

SHORELINE COMPLIANCE NARRATIVE

Skagit Environmental Bank

Prepared for

Clear Valley Environmental Farm, LLC

July 2007



Note:

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Prepared for

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Introduction

This Shoreline Compliance Narrative was prepared for Clear Valley Environmental Farm, LLC and Clear Valley Environmental Farm II, in order to document compliance with the Shoreline Management Act of 1971 and the shoreline requirements outlined in the Skagit County Code (SCC). Specifically, the requirements outlined in WAC 173.27 and RCW 90.058.020, in addition to the more substantive requirements found in the SCC Section 14.26 are discussed in this report.

As described in the attached letter to Mr. Graham, the Skagit County Deputy Director of Planning and Development Services, Clear Valley Environmental Farm has concluded that the Shoreline Substantial Development Permit should be processed under the requirements for Dredging activities described in Chapter 7.04 of SCC Section 14.26 and Shoreline Stabilization and Flood Protection described in Chapter 7.16 of SCC Section 14.26. A copy of the letter is provided in Appendix A. The policies and requirements described in these chapters are addressed in the sections below.

Project Overview

The Skagit Environmental Bank project will restore stream reaches along Nookachamps Creek and East Fork Nookachamps Creek. In addition, the project will reestablish, rehabilitate, and enhance associated wetlands. The design of this mitigation bank is being reviewed and evaluated by the Mitigation Bank Review Team (MBRT), which includes members of the Washington State Department of Ecology (Ecology), U.S. Army Corps of Engineers (Corps), U.S. Environmental Protection Agency (EPA), and Washington Department of Natural Resources (WDNR).

The total acreage of the project site is 374 acres. The proposed project will be constructed in three phases and will rehabilitate approximately 13,000 feet (2.5 miles) of existing stream channel and riparian habitat, construct 9,720 feet (1.8 miles) of new high-flow back channels; enhance, reestablish, or rehabilitate 261 acres of emergent, scrub-shrub, and forested wetlands; and enhance 109 acres of upland areas, including buffers on the Skagit Environmental Bank site. Approximately 4 acres of the project site consists of water line and power line easements, which will be converted to wetland or upland habitat.

Phase I includes filling ditches that are currently draining areas of the site and constructing three engineered log jams (ELJs) in Nookachamps Creek and East Fork Nookachamps Creek. The objective of Phase I is to restore the floodplain hydrology associated with these streams, resulting in restored wetland hydrologic conditions. Construction will occur within a 75-day construction window that coincides with the time that fish are least likely to be present (June 15 to August 31). Earth disturbed during Phase I will be seeded with native grasses. Hydrologic monitoring will be conducted after the completion of Phase I to assess how the local ground water table responds to the filling of ditches and installation of ELJs.

Phase II will include constructing high-flow back channels off of Nookachamps Creek and East Fork Nookachamps Creek and planting the project site with native vegetation across the project site. The following activities will occur during Phase II:

- Each of the three new high-flow back channels will be approximately 1,400 to 3,800 feet long and approximately 75 wide. The actual channel dimensions will not be determined until the hydrologic conditions resulting from the modifications during Phase I are analyzed.
- The back channels will be excavated during dry conditions, and a soil plug will be left in place at the confluence of the back channel and the existing stream channel. Excavated material will be stockpiled on the site, in a staging area.
- Water will be introduced to the channels slowly, and turbid water will be pumped to upland sedimentation/infiltration areas before the connectivity is established between the high-flow channels and the existing stream channels.

- Silt booms and turbidity monitoring stations will be in place downstream of work areas when flows are introduced into the new channels.
- In disturbed areas where the hydrologic conditions are well understood and not expected to change after the channel construction, final plantings will be installed. Other disturbed areas that may require additional grading during Phase III will be seeded with native grasses, and the final plantings will be installed during Phase III.
- Plant species planted within the site will include native wetland and buffer vegetation.

Phase III will include final site grading for up to 20 percent of the project site and final planting of all areas that are not planted during Phase II.

- Minor grading will remove most of the dry soil areas that remain after Phase I and II operations. The excavation will reduce the elevation of the remaining high spots to a point where the hydrologic conditions will support wetland vegetation.
- Up to three additional high-flow back channels may be added during Phase III, depending on the results of the hydrologic analysis of site conditions after the completion of Phase I.
- It is estimated that approximately 30 percent of the site will remain upland areas. These areas are referred to as forested “islands.”
- Areas not revegetated during Phase II will be planted during Phase III. The entire project site will consist of restored native revegetation at the conclusion of Phase III.

Specific activities that are proposed that involve working within surface waters and within 200 feet of surface waters include: (1) filling of drainage ditches, (2) installation of ELJs, and (3) grading and native species planting. These regulated activities are described below.

Filling of Drainage Ditches

Portions of Ditches 1, 2, 3, 4, 6, 7, and 8 located within 200 feet of Nookachamps Creek, East Fork Nookachamps Creek, or Mud Creek will be filled (see Sheets C-2 and C-3 in Appendix B of the Hydrologic and Hydraulic Basis of Design report).

The ditches will be filled in the summer, when water levels in the ditches are expected to be low. If water is present in the ditches, fish handling procedures will be implemented in accordance

with the requirements of the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries). Fish handling in ditches will include isolation of the ditch from Nookachamps Creek or East Fork Nookachamps Creek using block nets followed by seining of the ditches from upstream to downstream. Further details of the fish handling procedures will be included in a site-specific fish handling plan that will be developed before the construction activities begin.

Before the ditches are cleared of vegetation or filled, and after the necessary fish handling is completed, each ditch will be isolated at the downstream end using a bulk bag dam, and a silt boom will be set up to contain any fine-grained sediment that is mobilized. A water quality monitoring station will be established downstream of the ditch outlet according to permit requirements.

Any water that remains in the ditches will be pumped to upland areas after the fish removal and before the ditches are filled.

Ditches, the berms adjacent to them, and any additional adjacent areas that will be graded during the ditch filling effort will be cleared of vegetative material before the ditch filling begins.

Water pumps used to dewater construction areas will have fish screens installed, operated, and maintained according to the NOAA Fisheries fish screen criteria (NMFS 1995), including the addendum for pump intakes (NMFS 1996), and the Washington state screening requirements for water diversions (Revised Code of Washington, Title 77, Chapter 77.55, Section 320 [RCW 77.55.320]). Additionally, all fish screens that will be used for the project will follow the draft Fish Protection Screen Guidelines for Washington State (WDFW 2000).

Installation of ELJ–Grade-Control Structures

Three ELJ–grade-control structures will be constructed, including one within Nookachamps Creek and two within East Fork Nookachamps Creek (see Sheets C-1, C-6, C-7, and C-8 in Appendix B of the Hydrologic and Hydraulic Basis of Design report). Construction activities will be performed during the low-flow season and the approved fish work window.

Log Procurement and Decking

Logs for the ELJ structures will be imported from offsite locations and decked (staged) onsite until construction. They will be obtained from a permitted log supply source. Logs will be prepared for decking by cutting and trimming them to the appropriate length, in accordance with the construction specifications. Limbs removed from logs will be used as slash material to stabilize the ELJ structures.

Log Placement

A water barrier is proposed for the front (upstream side) of each ELJ structure, orientated perpendicular to the channel (see Sheets C-6 through C-8 in Appendix B of the Hydrologic and Hydraulic Basis of Design report). The water barrier is intended to prevent erosion under and around the ELJ structure. The water barrier consists of logs piled on top of each other between piles forming a buried wall. The water barrier will be buried approximately 5 feet below the existing grade of the channel bed and will extend approximately 180 feet from each bank at a 90-degree angle.

The remainder of each ELJ structure will consist of multiple logs, with and without rootwads that will be completely or partially buried within the existing banks and channel bed. Gravel and slash (debris such as branches, tree tops, and uprooted stumps) will be added to the existing channel bed to provide stability for the overall ELJ structure.

Grading and Native Planting

Initially (during Phase I), all areas disturbed by construction activities will be seeded with a native grass mix. Final planting of the site will occur during Phases II and III and will involve the installation of appropriate native herbaceous, shrub, and tree species throughout the project site in areas that were disturbed during the previous phases and in areas that were not previously affected by construction.

Quantities of Fill and Grading

A total of 8,550 linear feet of ditches will be filled during Phase I (see Sheets C-2 and C-3 in Appendix B of the Hydrologic and Hydraulic Basis of Design report). Ditches 1, 2, 3, 4, 6, 7, and 8 will be filled. Ditch 5 will remain untouched so as not to disrupt flows in Mud Creek. Approximately 27.5 acres of earth will be disturbed as part of the ditch filling. Ditches will be filled with soil from existing berms adjacent to the ditches and areas adjacent to the berms. Approximately 13,677 cubic yards of fill will be permanently placed in the ditches (see Sheets C-4 and C-5 in Appendix B of the Hydrologic and Hydraulic Basis of Design report for example grading cross-sections).

A total of approximately 1,077 cubic yards of stream gravel will be placed at ELJ locations (Phase I). The gravel is intended to stabilize the ELJ structure, provide grade control, and provide fish habitat. Clean gravel will be obtained from a local gravel supplier.

A grading plan has been developed for Phase II grading. This grading plan is presented in Figure D-1 of the *Skagit Environmental Bank Response to Skagit County and Public Comments* included on a CD with this document. Large portions of the site will be extensively graded to create back-channels (Phase II) and other areas graded to establish proper wetland conditions.

