

Draft Environmental Assessment

2005 Startup Training Levee Rehabilitation

Snohomish County, Washington



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

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Snohomish County, Washington**

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

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TABLE OF CONTENTS

1	Introduction.....	1
1.1	Background.....	1
1.2	Purpose and Need	1
1.3	Location	2
1.4	Authorization	2
1.5	NEPA Requirements.....	2
2	Alternatives.....	2
2.1	Alternative 1- No Action Alternative	2
2.2	Alternative 2- Riprap with Wood	3
2.3	Alternative 3- Upstream Logjam	3
2.4	Alternative 4- Preferred Alternative	3
2.5	Existing conditions.....	4
2.5.1	Introduction/General Setting.....	4
2.6	Elements of the Natural Environment.....	4
2.6.1	Geology/Soil	4
2.6.2	Surface Water.....	5
2.6.3	Plant Communities.....	5
2.6.4	Fish.....	5
2.6.5	Wildlife	5
2.6.6	Endangered Species	5
2.7	Elements of the Built Environment.....	7
3	Environmental Effects of the Selected Alternative.....	9
3.1	Existing Conditions.....	9
3.1.1	General Setting/ Climate.....	9
3.2	Elements of the Natural Environment.....	9
3.2.1	Geology/ Soils.....	9
3.2.2	Surface water	9
3.2.3	Plant Communities.....	9
3.2.4	Fish.....	9
3.2.5	Wildlife	10
3.2.6	Endangered Species	10
3.3	Elements of the Built Environment.....	11
3.3.1	Land and Shoreline Use	11
3.3.2	Cultural Resources	11
3.3.3	Native American Issues	11
3.3.4	Recreation	11
3.3.5	Noise and Air Quality	11
3.3.6	Environmental Health/ Hazardous and Toxic Waste.....	11
4	Cumulative and indirect Effects.....	12
5	Legal, Policy and Regulatory Constraints/Compliance and Relationship to other Plans.....	13
5.1	Coordination and Comments	14

5.2	Conclusion	14
6	References.....	15

List of Tables

Table 1.	BMPs Implemented During Construction	4
Table 2.	ESA Listed Species that Potentially Occur in the Project Vicinity	6
Table 3.	Determination Summary	10
Table 4.	Environmental Compliance	13
Table 5.	Project Coordination	14

Appendices

- Appendix A Project Vicinity Map
- Appendix B Project Drawings
- Appendix C Project Photos
- Appendix D Willow Watering Plan

1 INTRODUCTION

1.1 Background

The Startup levee system is a 7000-foot Federal flood control system designed for to provide protection from periodic, recurring floods from the Wallace and Skykomish Rivers located in Snohomish County, Washington. The main levee was completed in 1965 by the Seattle, District, U.S. Army Corps' of Engineers (Corps). The levee, however, did not provide flood protection for 30 acres of farmland and urban structures near the downstream limits of the levee. A 2600 foot training levee was added in 1969 to provide this additional protection, extending downstream from the main levee. When the Startup 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 3x5-foot toe. Training levees are not intended to receive constant, high velocity flows, but rather to guide the direction of occasional floodwaters.

Channel migration since 1969 resulted in a shift of the main river channel and thalweg to directly against the training levee structure causing scour and erosion. In May of 1996, the Corps completed its first maintenance of the training levee through placement of heavy armor rock 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.

In 2002, flood events between January 7-9 and on February 22, 2002 resulted in additional scour at the Startup training levee. In response, the Corps and Snohomish County, as the non-federal sponsor, constructed a levee rehabilitation project between 19 and 30 August 2002. The Corps using its authority under Public Law 84-99 repaired this 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 against the training levee and the rivers high energy flow. Two hundred and fifty feet (250) of the earlier 1996 repair was also rehabilitated with additional rock material due to flood damage. Neither the original footprint nor the height of either levee section was altered.

Continued flooding and erosion since 2002 on the Skykomish has caused additional channel migration and scour. Most recently, a flood event on 18 January 2005 eroded a large portion of the levee prism at the upstream end of the 2002 repairs. This erosion was severe enough to warrant a declaration of emergency and immediate response which resulted in armoring approximately 200 feet of levee. This work was completed only to the upstream end of immediate erosion damage and in the current alignment of the levee. Environmental features were not included as part of the emergency action due to site and flow conditions.

1.2 Purpose and Need

The purpose of the proposed PL 84-99 rehabilitation is to improve on the previous flood fight repairs made in January 2005. The proposed project is needed to ensure proper engineering and environmental sustainability of the project location. Sustainability of the levee is needed to eliminate property damage (up to a 7-year event) to 10 residential

structures and contents and eliminate clean up costs to 10 barns and equipment. In addition, the levee protects against refugee costs for 10 families and damages to ½ mile of Reese Road.

