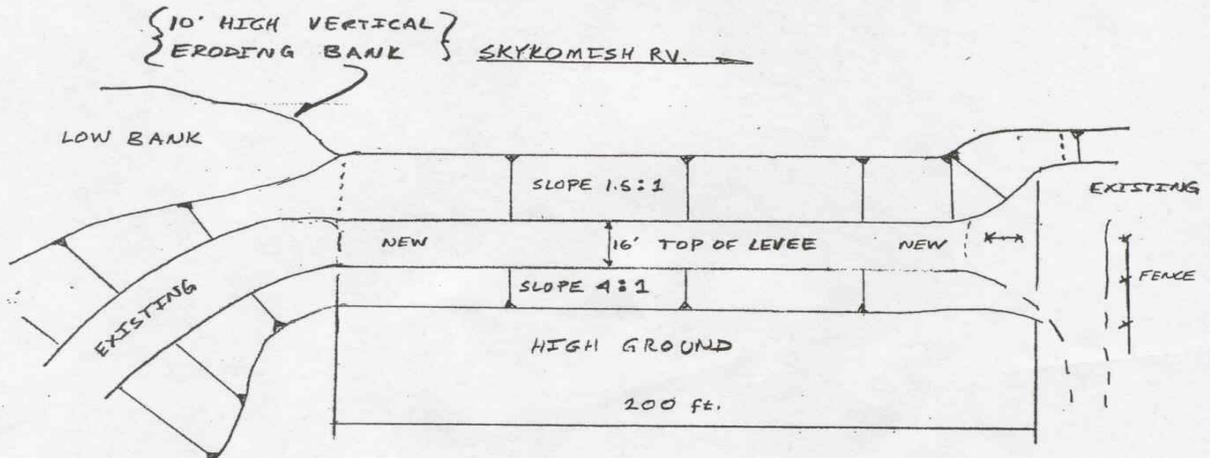
OFFICE SYMBOL:

PROJECT STARTUP LEVEE, WA	COMPUTED BY PFA	DATE: 20 JAN 05
SUBJECT AS-BUILT	CHECKED BY	SHEET: 1 OF 1
		PART:



1. 18" - 48" ANGULAR ROCK
2. 24" MINUS ANGULAR ROCK
3. 36" MINUS ANGULAR ROCK

TYPICAL SECTION
SCALE 1" = 20'



PLAN VIEW
SCALE 1" = 50'

* MEASUREMENTS OUTSIDE OF 200' NEW LEVEE APPROX.

6.3 Appendix C. Project Photos

Photo 1. Startup levee prior to flood fight. Erosion limits were greater than shown at time of flood fight.



Photo 2. Levee prism after flood fight. Scope and alignment was dictated by erosion limits.



Photo 3. View showing end of flood fight and upstream limit of work.



Photo 4. Area of remaining bench upstream of revetment work.





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

REPLY TO
ATTENTION OF

CENWS-PM-PL-ER

April 12, 2005

DRAFT FINDING OF NO SIGNIFICANT IMPACT

Startup Training Levee Flood Fight

Skykomish River, Snohomish County, Washington

1. Proposed Action. During the winter of 2005, the Seattle District of the U.S. Army Corps of Engineers (Corps), and Snohomish County as the non-federal sponsor, conducted an emergency flood fight at the Startup Training Levee between January 18 and January 19.

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. As a result previous levee erosion was repaired in 2002. This action was a response to recent flood damage immediately upstream of the 2002 repair.

The repair project included placing 200-feet of class IV riprap and spalls while the Skykomish River was above flood stage.

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 flood fight 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 repair of the levee. There will be no impacts to wetlands or waters of the U.S.

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

DEBRA M. LEWIS
Colonel,
U.S. Army Corps of Engineers