Excavated soils will be moved to onsite stockpile locations (see Sheet D-4 in *Skagit Environmental Bank Response to Skagit County and Public Comments* report). No material will be exported offsite.

A total of approximately 240 cubic yards of soil and substrate from streambanks and the channel bed will be excavated during the installation of logs at each ELJ location (Phase I). The excavated material will be used as backfill. Any excess material will be retained onsite.

Zoning Compliance

The current zoning of the site by Skagit County is Agriculture-NRL (Agricultural-Natural Resource Lands) and the current comprehensive plan designation of the site is also Agriculture-NRL. The current shoreline master program environment designation of the site is Rural.

The Skagit Environmental Bank is an outright permitted use in the Agricultural-NRL zone. Skagit County Code 14.16.400 (2) (p) states that “water diversion structures and impoundments related to resource management and on-site wetland restoration/enhancement projects” are permitted uses.

Creation of the Skagit Environmental Bank site is in conformance with, or consistent with, the goals and policies included in the following plans:

Skagit County Comprehensive Plan (SCPPC 2003) goals:

- *Encourage the restoration and enhancement of lost or degraded wetlands.*
- *Protect aquifer recharge areas and ground and surface water quality and quantity.*
- *Protect hydrologic functions and reduce the potential for physical injury and property damage associated with flooding.*
- *Protect, restore where practical, and enhance fish and wildlife populations and their associated habitats.*
- *Cause Skagit County to recognize the creek systems within the county as pivotal freshwater resources and to manage development within the greater watershed in a manner consistent with planning practices that enhance the integrity of the aquatic resource, fish and wildlife habitat, and recreational and aesthetic qualities.*

2005-2007 Puget Sound Priorities, Puget Sound Action Team (PSAT 2004) goals:

- *Conserve and recover salmon and non-salmonid fish.*
- *Restore degraded freshwater habitats on Puget Sound rivers and streams.*

Nookachamps Watershed Nonpoint Action Plan, Washington State Department of Ecology-Approved (NWMC and Skagit County 1995) goals:

- *Prevent and abate nonpoint source pollution within the lower Skagit watershed.*

- *Maintain and enhance water quality in the lower Skagit watershed and restore and maintain the watershed's beneficial uses such as drinking water supplies, fisheries habitat, and recreational opportunities.*
- *Promote desirable or "beneficial uses" in the watershed, including fisheries resources (salmonids and resident fish) and wildlife habitat (riparian zones, wetlands, and open water).*

Shoreline Management Policy Compliance

The proposed project site is entirely within the 100-year floodplain of the Skagit River; therefore, the entire site is therefore under the jurisdiction of the Skagit County Shoreline Master Plan. The current shoreline master program environment designation of the site is Rural. Both Dredging activities (Chapter 7.04) and Shoreline Stabilization and Flood Protection activities (Chapter 7.16) are allowable within the Shoreline Area. Policies and regulations for both types of activities will be addressed below.

Section 14.26 Skagit County Code; Chapter 7.04 Dredging

Dredging Policies

General Policies

(1) Coordination – All proposals for dredging operations should be coordinated and consistent with plans, policies, guidelines, and regulations of federal, state, and/or local agencies.

Compliance Response: All dredging operations have been or in the process of coordination with federal, state, and local plans, policies, guidelines, and regulations. Proposed dredging will facilitate meeting the goals of the Nookachamps Watershed Nonpoint Action Plan, Washington State Department of Ecology-Approved (NWMC and Skagit County 1995), 2005-2007 Puget Sound Priorities, Puget Sound Action Team (PSAT 2004), and the Skagit County Comprehensive Plan (SCPPC 2003) goals. Additionally, all required permits and coordination with regulatory agencies have been submitted for review or have been granted including: Endangered Species Act concurrence, U.S. Army Corps of Engineers approval under the Clean Water Act, Washington Department of Fish and Wildlife Hydraulic Approval Permit, and Washington Department of Ecology Section 401 water quality certification. Furthermore, permits from Skagit County have been submitted and are in the approval process.

For more details on approval see the SEPA Checklist, Biological Evaluation, and JARPA Application that are in the Skagit County project file and are included on CD with this document.

(2) All dredging and spoil disposal operations should not: a) adversely alter natural drainage patterns, currents, river and tidal flows, b) interfere with or adversely affect water flows and capacities, c) create conditions that would endanger public health and safety.

Compliance Response: Proposed dredging will not adversely alter natural drainage, water flow and capacity, and will not create conditions that endanger public health and safety. On the contrary, the proposed

dredging will restore natural drainage patterns at the site, will improve water capacity by encouraging over bank flow during storm events, and will improve public health and safety by reducing the potential magnitude of local flooding. A detailed analysis of hydrologic and hydraulic processes resulting from the proposed activities is presented in the Skagit Environmental Bank Response to Skagit County and Public Comments and Hydrologic and Hydraulic Basis of Design report included with this report.

(3) Fill material – The dredging of bottom materials for the single purpose of obtaining landfill material should be prohibited.

Compliance Response: Proposed dredging is not for the single purpose of obtaining landfill material. Dredging will facilitate the restoration of wetland hydrology at the site by filling the onsite ditches and installing ELJ structures. Dredged material will be retained onsite to backfill the ELJs. Material cleared from nearby berms will be used to fill onsite ditches that currently drain the site. Additional material resulting from the proposed Phase II grading and excavation for high-flow back channels will be stored onsite in four stockpiles that are identified in Figure D-4 of the Skagit Environmental Bank Response to Skagit County and Public Comments report.

(4) Construction material – The dredging of sand and gravel for the purpose of construction materials should be prohibited except for emergency shoreline stabilization and flood protection measures.

Compliance Response: Proposed dredging is not for the purpose of obtaining construction materials. Dredging will facilitate the restoration of wetland hydrology at the site and dredged material will be retained onsite to backfill the engineered logjams and to fill onsite ditches that currently drain the site to Nookachamps Creek and East Fork Nookachamps Creek.

(5) Review of proposals for dredging and spoil disposal should assess:

- a. The value of the dredge and disposal site in their present state versus the proposed shoreline use to be created by dredging and/or disposal, expressed in short and long range economic, social, and environmental terms.

Compliance Response: The project proponents and the Skagit Land Trust have obtained three appraisals of the property in its existing state. Each of them shows that the land on the property, if used for farming, is worth about between \$1200 and \$1400 per acre. In general, farmland in the

Skagit County is worth from \$1000 to \$7000 per acre. Thus, the value of the farmland on the farm, and on the wetland site, in particular, if used for agriculture is at the low end of the range. We believe that this is hard market evidence that the land is not “prime” for farmland, and is not well suited for agriculture.

Moreover, as described in Section C-7 of the Skagit Environmental Bank Response to Skagit County and Public Comments report, the applicant has proposed, as part of its project mitigation package, a set-aside of funds for the purchase of development rights for long term protection of agricultural lands.

Anadromous fish do not currently use the ditches that will be filled at the site. If fish use the ditches during flooding, the ditches poor quality off-channel habitat and refugia, both of which will be replaced with higher quality off-channel habitat that will provide better refugia. The ditches have very low wildlife function since they are covered with a monoculture of a non-native grass species, and they adversely impact wetland groundwater hydrology by intercepting the ground water and channeling it to the nearby creeks.

The environmental bank project will replace these low quality ditch habitats with the creation of 9,720 feet (1.8 miles) of new high-flow back channels that will be accessible by anadromous fish. The streambank channels will be designed to allow fish to escape in receding waters, and will be planted with a variety of native plant species.

The wetland restoration will be of superior quality, and will be approved as such by the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Environmental Protection Agency, National Marine Fisheries Service, Skagit County Planning and Development Services, and the State Department of Ecology. The project will produce a significant gain in wetland and forested upland area (374 acres) and functional value within the Skagit watershed. Wetland permittees, that impact wetland resources, will be required to compensate for the loss at ratios of greater than one acre of environmental bank compensation for every acre of wetland impact, therefore, the environmental bank will serve to provide a no net loss and a net gain in wetland area and function within Skagit County.

- b. The value of the present site for other future potential public or private shoreline uses including but not necessarily limited to aquaculture, fish, shellfish, and wildlife research and resource preservation, commercial fishing, and recreation opportunities.

Compliance Response: As stated above, the site is not well suited for agriculture because of the excessive draining required to use the site for farming. Due to the amount of draining that would be required at the site for other uses, in addition to the various State and local regulations affecting a property with such proximity to rivers, shorelines, and wetlands, very few alternative shoreline uses would be appropriate. Due to the nature of the proposed site, wildlife and fish research could still occur at the site. Furthermore, the proposed use of the site is essentially resource restoration followed by preservation.

(6) Water quality – All dredging and spoil disposal operations should comply with the water quality standards, guidelines, and regulations of federal, state, and local agencies.

Compliance Response: The proposed dredging operations will comply with water quality standards, guidelines, and regulations of federal, state, and local agencies. The proposed project will also comply with all permit requirements relating to water quality.

(7) Quality of spoils – Proposals for dredging and spoil disposal projects should include a thorough analysis by qualified personnel of the quality and characteristics of the material to be dredged.