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 proposed Startup Training Levee Rehabilitation is 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 prior to the floods of January 2005. The Corps has determined that if the levee is not properly repaired by the next flood event, an *imminent threat* of loss to private and/or public property exists.

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 in accordance with this regulation, which allows for description of project features and an analysis of potential environmental affects for public disclosure. Comments on the proposed project will be taken and incorporated as appropriate.

2 ALTERNATIVES

Four alternatives were evaluated to address project objectives.

2.1 Alternative 1- No Action Alternative

The No Action alternative consists of allowing existing damage and associated repairs to remain in place. Further erosion and loss of flood protection has been largely arrested through the flood fight actions but normal engineering design and environmental features were not incorporated because of flood flows and site conditions at the time of the emergency action. As such, the levee remains subject to excessive erosion and scour eventually resulting in additional emergency actions or a breach of the levee. Long term sustainability and protection at this location requires proper rehabilitation of the existing condition and therefore, the no action alternative is dropped from consideration.

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. Small woody vegetation (willows) consistent with existing levee designs have not been found to interfere with long-term structural integrity and could be included above the ordinary high water line.

2.3 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 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 other federal or state programs but is dropped from consideration under the proposed rehabilitation project.

2.4 Alternative 4- Preferred Alternative

The preferred alternative proposes to redress and rehabilitation the approximately 200' of previous erosion by resorting and replacing class IV riprap and spalls and the addition of a weighted rock toe. A willow lift¹ will be incorporated into the rock to provide beneficial vegetation along the levee. In addition, a small woody debris structure made of several logs (with root structures) will be installed upstream of the rock placement and outside the levee prism to provide instream diversity and cover for adult and juvenile fishes. The woody debris feature is not expected to provide any notable hydraulic benefits to the levee. The area of the 2005 flood fight repair generally outlines the area of the proposed project though perhaps an additional 20'-30' of length may be added to provide proper anchorage of the upper end and connection with existing levee sections downstream. Drawings are included as Appendix B.

Equipment to be utilized will be similar to those employed during the 2002 rehabilitation project and include: hydraulic excavator, dump truck, and bulldozer. Construction is expected to occur during the July 15 – August 31, 2003 work window established by the

¹One willow lift is proposed. The lift will consist of a shallow bench at or above ordinary high water where a row of live willow stakes will be placed on a bed of soil and then covered with additional soil. Rock will be placed above the lift but still allow for growth.

Washington Department of Fish and Wildlife (WDFW) when juvenile salmonids are least likely to be in the area. Construction vehicles will access the site by the existing road located on top of the levee. Construction vehicles will stage in the field on the backside of the levee, away from the river. Work is expected to take approximately 7 to 10 working days.

In addition, construction best management practices (BMPs) as suggested by the Washington State Department of Ecology during previous rehabilitations and flood fights will be included during the construction. See Table 1.

Table 1. BMPs Implemented During Construction

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

Portions of the Startup training levee not protected by rock are covered primarily with grass and intermittent clusters of brush such as blackberry. According to the Washington Department of Natural Resources (WDNR) Natural Heritage Program web page, there are 20 species of rare plants listed in Snohomish County of which, none are known to occur at the site². A large riparian stand is located upstream from the project area which includes overstory deciduous and coniferous trees and native plants and grasses (Photo 3).

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 the main river and its numerous side channels area as spawning habitat. 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*

Wildlife presence in the project area is considered typical of non urban areas of western Washington. Blacktail deer, coyote, fox and small furbearers such as raccoon and opossum reside in riparian areas and near outbuildings. Large carnivores such as cougar and black bear are present in the greater Skykomish River valley but infrequent visitors to the project area due to moderate levels of human activity and traffic. Bird life includes raptors such as the bald eagle and red tailed hawk. Waterfowl are frequently observed flying along the Skykomish River and possibly nest in the riparian areas around the project. Small birds and small mammals may feed on existing levee vegetation or take temporary shelter in the rocks.

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

² <http://www.dnr.wa.gov/nhp/refdesk/lists/plantsxco/Snohomish.html>

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 2 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 is planned for construction after the end of the nesting seasons and it is very unlikely that eagles would have begun using communal night roosts. Bald eagle communal night roosts are important winter habitat used for protection from inclement weather and temperature extremes.

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 the 2002 rehabilitation, likely because this reach did not contain preferred habitat requirements. A snorkel survey was conducted in 2002 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 may be having 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

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 site³. Corps archeologists also coordinated with the Tribe to discuss any relevant cultural resources issues.