Compliance Response: Low-lying areas of the site are underlain by unconsolidated alluvial sediment that were deposited in the Skagit River floodplain after the retreat of the Cordilleran ice sheet. According to the soil survey of Skagit County (SCS 1989), five silt loam soil series occur on the site, including Bellingham silt loam (hydric), Nookachamps silt loam (hydric), Skipopa silt loam, Sumas silt loam (hydric), and Field silt loam.

Soils that will be dredged consist of these silt loam types. Qualified personnel will evaluate soils and sediments that are dredged and graded onsite for suitability in the ELJ structures and ditches prior to placement on the site. No excavated soils will be removed from the site. Excess material that is graded at the site will be stockpiled on the property in four stockpile location located outside of the 100-year floodplain (See Figure D-4 in the Skagit Environmental Bank Response to Skagit County and Public Comments provided on a CD with this document).

(8) Public uses – Proposals for dredging and spoil disposal projects should demonstrate that the operation will not be detrimental to the public interest and uses of the shoreline and water body.

Compliance Response: The proposed dredging and spoil disposal will facilitate the overall creation of the environmental bank. As described in the Skagit Environmental Bank Response to Skagit County and Public Comments report, Hydrologic and Hydraulic Basis of Design report,

SEPA Environmental Checklist, and JARPA application materials, the proposed project will not be a detriment, but rather will be a benefit to the public interest by improving water quality, increasing wetland area and function, and improving fish and wildlife habitat in the basin. There are no existing or planned public uses of the shoreline at the site, although there will be visual access to the open spaces provided by the environmental bank. Therefore, the project will not be detrimental to public uses of the shoreline.

In the Skagit Environmental Bank Response to Skagit County and Public Comments, responses D-12 through D-15 address hydraulic connections on and adjacent to the project site. The Hydrologic and Hydraulic Basis of Design Report concluded that a 1-foot rise in surface water elevation of East Fork Nookachamps Creek was expected during April, May, and June near the property boundary that may extend up to approximately 3,300 feet upstream of the property boundary. However, it has been shown through additional stream survey data and HEC-RAS modeling that this will not adversely impact current land uses on properties upstream of the project boundary. Response D-12 details results of the updated HEC-RAS model. Response D-13 details overbank flooding and Response D-14 discusses how no upstream conveyance structures will be impacted this change in water elevations.

(9) Maintenance and emergency dredging – Although maintenance and/or emergency dredging of navigational channels and of materials for existing dike and levee repairs are not considered substantial developments and thus exempt from the shoreline permit procedure, the county, for the benefit of public interest and water body and shoreline users, should review DOE/Corps of Engineers notices of such activities to determine if:

- a. The proposal is or is not exempt from permit procedures.
- b. The project is suitably planned and that all potential impacts have been recognized and mitigated.
- c. The project is consistent with the intent, policies and regulations of the Act and this program.

Compliance Response: This is not maintenance or an emergency dredging project. All proposed activities are going through the permitting process, are suitably planned (see attached documentation for planning and potential impacts), and are consistent with the intent, policies, and regulation of the SMA and the County's shoreline master program.

Dredging Policies

(1) Location – Dredging should not occur in the following, except for beneficially public purposes consistent with this program:

- a. In estuaries, natural wetlands, and marshes.
- b. Along net positive drift sectors and where geohydraulic processes are active and accretion shoreforms would be damaged or irretrievably lost.
- c. In shoreline areas and bottom soils that are prone to sluffing, refilling, and continual maintenance dredging.
- d. In officially designated fish, shellfish, and wildlife spawning, nesting, harvesting, and concentration areas as defined by the Washington Department of Natural Resources (WDNR) Marine Atlas as amended, and other recognized official documents.
- e. Where water quality would be irretrievably degraded below standards.
- f. Where current and tidal activity are significant, requiring extensive maintenance dredging.

Compliance Response: The proposed project will be a benefit to the public by improving flood conditions, water quality, and wetland habitat in the basin. Dredging will not occur in estuaries or marshes. Approximately 11,372 cubic yards of fill material (native soil) will be placed in wetlands that occur within ditches (Phase I). The sources of fill material for the ditches will be the berms adjacent to the ditches or areas adjacent to berms. During Phase II approximately 2,664 cubic yards of fill will be placed in existing wetlands on the site and approximately 75,202 cubic yards of material will be excavated from wetland areas at the site. These impacts to wetlands are considered temporary because the excavation activities will greatly expand the size of these wetland areas and overall wetland function at the site.

Geohydraulic processes will not be damaged or irretrievably lost. No maintenance will be required in the dredged areas. No areas of WDNR designated fish and wildlife resources are present at the site. Water quality will be maintained and monitored during construction activities and will be greatly improved over existing conditions once construction is completed. Activities conducted in areas where stream current is present, specifically ELJ placement, will not require maintenance dredging.

(2) Technique

- a. Dredging operations should utilize techniques that cause the least dispersal and broadcast of materials.
- b. In order to identify the controlling geohydraulic processes that are responsible for the dredging purposes, hydraulic monitoring studies should precede dredging activity.

Compliance Response: Dredging will be completed using a backhoe and will occur in the summer months when the ditches are dry. Excavation/dredging associated with the ELJ placement will occur in areas that are isolated from the stream flow to minimize potential impacts to water quality and aquatic life. The proposed dredging activities are not in response to geohydraulic process. Dredging and filling of ditches and placement of ELJs will restore the site to conditions found prior to anthropomorphic changes that historically drained the site and caused downcutting within the streams. A detailed analysis of hydrologic and hydraulic processes is provided in the Hydrologic and Hydraulic Basis of Design report included on a CD with this document.

(3) Scheduling – Dredging operations should be scheduled so as not to interfere with the migratory movements of anadromous fish.

Compliance Response: Phase I of the proposed project includes filling ditches and constructing three ELJs in Nookachamps Creek and East Fork Nookachamps Creek. The objective of Phase I is to restore the floodplain hydrology associated with these streams, resulting in restored wetland hydrology conditions. Construction will occur within a 75-day construction window that coincides with the time that fish are least likely to be present (July 1 to September 30). Potential impacts to ESA listed species including Chinook salmon are addressed in the Biological Evaluation completed for the site, which is included on a CD with this document. Earth disturbed during Phase I will be seeded with native grasses. Hydrologic monitoring will be conducted after the completion of Phase I to assess how the local ground water table responds to the filling of ditches and installation of ELJs. Phase II activities the back channels will be excavated during dry conditions, and a soil plug will be left in place at the confluence of the back channel and the existing stream channel. This will effectively prevent impacts to anadromous fish migration.

Spoils Disposal Policies

(1) Location

- a. Deposition of dredge spoils in water should be discouraged, except when alternatives of depositing material on land is more detrimental to shoreline resources and uses than depositing in water areas.
- b. Land spoils disposal should not be located upon, adversely affect, or diminish:
 - ☐ Estuaries, natural wetlands, and marshes.
 - ☐ Prime agricultural land.
 - ☐ Natural resources including but not necessarily limited to sand and gravel deposits, timber, or natural recreational beaches and waters.
 - ☐ Designated wildlife habitat and concentration areas.
 - ☐ Water quality, quantity, and drainage characteristics.
 - ☐ Public access to publicly owned shorelines and water bodies.
- c. Polluted and soft spoils should be deposited in safe upland areas with measures taken to contain runoff and potential discharge to ground waters and shoreline and water bodies.
- d. Upland disposal of non-polluted dredge spoils should be made available to other users and beneficial purposes such as for recreational beaches, shore rehabilitation and enhancement, beach feeding, or construction materials.
- e. If alternatives for land disposal are not available or infeasible, water disposal sites should be identified and meet the following criteria:
 - ☐ The site is in an area protected from significant storms, tidal and submarine currents, stratification, and turbulence that would cause shifting and dispersal of the spoils.
 - ☐ The area is proven to be biologically, chemically, and physically degraded by past spoil depositing and other aquatically degrading activities; water quality will not be degraded further.
 - ☐ Disposal will not interfere with geohydraulic processes.

- ☐ The dredge spoils have been analyzed by qualified personnel and found to be minimal or nonpolluting.
- ☐ Spoil disposal will not impede water and tidal current flows or adversely affect floodwater flows and capacities.
- ☐ Aquatic and aquatic related life will not be adversely affected.
- ☐ The site and method of disposal meet all requirements and qualifications of applicable regulatory agencies and are designated with their cooperation.

Compliance Response:

- a. Dredge spoils will not be placed in the water, except for the fill material that is excavated from the streambed and then reused as backfill in the ELJ structures. This will occur while the ELJ site is isolated from stream flow and Best Management Practices (BMPs) will be protective of water quality during construction.*
- b. Spoils will not be placed on, or adversely impact, any of the described areas. Any diminution in existing agricultural lands will be mitigated by the setting aside funds for the purchase of development rights for long term protection of agricultural lands as described in Section C-7 Skagit Environmental Bank Response to Skagit County and Public Comments report.*
- c. Spoils are not expected to be polluted and BMPs will be employed to prevent runoff from dredge spoils from adversely impacting water quality.*
- d. All dredge spoils and excavated materials will be used onsite.*
- e. Dredge spoils will primarily be used to backfill the ELJ structures. Excavated material from the berms along the ditches will be used to fill the ditches that drain the fields. As seen in Figure D-4 of the Skagit Environmental Bank Response to Skagit County and Public Comments report, excess material from proposed grading will be retained onsite in four stockpile areas. Placement of the spoils will not affect water quality, geohydraulic processes, will not contain pollutants, will not adversely affect aquatic life, and will comply with the requirements of regulating agencies.*

(2) Technique

- a. Spoil disposal, if allowed in water; should utilize techniques that cause the least dispersal and broadcast of materials.
- b. Sidecast disposal and agitation dredging should be prohibited.