Recreation

Local recreation adjacent to the project site consists of fishing and boating in the river. The levee is adjacent to private land and therefore directed public recreation does not occur at the site. Occasionally recreational boaters will halt temporarily at the levee to rest or eat. On the opposite bank, off-highway vehicles (OHV) frequently visit the gravel bar to drive in and around the river.

Noise

No noise pollution producing sources exist in the project vicinity. There are no industrial noise sources, major highways, or other loud activities. OHV activity on the opposite bank can temporarily result in elevated noise levels.

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.

³ The Corps acknowledged Tribal habitat restoration concerns and explained that the habitat restoration options under the PL84-99 authority is limited. PL-84-99 rehabilitation of this site will include a small local woody environmental feature but it 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 will be no effects to the climate or general setting of the project. The work will maintain flood damage reduction function of the existing levee to its previous level.

3.2 Elements of the Natural Environment

3.2.1 Geology/ Soils

The proposed project is a replacement in kind of a pre-existing levee structure. The Corps believes other than ensuring no future erosion at the project site, local geology and soils from this repair project will not be affected by placing additional armor rock at the site. The river will continue to provide necessary gravels to the river reach. Substrate sizes through the reach will not be affected.

3.2.2 Surface water

The Corps expects no significant effects to surface waters from this levee rehabilitation. Lessons from the 2002 rehabilitation show that flows in the Skykomish River were not significantly altered, and no shift in the thalweg occurred. Turbidity was monitored during the 2002 construction and turbid water was not observed beyond a 300 ft mixing zone. The proposed project will be constructed using similar methods as the 2002 repair and so excessive turbidity during construction is not anticipated.

3.2.3 Plant Communities

Existing blackberry and grasses were removed by scour prior to the flood fight. The current plant community at the project area is limited to the top and backside of the levee prism. Trees and native shrubs are located upstream of the proposed project in an areas being considered for installation of a small woody debris structure. To allow installation of this structure, some ground cover and possibly small trees and invasive plants (Holly) may be removed to gain access. This disturbance will be kept as to a minimal level. Plant communities are not currently present on the riverward face of levee in the project area. The proposed project will incorporate willow plantings which 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 due to excessive erosion and previous rock placements.

3.2.4 Fish

The project design provides beneficial effects to fish from the inclusion of willow plantings in the levee rehabilitation and installation of a small woody debris structure

immediately upstream. These plantings and logs will increase habitat complexity, provide prey organisms, and increase shade and refuge for fish.

No adult salmonids were observed adjacent to project during construction of the 2002 repairs. Additionally, increases in turbidity during the 2002 construction were minimal and short term; likely having minor impacts, if any, to any early spawning salmonids downstream of the project. The proposed project, using similar methods and timing, is expected to have similar short-term but minor impacts.

3.2.5 *Wildlife*

No effects to local wildlife are expected from the proposed project. Local wildlife including raccoon, opossum and black-tailed deer do frequent the project area and surrounding farms along with other species. These species are primarily nocturnal and are not normally observed at the project site during work hours. Other daytime species are smaller and can readily escape for short periods to nearby riparian areas or timber. No distressed animals were encountered during the 2002 rehabilitation project.

3.2.6 *Endangered Species*

Construction work is scheduled for 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 allows construction work to occur prior to the peak of chinook spawning, although some adult fish are likely to be in the river system at the time of construction. The effects of the proposed action on bull trout will be 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 and small the woody debris structure will provide cover and help increase prey production for bull trout and other salmonids.

The Corps has determined that the described action will not reduce the quality and/or quantity of EFH for Pacific salmon. The existing condition at the project site is already simplified and contains little vegetative cover. The proposed project should help improve conditions locally.

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	No affect	---
Bull Trout	Not likely to adversely affect	---
Chinook Salmon	Not likely to adversely affect	---

3.3 Elements of the Built Environment

3.3.1 Land and Shoreline Use

As this project proposed to rehabilitate an existing levee, there should be no observable effect to land and shoreline use or character from this project.

3.3.2 Cultural Resources

There will be no harmful effects to cultural resources resulting from the project construction. Previous protection actions have halted active erosion of known cultural resource sites. The proposed project will ensure sustainability of that protection.

3.3.3 Native American Issues

There will be no 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

Recreational boat traffic will not be impeded by project construction. However, opportunities to stop and rest at the site may be reduced by dense willow growth at the water line. Since the project area is on private property where recreational boating opportunities are not encouraged, it is not considered a significant impact. Left bank OHV recreation will not be impacted.

3.3.5 Noise and Air Quality

Noise and air quality impacts in the immediate area of the construction may occur but will be minor, temporary and consistent with previous actions at the project site. Noise and air quality disturbances from the construction, primarily from construction equipment, will not occur at levels considered a significant impact to fish and wildlife resources. The construction noise and air quality disturbances will not cause direct mortality, latent mortality or other physiological damage. Behavioral avoidance of the project area by wildlife is not anticipated.

During construction, there will be a temporary and localized reduction in air quality due to emissions from earthmoving equipment and dump trucks operating during soil excavation and disposal activities. These emissions will not exceed EPA's de minimis threshold levels (100 tons/year for carbon monoxide and 50 tons/year for ozone) or affect the implementation of Washington's Clean Air Act implementation plan. Significant impacts are not anticipated.

3.3.6 Environmental Health/ Hazardous and Toxic Waste

There are no known sources of hazardous or toxic waste within the project area. The area was recently disturbed during the flood fight and 2002 rehabilitation and no previously

unknown materials with potential to cause harm were observed. No effects to environmental health or hazardous and toxic waste from the project are anticipated.

4 CUMULATIVE AND INDIRECT EFFECTS

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

Past activities at the project site and surrounding areas of the Skykomish river basin include timber harvest, agricultural conversion and human settlement. These activities resulted in the loss and/or degradation of upland forests, riparian forests and wetlands as well as disconnecting areas from the active flood plain. This resulted in loss of habitats for resident and migratory fish and wildlife species, especially salmonids. In addition, upland forestry practices also resulted in dramatic changes to river sedimentation and hydrologic processes. The most dramatic changes in habitat quality and function likely occurred during the early parts of the 20th century. The trend of habitat loss and conversion continued at a less accelerated rate throughout the remainder of the 20th century and to present day. Current habitat and water quality impacts are generally localized and small in scale, with an overall stable trend though accelerated human growth needs in the area may alter the trend in the near future. The future trend is partially offset by improved forestry and land use practices, as well as habitat restoration projects, in localized areas. At the project site, the construction of the 1965 levee resulted in habitat loss and/or degradation by isolating parts of the active flood plain from the Skykomish River.

Timber and agricultural practices will likely continue to occur throughout the Skykomish basin in the foreseeable future, consistent with current practices. There are no known developments proposed for the immediate area, although there may be increased need for erosion control at this site and elsewhere as human activities increase on adjacent lands. Future development may be influenced from improved knowledge of river systems and processes and reduce reliance upon flood control projects elsewhere in the basin.

The current project is located in converted agricultural land, which will not result in additional riparian forest losses. The project will reduce additional area within the active flood plain, which will further the current trend of habitat degradation. However, in light of overall area within the Skykomish River basin, the impacts will not be significant. Mitigation efforts (LWD and willows) will further reduce the extent of short and long term impacts.

Given the extent of past adverse impacts, the proposed project will result in a minor loss of active floodplain area. When evaluated in the context of past, present, and reasonably foreseeable actions, the proposed project will not result in significant cumulative effects.

Indirect effects are effects to the human and ecological environment that are incidental to the proposed project and not as a direct effect of construction or maintenance. Indirect

effects from the proposed project are restricted to a loss of recreational boating at the levee. As the willow plantings grow, they can impede landing opportunity and visibility of the levee from the water. This indirect effect is considered as beneficial by local landowners. The levee is not managed for recreation by the County. Snohomish County does not provide staff to clean garbage on the levee. It is currently a landowner problem.

5 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 underway
4. National Historic Preservation Act (16 USC 470)	Coordination with SHPO underway
5. Clean Air Act (Pl 91-604)	This document
6. National Environmental Policy Act	This document: 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

A notice of availability and hard copies of this draft EA will be provided to the following agencies, Tribes and the interested public for public review and comment:

- 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

5.1 Coordination and Comments

During the planning and design of this project, the Corps has 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)	Bill Mavros	Area Habitat Biologist
US Fish and Wildlife Service (USFWS)	Tom McDowell	Fishery Biologist
National Marine Fisheries Service (NMFS)	Dan Tonnes	Biologist
Tulalip Tribes	Ann Savery	Habitat Biologist
Tulalip Tribes	Abbe Hook	Geomorphologist
Snohomish County	Bob Aldrich	Biologist

5.2 Conclusion

Based on the above analysis, the proposed 2005 Startup Training Levee Rehabilitation action is not a major Federal action significantly affecting the quality of the human environment and therefore does not require preparation of an environmental impact statement.

6 REFERENCES

Aldrich, Robert. Personal Communication. August 1, 2002. *Discussion of chinook spawning in the Skykomish River and project reach.*

Kraemer, C. 1994. *Some observations on the life history and behavior of the native char, Dolly Varden (Salvelinus malma) and bull trout (Salvelinus confluentus) of the north Puget Sound Region.* Unpublished report, Washington Department of Fish and Wildlife.

Washington Department of Fish and Wildlife and Western Washington Treaty Indian Tribes. 1994. *1992 Washington State Salmon and Steelhead Stock Inventory: Appendix 1, Puget Sound Stocks, Hood Canal & Strait of Juan de Fuca Volume.* Olympia, Washington.