Compliance Response: A backhoe will be used to excavate material from the streambed and the areas near the ditches to be filled. As described above, material excavated or dredged at the locations of the ELJ structures in Nookachamps Creek and East Fork Nookachamps Creek will be used as backfill material for the ELJs and will be placed while the structures are isolated from the streamflow. No sidecast disposal or agitation dredging will occur. BMPs, in addition to isolating the ELJ construction from streamflow, will be employed to preserve water quality during construction of the ELJs and filling of the ditches.

Navigation Channels, Canals, and Basins

1. Navigation channels and moorage and turning basins should be located and designed to minimize the need for initial and continual dredging and maintenance.
2. Moorage and turning basins should also meet the policies and regulations of "Marinas," Section 7.07 and other applicable chapters of this program.

Compliance Response: 1) The proposed project does not involve any moorage or navigation channels. 2) The proposed project will not require any maintenance dredging.

Impacts

1. Review of proposed dredging and spoil disposal operations should adhere to applicable local, state, or federal environmental impact statement (EIS) procedures and guidelines.
2. Recognizing the diverse and variable impacts of dredging and spoil disposal on the aquatic and shoreline environment, then such operations should minimize and take measures to mitigate all impacts.

Compliance Response: The impacts from the proposed project have been evaluated through Skagit County's SEPA process and are documented in a Biological Evaluation and a JARPA application prepared to meet State

and Federal permit requirements. The technical basis of the project is documented in the Hydrologic and Hydraulic Basis of Design report and the Skagit Environmental Bank Response to Skagit County and Public Comments report. Copies of these documents and reports are in the project file at Skagit County and are also included on a CD with this document. All impacts to aquatic resources will be temporary construction impacts and the overall result of the proposed project will be a vast improvement to the aquatic and shoreline environment.

Dredging Regulations

Shoreline Areas

(3) Rural

1. Dredging is permitted subject to the General Regulations.
2. Dredge spoil disposal is permitted in designated spoils disposal areas within the Rural Shoreline Area. Disposal areas shall be identified by the department until such time as they are identified in the Master Program.

Compliance Response: The current shoreline master program environment designation of the site is Rural. Spoils will only be placed as backfill in the ELJ structures and to fill the drainage ditches on the property.

General Regulations

(1) Shoreline permit/statement of exemption – In order to assure that dredging and spoil disposal operations, including maintenance dredging, are consistent with this program as required by RCW 90.58.140 (1), no operation may commence without the responsible person or agency having obtained either a shoreline permit or statement of exemption from this department.

Compliance Response: A shoreline permit has been applied for with Skagit County and was included in the JARPA application submitted in Fall 2006.

(2) Related Uses – Dredging shall be allowed for those shoreline and water uses consistent with this Master Program and the Shoreline Management Act.

Compliance Response: Proposed activities at the site are consistent with the Master Plan and the Shoreline Management Act.

(3) Locations – Dredging shall not occur in the following, except for maintenance work and for beneficially public purposes consistent with this program:

- a. In estuaries, natural wetlands, and marshes.
- b. Along net positive drift sectors and where geohydraulic processes are active and accretion shoreforms would be damaged or irretrievably lost.
- c. In shoreline areas and bottom soils that are prone to sluffing, refilling, and continual maintenance dredging.
- d. In officially designated fish, shellfish, and wildlife spawning, nesting, harvesting, concentration areas as defined by the Washington Marine Atlas (DNR), as amended, and other recognized, official documents.
- e. Where water quality would be irretrievably degraded below state and federal standards.
- f. Where current and tidal activity are significant, requiring excessive maintenance dredging.

Compliance Response: The proposed project will be a benefit to the public by improving flood conditions, water quality, and wetland habitat in the basin. Dredging spoils will not be placed in estuaries or marshes. Approximately 11,372 cubic yards of fill material (native soil) will be placed in wetlands that occur within ditches. The sources of fill material will be onsite berms adjacent to the ditches or areas adjacent to berms. Geohydraulic processes will not be damaged or irretrievably lost. No maintenance will be required in the dredged areas. No areas of designated fish and wildlife resources are present at the site. Water quality will be maintained and monitored during construction activities and will be greatly improved over existing conditions once construction is completed. Activities conducted in areas where stream current is present, specifically ELJ placement, will not require maintenance dredging.

(4) Landfill material – Dredging of bottom materials for the sole purpose of obtaining landfill material is prohibited.

Compliance Response: Proposed dredging is not for the single purpose of obtaining landfill material. Dredging will facilitate the restoration of wetland hydrology at the site and dredged material will be retained onsite

to backfill the engineered logjams and to fill onsite ditches that currently drain the site to Nookachamps Creek and East Fork Nookachamps Creek.

(5) Spoil disposal sites – Dredge spoil disposal shall occur at sites consistent with this Master Program and the Shoreline Management Act. Where applicable, the Skagit County Dredge Disposal Site Analysis Study shall serve as an advisory guide in selecting and determining the qualifications of disposal sites. Proposals for spoil disposal must show that ultimate use of the site will be for a use permitted within the shoreline area.

Compliance Response: All dredge spoils will be retained at the site and will not be disposed of. Material dredged/excavated for the ELJ structures will be used to backfill the structures. The material used to fill the drainage ditches will come from adjacent berms and other nearby areas.

(6) Prohibited spoil locations – Dredge spoil disposal is prohibited on lake shores and beds, in streamways, estuaries, natural wetlands and on marine accretion beaches EXCEPT as an element of an approved shore restoration or beach enhancement program.

Compliance Response: No dredge spoils will be placed in lake shores and beds, estuary, or marine accretion beaches. Dredge spoils removed from the streambed will be placed in a streamway as backfill for the ELJ structures. Additionally, dredge spoils or fill material from berms will be placed in wetland ditches. The placement of spoils will facilitate the creation of the environmental bank and will result in a substantial improvement of water quality, wetland acreage, and wetland function.

(7) Adverse effects – Dredging and spoil disposal shall not adversely infringe upon existing and adjacent water and shoreline uses, properties and access.

Compliance Response: Dredging and spoil disposal will not adversely affect existing and adjacent water and shoreline uses, properties and access. Specific analysis of the potential bank site influences is provided in the Skagit Environmental Bank Response to Skagit County and Public Comments report and the Hydrologic and Hydraulic Basis of Design report prepared for the project. These documents are included on a CD with this document.

(8) Project information – applications for shoreline dredging shall provide environmental assessment information to include at a minimum:

- a. Water quality analysis
- b. Tidal fluctuation, current flows, direction, and degree of change

- c. Physical, chemical, and biological analysis of material to be dredged, to include material composition, volume, and amount, organic materials, source of material, volatile solids, chemical oxygen demand (COD), grease and oil, mercury, lead, zinc, sulfite waste liquor (SWL), and biological organisms, both permanent and migratory/transitory
- d. Dredging technique, frequency, and procedures
- e. Physical and biological analysis of disposal site(s)
- f. Plan for disposal or use of maintenance dredge spoils for at least a 50-year period.

Compliance Response: All dredge spoils will be used at the site for backfilling the ELJ structures and filling the ditches on site.

- a. *Water quality at the site is documented in the SEPA Environmental Checklist and the Biological Evaluation completed for this project.*
- b. *Hydrologic and hydraulic analyses completed for the proposed project are documented in the Hydrologic and Hydraulic Basis of Design report included in this submittal.*
- c. *Soils of the site are comprised of unconsolidated alluvial sediment. According to the soil survey of Skagit County (SCS 1989), five silt loam soil series occur on the site, including Bellingham silt loam (hydric), Nookachamps silt loam (hydric), Skipopa silt loam, Sumas silt loam (hydric), and Field silt loam. Soils that will be dredged consist of these silt loam types. These soils are primarily hydric soils that are in various states of reduction. The site has been in agricultural use since its development and therefore no hazardous materials are expected to be included in the dredged materials.*
- d. *Dredging will occur using a backhoe to excavate the areas for the placement of the ELJs. Additionally, material to fill the ditches will come from the berms that contain the ditches. Methods are detailed in the Biological Evaluation prepared for the proposed project and included with this submittal. BMPs will be employed to eliminate adverse effects to water quality during construction. Dredging will occur during Phase I of the proposed project and will be restricted to the HPA approved in-water work window (July 1 to September 30).*

- e. *Physical and biological analyses of the project site and vicinity are described in detail in the Biological Evaluation prepared for the proposed project and included in this submittal.*
- f. *All dredge spoils will be used at the site during the backfilling of the ELJ structures, filling the ditches, and generating the proper grade for wetland restoration at the site. Once completed the restored areas where dredge spoils have been placed will be preserved in perpetuity.*

(9) Land disposal requirements – Land disposal sites shall adhere to the following conditions:

- a. Containment dikes shall be built and maintained so as to minimize escapement of spoils bearing discharge.
- b. An adequate settling basin shall be built and maintained so that the site's discharge water carries a minimum of suspended sediment.
- c. Normal drainage patterns shall not be adversely affected by the disposal operation and site.
- d. Removal of deposited spoil material for other uses shall utilize a single point of ingress and egress and shall maintain the containment dikes for the life of the project.
- e. Need and special consideration for landscaping and buffer areas shall be subject to department determination, review, and criteria on a case-by-case basis with guidelines provided by the county zoning ordinances.