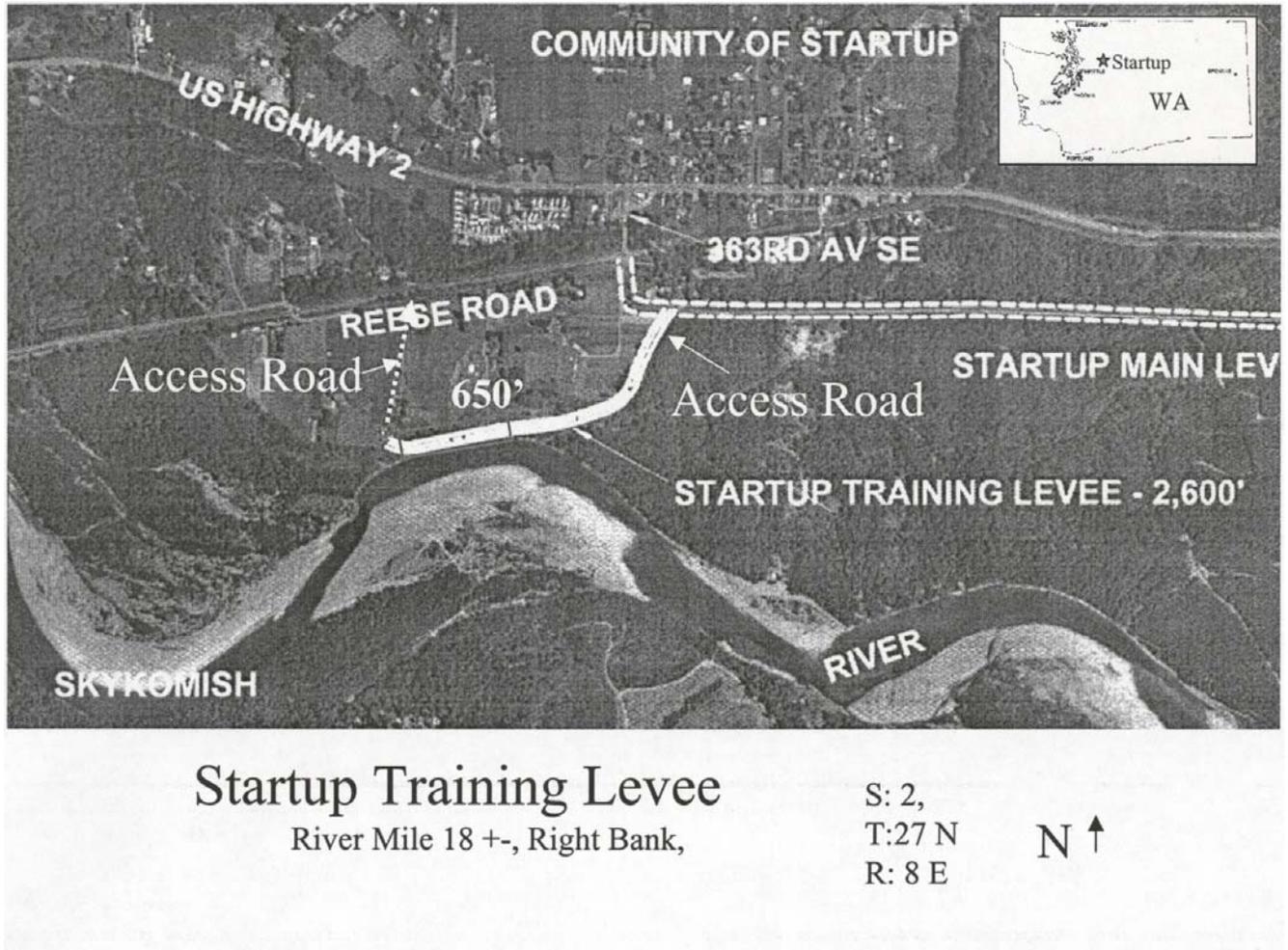
Washington Department of Fish and Wildlife. 1998. *Salmonid Stock Inventory, Appendix: Bull Trout and Dolly Varden.* Olympia, WA: Washington Department of Fish and Wildlife, Fish Program.

Washington Department of Fish and Wildlife. 1999. *Chinook salmon in the Snohomish River System.* Unpublished report. Mill Creek, WA: Washington Department of Fish and Wildlife, Region 6.

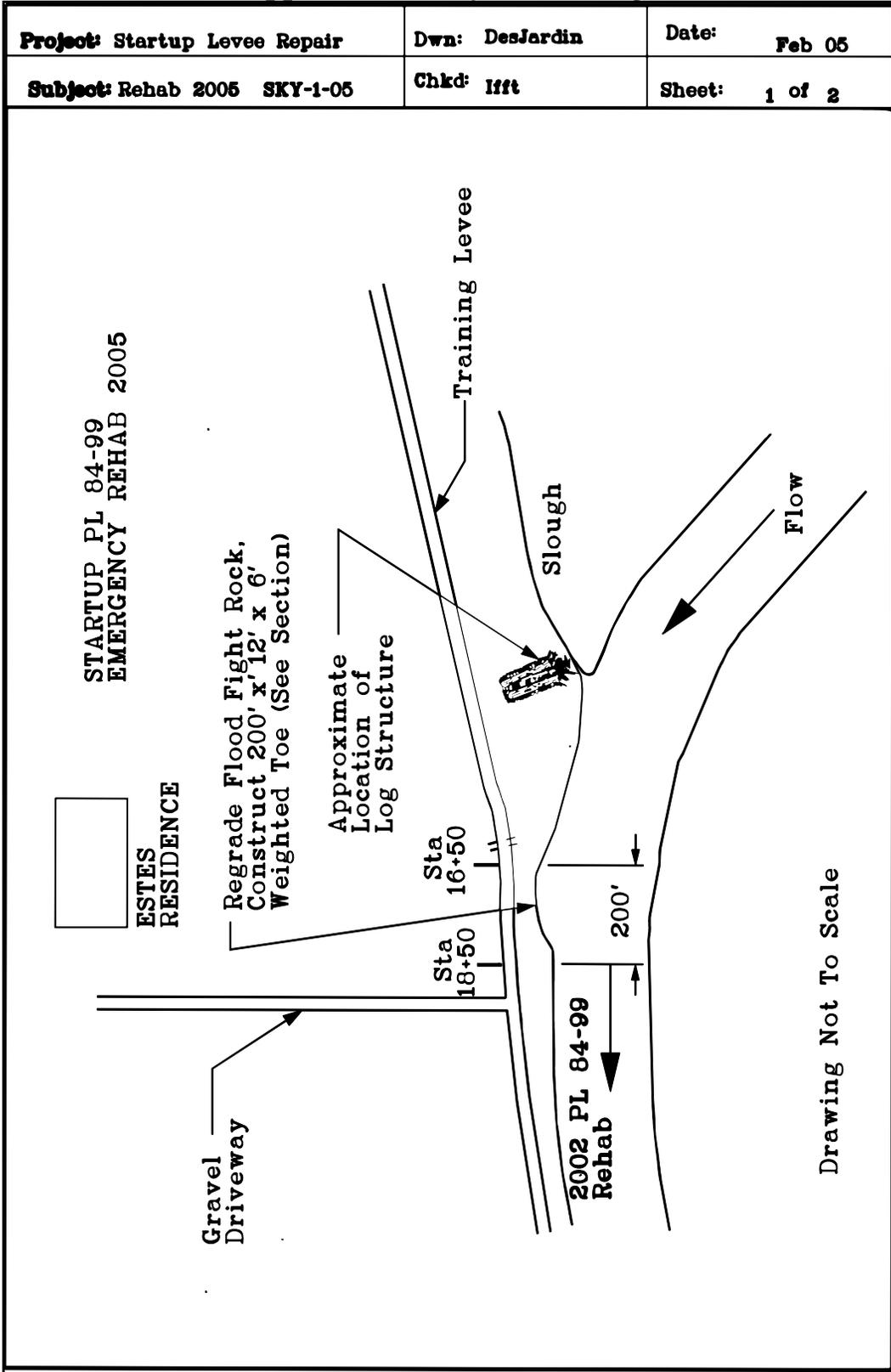
Weitkamp, L.A., Wainwright, T.C., Bryant, G.J., Milner, G.B, Teel, D.J., Kope, R.G., and Waples, R.S. 1995. *Status Review of Coho Salmon from Washington, Oregon, and California.* NOAA Technical Memorandum NMFS-NWFSC-24. Northwest Fisheries Science Center, Seattle, WA.

Williams, R.W., R.M. Laramie, and J.J. Ames. 1975. *A Catalog of Washington Streams and Salmon Utilization: Volume 1, Puget Sound Region.* Washington Department of Fisheries.