Compliance Response: Dredge spoils will be incorporated into the ELJ structures and the filling of drainage ditches at the site. Potential discharge from spoils will be controlled through the employment of water quality BMPs during construction. Natural drainage patterns will not be adversely affected. No spoils will be removed from the site. Temporary intrusion into stream and wetland buffers is addressed in the SEPA Environmental Checklist and the JARPA application submitted to Skagit County and are included on a CD provided with this document. All impacts in the buffers will be temporary and will occur during construction. Subsequent to construction, wetland and stream buffers will be improved from their existing condition.

Section 14.26 Skagit County Code; Chapter 7.06 Landfills

Landfill Policies

General Policies

(1) Purpose –

- a. Landfills, if allowed on shorelines, should be for the purpose of facilitating water and shoreline dependent and related uses.

Compliance Response: Proposed landfill activities are solely associated with proposed dredging described above in the Dredging section. Dredging and associated landfill will facilitate the restoration of wetland hydrology at the site by filling the onsite ditches and installing engineered log jam (ELJ) structures. The purpose of the ELJs is to facilitate water and shoreline dependent and related uses, i.e., by restoring natural river morphological processes and by restoring fish habitat. Dredged material will be retained onsite to backfill the ELJs. Material cleared from nearby berms will be used to fill onsite ditches that currently drain the site. Additional material resulting from the proposed Phase II grading and excavation for high-flow back channels will be stored within the Clear Valley Farm in five stockpiles that are discussed and identified in Response D-1 and Figure D-4 of the Skagit Environmental Bank Response to Skagit County and Public Comments report.

Stockpiles 1, 2, 3, and 5 are located within the 100-year floodplain and Stockpile 4, the largest stockpile, is outside of the 100-year floodplain. As described in the Skagit Environmental Bank Response to Skagit County and Public Comments report approximately 704,810 cubic yards of material will be placed in the five stockpiles after the ditches and ELJs are backfilled and temporary access road is filled. Stockpiles 1, 2, and 3 are within the ordinary high water mark, will be vegetated with native vegetation, and will provide flood refuge habitat for wildlife during backwater events from the Skagit River.

The proposed stockpiles, and the larger wetland restoration project, are Shoreline Dependent Uses because the proposed actions are dependent on their location adjacent to the shoreline in order to restore natural shoreline function (referred to as natural shoreline phenomena in the Skagit County Code), wetland function, and stream functions at the restoration site. Furthermore, the proposed actions are also Shoreline Related Uses because the stockpiles and the larger wetland restoration project cannot operate successfully inland from shorelines under existing physical conditions. The proposed restoration site is a unique combination of appropriate size and potential for restoration due to the

site formerly being forested wetland and adjacent to Nookachamps Creek and the East Fork of Nookachamps Creek.

- b. Landfill proposals should demonstrate a reasonable need and consistency with the Shoreline Management Act and this program.

Compliance Response: All landfill operations have been or are in the process of coordination with federal, state, and local plans, policies, guidelines, and regulations. Proposed landfill is consistent with the Shoreline Management Act and will facilitate meeting the goals of the Nookachamps Watershed Nonpoint Action Plan, Washington State Department of Ecology-Approved (NWMC and Skagit County 1995), 2005-2007 Puget Sound Priorities, Puget Sound Action Team (PSAT 2004), and the Skagit County Comprehensive Plan (SCPPC 2003) goals.

Specifically, the proposed project is consistent with the applicable goals of the Skagit County Shoreline Management Act:

Shoreline Use Goal: The proposed uses of the restoration site are compatible with the shoreline uses and will be a valuable improvement of the habitat and hydrologic functions at the site.

Conservation Goal: The proposed restoration site will preserve, protect, and restore the natural resources of Skagit County's shorelines by permanently protecting the proposed restoration areas. The restoration activities will greatly enhance fish and wildlife habitat, wetland conditions, and hydrologic conditions at the site.

Public Access Goal: The proposed restoration will not have adverse effects on the public shorelines of Skagit County. The proposed project will not be a detriment, but rather will be a benefit to the public interest by improving water quality, increasing wetland area and function, improving fish and wildlife habitat in the basin, and reducing localized flooding related to Nookachamps Creek, East Fork Nookachamps Creek, and Mud Creek. The site does not currently provide physical public access, but will allow visual access to the restored shorelines for the public to enjoy.

Economic Development: The proposed project is an optimum use of the site because it restores marginal agricultural land that requires extensive drainage. Additionally, the proposed activities are shoreline dependant and shoreline related actions that will co-exist with the natural and human environments.

Recreation: The proposed restoration site will be preserved in perpetuity. There are no existing or planned public uses of the shoreline at the site,

although there will be visual access to the open spaces provided by the environmental bank. The proposed restoration site will preserve fish and wildlife habitat that will support off-site recreation opportunities such as bird-watching and fishing.

Historic/Cultural/Educational Goal: Due to the nature of the proposed site, public activities such as educational opportunities or wildlife and fish research may be allowed to occur at the site to the extent that the ecological functions of the restoration are not compromised. Historically, the proposed restoration site was a large riparian and wetland complex that was drained for agricultural use. The proposed activities, including the landfill actions, will restore the site to functioning riparian and wetland habitat.

Restoration and Enhancement Goal: The shorelines located within the proposed restoration site will be restored to achieve increased wetland functions, fish and wildlife habitat, and hydrologic function. As described above, the site does not provide public access, but fish and wildlife research and educational opportunities may be allowed at the site.

Furthermore, permits from Skagit County have been submitted and are in the approval process.

(2) All landfill should not:

- a. Adversely alter natural drainage patterns, currents, river and tidal flows.
- b. Interfere with or adversely affect floodwater flows and capacities.
- c. Create conditions that would endanger public health and safety.

Compliance Response: Proposed landfill will not adversely alter natural drainage, water flow and capacity, and will not create conditions that endanger public health and safety. On the contrary, the proposed landfill and associated dredging will restore natural drainage patterns at the site, will improve water capacity by encouraging over bank flow during storm events, and will improve public health and safety by reducing the potential magnitude of local flooding. A detailed analysis of hydrologic and hydraulic processes resulting from the proposed activities is presented in the Skagit Environmental Bank Response to Skagit County and Public Comments and Hydrologic and Hydraulic Basis of Design report included with this report.

(3) Review of proposals for landfills should assess the overall value of the landfill site in its present state versus the proposed shoreline use to be created and other future potential public or

private shoreline uses, expressed in short and long range economic, social and environmental terms. Such potential uses include but are not necessarily limited to agriculture, aquaculture, fish, shellfish, and wildlife research and resource preservation, commercial fishing, and recreation opportunities.

Compliance Response: The project proponents and the Skagit Land Trust have obtained three appraisals of the property in its existing state. Each of them shows that the land on the property, if used for farming, is worth about between \$1,200 and \$1,400 per acre. In general, farmland in the Skagit County is worth from \$1,000 to \$7,000 per acre. Thus, the value of the farmland on the farm, and on the wetland site, in particular, if used for agriculture is at the low end of the range for Skagit County. We believe that this is hard market evidence that the land is not “prime” for farmland, and is not well suited for agriculture.

Moreover, as described in Section C-7 of the Skagit Environmental Bank Response to Skagit County and Public Comments report, the applicant has proposed, as part of its project mitigation package, a set-aside of funds for the purchase of development rights for long term protection of agricultural lands.

The landfill activities will facilitate the restoration of wetland conditions at the site. The wetland restoration will be of superior quality, and will be approved as such by the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Environmental Protection Agency, National Marine Fisheries Service, Skagit County Planning and Development Services, and the State Department of Ecology. The project will produce a significant gain in wetland and forested upland area (374 acres) and functional value within the Skagit watershed. Wetland permittees, that impact wetland resources, will be required to compensate for the loss at ratios of greater than one acre of environmental bank compensation for every acre of wetland impact. Therefore, the environmental bank will serve to provide a no net loss and a net gain in wetland area and function (including water quality, fish habitat, stormwater storage, and wildlife habitat) within Skagit County.

Furthermore, the site is not well suited for agriculture because of the excessive draining required to use the site for farming. Due to the amount of draining that would be required at the site for other uses, in addition to the various State and local regulations affecting a property with such proximity to rivers, shorelines, and wetlands, very few alternative shoreline uses would be appropriate. Due to the nature of the proposed site, wildlife and fish research could still occur at the site. Furthermore, the proposed use of the site is essentially resource restoration followed by preservation.

(4) Public uses – Proposals for landfills should demonstrate that the operation will not be detrimental to the public interest and uses of the shoreline and water body.

Compliance Response: The proposed dredging and associated landfill will facilitate the overall creation of the environmental bank. As described in the Skagit Environmental Bank Response to Skagit County and Public Comments report, Hydrologic and Hydraulic Basis of Design report, SEPA Environmental Checklist, and JARPA application materials, the proposed project will not be a detriment, but rather will be a benefit to the public interest by improving water quality, increasing wetland area and function, improving fish and wildlife habitat in the basin, and reducing localized flooding related to Nookachamps Creek, East Fork Nookachamps Creek, and Mud Creek. There are no existing or planned public uses of the shoreline at the site, although there will be visual access to the open spaces provided by the environmental bank. Therefore, the project will not be detrimental to public uses of the shoreline and water body.