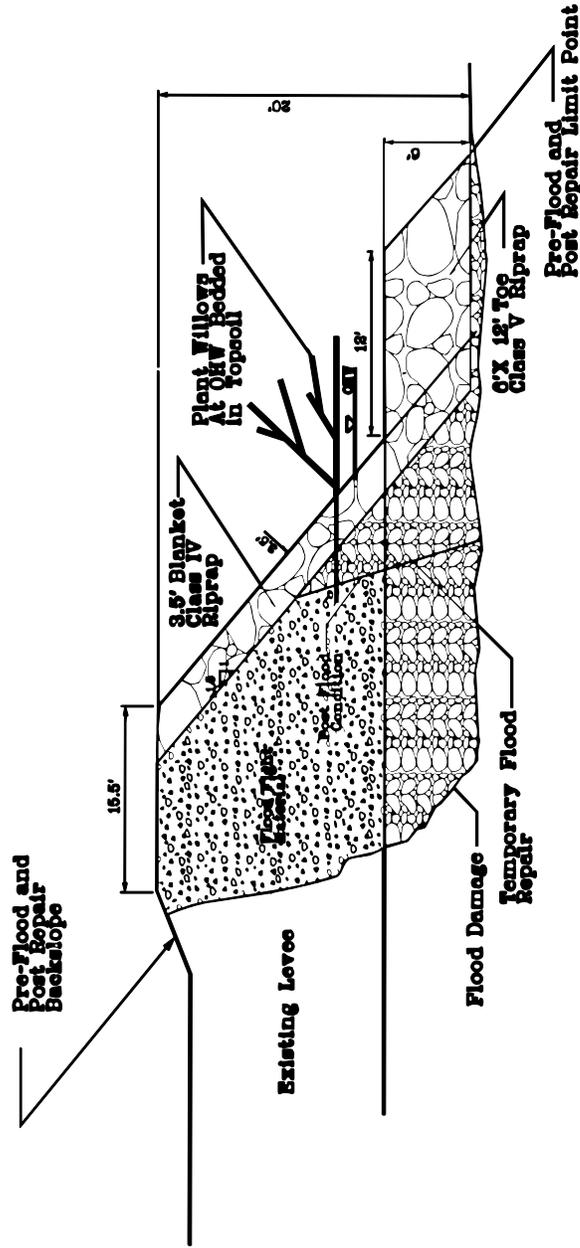
Appendix A. Project Vicinity Map



Appendix B: Project Drawings



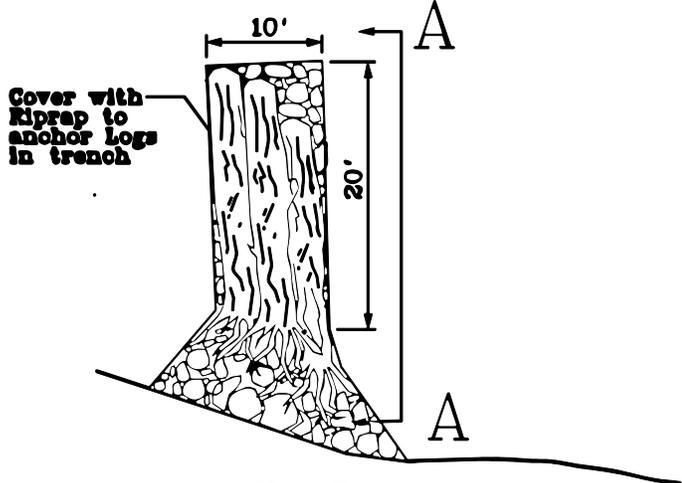
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Subject: SKY-1-05 Rehab 2005	Chkd: Ifft	Sheet: 2 of 2



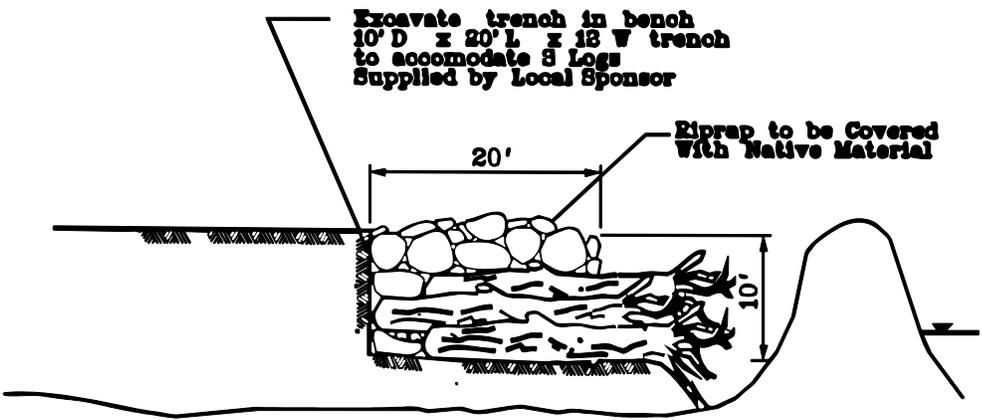
Start Up Levee Repair
Typical Cross Section

Project: Startup Levee Repair	Dwn: DesJardin	Date: Feb 05
Subject: Rehab 2005 SKY-1-05	Chkd: Mft	Sheet: LWD Option

Notes:
 Final location and position of log structure will be determined in field.



Plan View Log Structure Detail



Section A-A

Appendix C. Project Photos



Photo 1. Existing conditions and levee prism at the project area. Area in foreground is unprotected bench of eroded soils. Middle section of larger rock is result of 2005 flood fight. The 2002 rehabilitation is visible in background with new spring growth on planted willows. Scope and alignment of flood fight was dictated by erosion limits.



Photo 2. View showing area proposed for LWD fish feature.



Photo 3. Riparian Vegetation upstream from project limits. Composition is dominated by blackberry, alder, Douglas fir, cedar and various grasses.



Photo 4. Construction photo of 2002 rehabilitation. Proposed project will incorporate similar equipment and design. Photo illustrates river conditions during summer low flow.



Photo 5. Willow stakes as implemented in 2002 and currently part of the proposed project.

Appendix D.

Startup Levee Rehabilitation: Willow Watering Plan

Rehabilitation of the damaged Federal Levee is planned for summer of 2005. In an effort to add habitat features to the rock armor revetment face, willow plantings are proposed for incorporated into the project. Due to the southern exposure and well-drained nature of this site, frequent watering may be necessary to establish the willows. Willow plant watering was conducted during the 2002 rehabilitation and resulted in successful establishment of willows.

Willow shoots will be taken from adjacent and nearby sites and cut the same day or within one day of placement. Shoots will be stored in tubs of water prior to placement. Snohomish County will conduct the necessary watering. A Snohomish County watering crew will be requested to water the project site four days a week. The shoots will be kept damp until fall rains begin. After one heavy rain, or period of three days of periodic showers, watering will be reduced to once a week. Weekly watering shall continue until seasonal fall rain patterns begin.

FINDING OF NO SIGNIFICANT IMPACT (DRAFT)

Startup Training Levee Rehabilitation Project

Skykomish River, Snohomish County, Washington

1. Background.

The Startup levee system is a 7000-foot Federal flood control system designed to provide protection from periodic, recurring floods from the Wallace and Skykomish Rivers located in Snohomish County, Washington. The main levee was completed in 1965 by the U.S. Army Corps of Engineers (Corps). The levee, however, did not provide flood protection for 30 acres of farmland and urban structures near the downstream limits of the levee. A training levee composed of earthen embankment material was then built in 1969 to provide this additional protection. Training levees are not intended to receive constant, high velocity flows, but rather to guide the direction of occasional floodwaters.

Channel migration since the late 1960's resulted in a shift of the main river channel and thalweg directly against the training levee structure causing scour and erosion. In May of 1996, the Corps completed its first repair job on the training levee when 250 linear feet of erosion was repaired through placement of heavy riprap (class V) and light loose riprap in a trench 20 feet wide, 15 feet deep, and approximately 250 feet long. Six years later, flood events in the winter of 2002 resulted in additional damage to the Startup training levee. In response, the (Corps) and Snohomish County, as the non-federal sponsor, constructed a levee rehabilitation project from 19-30 August 2002.

Continued erosion and flooding on the Skykomish since 2002 has resulted in additional channel migration and scour upstream of the 2002 repairs. A flood event on 18 January 2005 eroded a portion of unprotected levee prism at the upstream end of the 2002 repairs. This erosion was severe enough to warrant declaration of emergency and immediate response resulting in armor rock protection for 200 feet. This work was completed only to the upstream end of immediate erosion damage and in the current alignment of the levee and did not include any environmental features.

2. Proposed Action. The U.S. Army Corps of Engineers (Corps), and Snohomish County as the non-federal sponsor, propose to rehabilitate approximately 200 feet of the Startup Training Levee located on the Skykomish River in the same location as the January 2005 flood fight. The proposed project would include an armor rock blanket and establishment of a toe along approximately 200 feet of shoreline. Willow plantings will be incorporated into the project. Finally, a small woody debris structure located upstream near the mouth of an existing slough for additional environmental benefit.

3. Summary of Impacts. Impacts from the rehabilitation action are minor and temporary in nature. Specifically, minor vegetation loss will occur in preparation for construction of the small woody debris feature. The levee prism being rehabilitated consists of rock with no vegetation. Temporary impacts are also expected from noise disturbance created by use of machinery. Air quality impacts will be *de minimus*. The work will occur within the established fish window to ensure minimal fish impacts. The Corps has consulted 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. No wetlands will be filled or impacted during the rehabilitation of the levee. Ancillary beneficial effects are expected to the local plant community and to fish habitat from the project due to the addition of willow plantings and woody debris.

4. 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,
Corps of Engineers