(5) Public Access – Landfills and their uses, if allowed on shorelines, should enhance public access to the shoreline and water body.

Compliance Response: The proposed landfill activities will not limit the public access to the shoreline and waterbody. The site is currently private property. No access to the shoreline is currently provided, and there are no existing or planned public uses of the shoreline at the site. Upon completion of the project, there will be visual access to the open spaces provided by the environmental restoration area. Due to the nature of the proposed site, public activities such as educational opportunities or wildlife and fish research may be allowed to occur at the site to the extent that the ecological functions of the restoration are not compromised.

(6) Water Quality – All landfill projects should comply with the water quality standards, guidelines, and regulations of applicable regulatory agencies.

Compliance Response: The proposed dredging operations will comply with water quality standards, guidelines, and regulations of federal, state, and local agencies. The proposed project will also comply with all permit requirements relating to water quality, including Washington State Department of Ecology 401 Water Quality Certification.

(7) Landfill material –

- a. All materials used for landfill projects should not cause present or future degradation of ground and surface water quality and shoreline areas.

- b. Dredge spoils that have been determined to be polluted and sanitary landfill materials should be prohibited as a source of landfill material.

Compliance Response: All landfill areas on the will be comprised of dredge material from the site and will not degrade ground or surface water quality. According to the soil survey of Skagit County (SCS 1989), five silt loam soil series occur on the site, including Bellingham silt loam (hydric), Nookachamps silt loam (hydric), Skipopa silt loam, Sumas silt loam (hydric), and Field silt loam. Soils that will be dredged and ultimately placed in onsite landfills consist of these silt loam types.

No excavated soils will be removed from the Clear Valley Farm boundary. Excess material that is graded at the site will be stockpiled on the property in five stockpile locations, the largest of which is located outside of the 100-year floodplain (see Figure D-4 in the Skagit Environmental Bank Response to Skagit County and Public Comments provided on a CD with this document). The site has been in agricultural use since its development, and therefore no hazardous materials are expected to be included in the dredged materials. Neither dredge spoils that have been determined to be polluted, nor sanitary landfill, shall be a source of landfill material. A Phase I Environmental Review was conducted on the property in 2004 (Herrera 2004) and the findings indicated that there was no potential for hazardous materials to be present in the former farm fields or within the stream sediments.

(8) Natural Resources, Processes, and Other Uses – Landfills, if allowed on shorelines, should not significantly damage, diminish, or adversely affect:

- a. Prime agricultural land.
- b. Natural resources such as sand and gravel deposits, timber, or recreational beaches.
- c. Fish, shellfish, and wildlife migratory routes, spawning, nesting, harvesting, and habitat areas.
- d. Geohydraulic processes and shoreforms.
- e. Public access to publicly owned shorelines and water bodies.

Compliance Response: “Prime” farmland soils, as that term is generally used, do not occur within the project site. This wetland mitigation site was selected in part because the land is only marginally productive due to excessively wet soil conditions. According to the U.S. Department of Agriculture, Natural Resources Conservation Services’ (NRCS) Skagit

County Soils Classification Data Base, the land for the wetland site is described as “not highly productive” and the soils all have very severe limitations. They are classified as “Prime Farmland if Drained.” This is a classification below “Prime” status. Any diminution in existing agricultural lands will be mitigated by the setting aside of funds for the purchase of development rights for long term protection of agricultural lands as described in Section C-7 Skagit Environmental Bank Response to Skagit County and Public Comments report. Landfill materials from dredging will not be placed on, or adversely impact, any of the described areas or activities including natural resources such as sand and gravel deposits, timber, or recreational beaches; fish, shellfish, and wildlife migratory routes, spawning, nesting, harvesting, and habitat areas; geohydraulic processes and shoreforms; and public access to publicly owned shorelines and water bodies. The proposed restoration site was formerly a forested wetland complex that has been partially drained in order to facilitate agricultural activities. The restoration activities will restore the site to its original condition, vastly improving the natural processes and resources at the site. Specifically, the proposed restoration actions will restore and improve fish and wildlife migratory routes, spawning, nesting, and habitat areas within the project site.

Location

(1) Landfills should not locate:

- a. In prime agricultural land.
- b. In estuaries, natural wetlands, and marshes.
- c. Along net positive drift sectors, where geohydraulic processes are active, and where accretion shoreforms would be damaged or irretrievably lost.
- d. Where extensive shore defense or stabilization works would be necessary.
- e. Below the ordinary high water mark.
- f. Where they would fill marine and river indentation features such as eddies, pools, and aeration drops that provide proven biologically productive aquatic habitats.

Compliance Response: Landfill materials will not be placed on, or adversely impact, any of the areas described above. Although soil stockpiles will be placed within the OHWM of Nookachamps Creek and

East Fork Nookachamps Creek, these areas of landfill will not adversely affect local conditions or river floodway processes. Alternatively, these actions, and the overall creation of the environmental bank, will improve existing conditions by enhancing river morphology, wetland conditions, water quality, and fish and wildlife habitat. The stockpiles within the OHWM will create habitat complexity and serve as flood refuge for wildlife. Furthermore, as part of the site restoration there will be material excavated from below the OHWM, creating an overall net gain in flood storage capacity of 16 acre-feet at the project site.

Placement of the landfill materials will not affect water quality, geohydraulic processes, will not contain pollutants, will not adversely affect aquatic life, and will comply with the requirements of regulating agencies. The stockpiles will not be located in Prime agricultural land. Any diminution in existing agricultural lands will be mitigated by the setting aside funds for the purchase of development rights for long term protection of agricultural lands as described in Skagit Environmental Bank Response to Skagit County and Public Comments, Response C-7. Specific information describing why Prime Agricultural land does not exist at the site is presented in Response number 8 above.

Design and Construction

(1) Landfills should be designed no larger than necessary for the proposed use.

Compliance Response: The landfills proposed on the site will not be designed to be larger than necessary for the proposed use, which is to accept dredge spoils resulting from the proposed construction of the wetland restoration. The total fill volume is estimated without considering the affects of the Phase I actions. It is anticipated that the conservative fill volume will be less than estimated after the affects of the Phase I activities are realized.

(2) Landfills should be designed, constructed, and maintained to prevent, minimize and control all material movement, erosion, and sedimentation from the affected area.

Compliance Response: The landfills will be designed, constructed, and maintained to prevent, minimize, and control all material movement, erosion, and sedimentation from the affected areas. All activities proposed for the site will comply with State and Skagit County water quality regulations, which dictate the construction and maintenance of the stockpiles (landfill areas) on the site. A majority of the excavated materials will be located outside of the 100-year floodplain.

(3) Drainage and floodwaters – All landfills, if allowed on shorelines, should be designed so as not to adversely affect or interfere with the flow of surface, subsurface, and floodwaters. Landfill proposals should take mitigating measures to minimize effects to drainage and floodwaters.

Compliance Response: The predicted effect upon the shore and hydraulic processes, adjacent properties, and shoreline and water uses is presented in the Hydrologic and Hydraulic Basis of Design report. In summary, the project does not adversely impact surface or groundwater hydrology outside of the project boundary during floods. At lower stages, water levels are elevated above existing levels at the upstream boundaries, but streamflow during these times is regulated by groundwater discharge. Because streamflow is controlled by groundwater discharge, the effect of heightened stage in the streams on the groundwater hydrology is nullified. The largest of the proposed stockpiles (Stockpile 4) is located outside of the 100-year floodplain. Even with the presence of the other four stockpiles in the floodplain, flood storage at the site will increase by 16 acre-feet. There are no adverse impacts to stream flow, ground water flow, or floodwaters as a result of the landfill or the restoration project; and therefore, no mitigation measures are necessary.

(4) Maintenance – All shoreline areas disturbed by landfill construction and associated activities should be replanted and stabilized with compatible, self-sustaining vegetation.

Compliance Response: All excavated materials will be used at the site during the backfilling of the ELJ structures, filling the ditches, and generating the proper grade for wetland restoration at the site, with excess material being placed in the stockpiles identified on Figure D-4 in the Skagit Environmental Bank Response to Skagit County and Public Comments. Once completed, the restored areas where dredge spoils have been placed will be stabilized by planting native vegetation and preserved in perpetuity. Stockpiles will be temporarily stabilized using appropriate BMPs prior to establishment of native vegetation.

Impacts

(1) Review of proposed landfills should be accomplished concurrently with review of the intended land use and, at that time, the findings of significance of environmental impact should be determined.

Compliance Response: The potential impacts from the proposed project have been evaluated through Skagit County's SEPA process and are documented in a Biological Evaluation and a JARPA application

prepared to meet State and Federal permit requirements. The technical basis of the project is documented in the Hydrologic and Hydraulic Basis of Design report and the Skagit Environmental Bank Response to Skagit County and Public Comments. Copies of these documents are in the project file at Skagit County and were also included on a CD with the draft delivery of this document. All impacts to aquatic resources will be temporary construction impacts, and the overall result of the proposed project will be a vast improvement to the aquatic and shoreline environment.

(2) Landfills and their associated uses and activities should minimize and mitigate adverse impacts to the shoreline and aquatic environment and to adjacent and nearby land and water uses.

Compliance Response: As stated above, the landfill areas at the site are a direct result of the proposed dredging at the site. All proposed activities have been analyzed for impacts to the environment in the SEPA process and the Endangered Species Act compliance documents. The proposed actions will result in the completion of the wetland restoration, which will be a direct improvement of the existing conditions at the site. Prior to farm conversion, the site was a forested wetland complex and the proposed restoration activities will restore the ecological functions formerly present at the site.

Landfill Regulations

A. Shoreline Areas

(3) Rural. Landfills are permitted subject to the General Regulations.

Compliance Response: The current shoreline master program environment designation of the site is Rural. Landfill materials will only be placed as backfill in the ELJ structures, to fill the drainage ditches on the property, and in stockpiles located on the site and outside of the 100-year floodplain.

General

(1) Related uses – Landfills shall be permitted only for the purpose of facilitating water and shoreline dependent or related uses consistent with this program.

Compliance Response: The proposed stockpiles, and the larger wetland restoration project, are consistent with Shoreline Dependent Uses because

the proposed actions are dependent on their location adjacent to the shoreline in order to restore natural shoreline function (referred to as natural shoreline phenomena in the Skagit County Code), wetland function, and stream functions at the restoration site. Furthermore, the proposed actions are also consistent with Shoreline Related Uses because the stockpiles and the larger wetland restoration project cannot operate successfully inland from shorelines under existing physical conditions. The proposed restoration site is a unique combination of appropriate size and potential for restoration due to the site formerly being forested wetland and adjacent to Nookachamps Creek and the East Fork of Nookachamps Creek.

All proposed landfill operations have been or are in the process of coordination with federal, state, and local plans, policies, guidelines, and regulations. Proposed landfill is consistent with the Shoreline Management Act and will facilitate meeting the goals of the Nookachamps Watershed Nonpoint Action Plan, Washington State Department of Ecology-Approved (NWMC and Skagit County 1995), 2005-2007 Puget Sound Priorities, Puget Sound Action Team (PSAT 2004), and the Skagit County Comprehensive Plan (SCPPC 2003) goals. Furthermore, permits from Skagit County have been submitted and are in the approval process.

(2) Landfills are not permitted:

- a. Below the ordinary high water mark (OHWM) of all shoreline areas EXCEPT as a conditional use for approved water and shoreline developments that are consistent with this program.
- b. On marine, river, or lake accretion beaches, EXCEPT for approved beach restoration or enhancement programs.
- c. In estuaries and their natural wetlands.
- d. In floodways where flood capacity, flow, and direction would be adversely affected.

Compliance Response: A shoreline conditional use permit is being sought for the placement of the four smaller stockpiles below the OHWM. The proposed stockpile areas are not within marine, river, or lake accretion beaches, or estuaries or their wetlands. Flood capacity flows will not be adversely affected by the proposed restoration work and associated landfill activities. Although soil stockpiles will be placed within the OHWM of Nookachamps Creek and East Fork Nookachamps Creek, these areas of landfill will not adversely affect local conditions. As described above, these actions will improve existing conditions by enhancing wetland conditions, water quality, and fish and wildlife habitat. The

stockpiles within the OHWM will create habitat complexity in the environmental bank and serve as flood refuge for wildlife. Furthermore, as part of the site restoration there will be material excavated from below the OHWM (a majority of this material being placed outside of the 100-year floodplain) creating an overall net gain in flood storage capacity of the project site by 16 acre-feet.

(3) Proposals for landfills shall include the following:

- a. Proposed use of the landfill area.
- b. Physical, chemical, and biological characteristics of the fill material.
- c. Source of landfill material.
- d. Method of placement and compaction.
- e. Location of landfill relative to natural or existing drainage patterns.
- f. Location of perimeter relative to the OHWM.
- g. Perimeter erosion control or stabilization means.
- h. Type of surfacing and runoff control devices.

Compliance Response:

- a. *The proposed landfill areas will be used as stockpiles for excavated soils resulting from the excavation and restoration proposed for the environmental bank. Stockpiles 1, 2, and 3 are within the OHWM and are designed to be flood refuge for wildlife. Dredged and excavated soils will also be used to backfill the ELJ structures and to fill the existing ditches.*
- b. *Soils of the site are comprised of unconsolidated alluvial sediment. According to the soil survey of Skagit County (SCS 1989), five silt loam soil series occur on the site, including Bellingham silt loam (hydric), Nookachamps silt loam (hydric), Skipopa silt loam, Sumas silt loam (hydric), and Field silt loam. Soils that will be dredged consist of these silt loam types and are primarily hydric soils. The site has been in agricultural use since its development and therefore no hazardous materials are expected to be included in the dredged materials.*
- c. *All landfill material will be soils from the site. Soil characteristics are described above in b.*

- d. *In general, the excavation and grading of the stockpiles will occur using a backhoe or other excavator. Methods are detailed in the Biological Evaluation prepared for the proposed project and included with this submittal. BMPs will be employed to eliminate adverse effects to water quality during construction. Dredging will occur during Phase I of the proposed project and will be restricted to the HPA approved in-water work window (July 1 to September 30).*
- e. *Stockpile area locations are presented in Figure D-4 in the Skagit Environmental Bank Response to Skagit County and Public Comments. Stockpiles 1, 2, 3, and 5 are all within the 100-year flood plain.*
- f. *Stockpiles 1, 2, 3, and 5 are located within the 100-year floodplain and Stockpile 4, the largest stockpile with a capacity of up to 1,200,000 cubic yards, is outside of the 100-year floodplain. Stockpiles 1, 2, and 3 are within the OHWM and will provide flood refuge habitat for wildlife during backwater events on the Skagit River.*
- g. *All stockpiles will be planted with native vegetation and specifically with a fast growing grass seed mix to prevent initial erosion (as described below in more detail). Standard BMPs will be employed during construction and are outlined in the Biological Assessment prepared for this project. There are no other erosion control or stabilization measures necessary for the soil stockpiles.*
- h. *As described in detail below, the stockpiles will be surfaced with native vegetation to reduce erosion and runoff from the stockpiles.*

(4) Landfill materials:

- a. Solid waste, polluted dredge spoils, wood, plasterboard, or other materials that may degrade surface and groundwater quality and the shoreline area are prohibited as landfill material.
- b. Landfills utilizing masonry materials and/or concrete asphalt, or brick rubble shall require an adequate cover of soil or topsoil stabilized with compatible, self-sustaining vegetation. Rock, gravel, or sand are preferred landfill materials.

Compliance Response: Materials within the soil stockpiles will consist of natural soil and sediment dredged as part of the proposed restoration of the environmental bank. No polluted soils, wood, plasterboard, or other

materials that may degrade surface and groundwater quality will be used as landfill. Additionally, no masonry materials and/or concrete asphalt, or brick rubble will be used in the landfill areas.

(5) Erosion control – Landfills shall be designed, constructed, and maintained to prevent, minimize, or control all material movement, erosion, and sedimentation from the affected area.

Compliance Response: Herrera recommends a two-step approach for preventing soil erosion while trying to establish a thriving native plant population. It is projected that the project site, including stockpiles, will be reseeded after grading activities in mid-September. A mixture of native grass seed (explained in the next paragraph) and a rapid-germinating ground cover such as REGREEN® will be applied to the site in both wetland and upland areas. The benefit of adding REGREEN, a wheat/wheatgrass sterile hybrid, is that it germinates in 6 days and will form a temporary cover crop in less than a month. This will protect against soil erosion and weed invasion while allowing the native grass seed to become established.

*Two native grasses are recommended for seeding the upland buffer (including the stockpiles): California brome (*Bromus carinatus*, an upland species) and blue wildrye (*Elymus glaucus*, an upland species). All of these plants have a demonstrated seeding track record and will germinate within 7 to 21 days. The County has stated that one to two months of native grass growth would not be sufficient to protect soil, however it should be noted that when the site was being operated as a dairy farm, the Clear Valley fields would remain bare throughout the winter. This was the result of corn harvesting activities. Soil erosion and sediment transport to Nookachamps Creek was a common feature. An aggressive seeding strategy would provide a far greater benefit when compared to past land use activities.*

(6) Piling, pier supports – Pile or pier supported structures essential for shoreline dependent or related uses shall be preferred over landfills.

Compliance Response: No structures, including pile or pier supported structures, are required for the shoreline uses proposed as part of the environmental bank.

(7) Road development – Landfills for approved road development in floodways or wetlands shall be permitted only if pile or pier supports are proven infeasible. Upgrading of existing roads are exempt from this requirement.

Compliance Response: Although some of the fill material generated at the site will be used for a temporary access road located within the 100-year

floodplain, the overall landfill is not intended for road construction. The access areas will be graded down during the final phase of the project to create a mosaic of wetland and small upland islands. The proposed site activities will greatly enhance the wetland and riparian character of the site compared to existing conditions. Furthermore, the temporary access road will be a primitive road, making piles and piers infeasible.

Section 14.26 Skagit County Code; Chapter 7.16 Shoreline Stabilization and Flood Protection

Shoreline Stabilization and Flood Protection Policies

General Policies

(1) Streamway modification and marine diking programs should be coordinated and monitored to provide for more comprehensive planning of Skagit County's shorelines.

Compliance Response: Modifications to Nookachamps Creek and East Fork Nookachamps Creek will be monitored. Hydrologic monitoring will be conducted after the completion of Phase I to assess how the local ground water table responds to the filling of ditches and installation of ELJs.

(2) Recognizing that streamway modifications may cause interference with normal river geohydraulic processes that may lead to erosion of other up and down river shorelines, then such modifications and stabilization measures should incorporate basic geohydraulic principles and be located, designed, coordinated, and maintained for homogeneous river reaches. Such modifications and measures should be sited and designed by qualified, professional personnel.

Compliance Response: The effects of the proposed ELJ structures have been studied by highly qualified personnel and the results of these studies are presented in the Skagit Environmental Bank Response to Skagit County and Public Comments report and Hydrologic and Hydraulic Basis of Design report included on a CD with this document.

In summary, the project does not adversely impact surface or groundwater hydrology outside of the project boundary during floods because the amount of water flooding from the Skagit River renders the structures at the site obsolete. At lower stages, water levels are elevated approximately 1-foot above existing levels up to 3,300 feet upstream of the project boundaries on East Fork Nookachamps Creek. No impacts to land uses on the upstream properties is expected. Continued monitoring of gauge locations and additional groundwater monitoring wells on the

Upstream/East Boundary, the only boundary prone to increased water levels, should confirm this hypothesis.

Design and Location

(1) All bank stabilization and flood protection measures should be constructed to comply with the design and location standards and guidelines of applicable agencies.

Compliance Response: The proposed measures will be constructed to comply with the design and location standards and guidelines of Skagit County, the Washington Department of Fish and Wildlife, U.S. Fish and Wildlife Service, NOAA Fisheries, and the U.S. Army Corps of Engineers. Applicable permits and concurrences have been applied for with the various agencies including Skagit County.

(2) Riprapping and other bank stabilization measures should be located, designed, and constructed primarily to prevent damage to agricultural land, public roads and bridges, existing homes and residential areas, or other structures or natural features whose preservation is in the public interest. Such measures should not restrict the flow of the river or stream.

Compliance Response: The bank stabilization and flood protection in the form of ELJ structures will not damage upstream or downstream agricultural lands, public roads and bridges, existing homes and residential areas, or other structures. On the contrary, the proposed structures will reduce the downstream effects of high stream flows and will improve aquatic and wildlife habitat at the site. The proposed structures will not restrict the flow of the river. Specific analyses relating to the in-water structures are presented in the Skagit Environmental Bank Response to Skagit County and Public Comments report and Hydrologic and Hydraulic Basis of Design report included on a CD with this document.

(3) **Fish and Wildlife Resources** – Recognizing the value and interdependency of water bodies and associated wetlands as biologically productive habitats and recognizing the intent of the Shoreline Management Act (RCW 90.58.030(2) and WAC 173-22-030), shoreline stabilization and flood protection projects should be located landward of natural wetlands, marshes, and swamps of associated fresh and marine water bodies.

Compliance Response: The proposed ELJ structures and restoration of the site to improve bank stability and provide flood protection will improve habitat for fish and other aquatic species. The project has already received concurrence from the USFWS and NOAA Fisheries on the Endangered Species Act consultation and has applied for a Hydraulic

Permit Approval from the Washington Department of Fish and Wildlife (WDFW). The project will restore an area that was a former wetland, prior to drainage of the area.

(4) Braided and meandering channels and associated shoreline areas should not be the locations for intensive land use developments such as those of an industrial, commercial, or residential nature.

Compliance Response: The proposed project does not include intensive land use developments such as industrial, commercial, or residential development projects, nor will any of the proposed work occur in braided or meandering channels and associated shorelines.

(5) Substantial stream channel direction modification, realignment, and straightening should be discouraged as a means of shoreline and flood protection and for protection of road rights-of-way, navigational routes, and other construction or developmental projects.

Compliance Response: The only modification to the stream channel will be from the installation of ELJ structures within Nookachamps Creek and East Fork Nookachamps Creek. The stream will not be realigned or straightened; rather, the stream habitat within the site will increase in complexity following the installation of the ELJs and the restoration of the site.

Materials

(1) Shoreline stabilization and revetment material should consist of substantial rock and should meet the standards and guidelines of the Soil Conservation Service.

Compliance Response: The proposed shoreline stabilization will be in the form of ELJ structures that do not require any substantial rock materials. The ELJ structures will be backfilled with materials that are excavated (dredged) from the streambed during construction of the ELJs. The design meets the standards of the Soil Conservation Service.

(2) Junk and solid waste should not be permitted for shoreline stabilization and revetment material. Concrete and concrete waste should not be used as stabilization and revetment material.

Compliance Response: No junk, solid waste, or concrete will be used in the ELJ structures as shoreline stabilization or flood control measures.

(3) Shoreline stabilization programs should utilize natural, perennial vegetation either as stabilization material alone or as complementary to other materials.

Compliance Response: Natural, perennial, and emergent vegetation will be planted throughout the site as part of the wetland restoration phases of the proposed project described in the Project Description, which will be complimentary to the ELJ structures and overall shoreline stabilization and flood control at the site. Conifer wood will be obtained from a permitted source for use in the ELJ structures.

Natural Features

(1) Natural features such as snags, stumps or uprooted trees which support fish and other aquatic systems, and do not intrude on the navigational channel or reduce flow, and do not threaten agricultural land and existing structures and facilities should be allowed to remain.

Compliance Response: No naturally occurring logs, log jams, stumps, snags, or uprooted trees that support fish and aquatic systems will be removed as part of the proposed project. In addition, several ELJ structures will add large woody debris to the stream channels at the site.

Agricultural Practices

Recognizing the importance of vegetation as an aid to bank stabilization, agricultural operations should encourage grazing practices, which enhance vegetation on and adjacent to streambanks. Cultivation to the water's edge should be avoided.

Compliance Response: As a result of the proposed project, no further grazing activities will occur at the site. Vegetation that is present and that will be planted as part of the wetland restoration will not be grazed or cultivated. Effective buffers will be established at the perimeter of the project.

Alternatives

Shoreline stabilization programs should be encouraged to develop alternative methods of streamway modifications utilizing natural systems of stabilization and geohydraulic principles.

Compliance Response: The proposed project uses a natural system of bank stabilization employing ELJ structures and includes restoration

planting of the site in addition to being designed based on sound geohydraulic principals. Specific details regarding the hydrologic and hydraulic analyses completed for the site are presented in the Hydrologic and Hydraulic Basis of Design report included with this submittal.

Impacts

(1) Recognizing that shorelines of recreation, wildlife, and aesthetic value are limited and irreplaceable resources, then shoreline stabilization and flood protection projects should consider their potential effects and impacts upon such resources.

Compliance Response: The proposed project will positively impact recreation, wildlife, and aesthetic values of the site. Potential positive and adverse impacts to these types of resources have been analyzed in detail in the SEPA Environmental Checklist, the JARPA application, and the Biological Evaluation for the site. The proposed project has received concurrence on the Biological Evaluation from USFWS and NOAA Fisheries. The project is responding to comments from Skagit County on the SEPA Environmental Checklist, in addition to comments on permit applications submitted to the Corps, WDFW, and Ecology in response to the JARPA application.

(2) Recognizing that the related shoreline stabilization and flood protection activities of filling, grading, lagooning, and dredging may have a substantial impact upon the existing aquatic and biological systems, navigation, and river hydraulics by subsequent erosion and sedimentation, then these activities and their possible impacts should be recognized.

Compliance Response: The filling, grading, and dredging associated with the bank stabilization measures (ELJ structures and restoration plantings) have been evaluated for impacts to biological systems and river hydraulic processes. These analyses are presented in the Hydrologic and Hydraulic Basis of Design report, SEPA Environmental Checklist, the JARPA application, and the Biological Evaluation prepared for this project.

Shoreline Stabilization and Flood Protection Regulations

Rural

- a. Shoreline stabilization and flood protection measures are permitted subject to the General Regulations.
- b. Channel modifications and dams and impoundments are a conditional use.

Compliance Response: The current shoreline master program environment designation of the site is Rural. There will be no modifications to the stream channel other than ELJ structures being placed along the banks of Nookachamps Creek and East Fork of Nookachamps Creek. Filling of the drainage ditches does not constitute a channel modification because the drainage ditches are not natural stream channels and were constructed for the purpose of draining existing wetlands for agricultural purposes. Although the ELJ structures will create structures across the stream channel to raise the water level for the purposes of natural collection of sediment, these activities will retain water to restore wetland hydrology and allow the river to engage the floodplain as it historically did. The ELJs will not retain water for the purposes of flood or irrigation water storage, erosion control, or power generation. Nor will impoundments be created for the chief purposes of flood control, livestock watering, irrigation supplies, recreation, commercial or recreational fish rearing, or property enhancement. The planned project is consistent with uses allowed in rural shorelines.

General Regulations

(1) Shoreline permit/statement of exemption – In order to assure that shoreline stabilization and flood protection measures are consistent with this program as required by RCW 90.58.140(1), no work may commence without the responsible person or agency having obtained either a shoreline permit or statement of exemption from this department.

Compliance Response: No work will commence without shoreline permit or statement of exemption from the Skagit County Department of Planning and Development Services.

(2) Qualifications for approval – Shoreline stabilization and flood protection measures shall be allowed only when adequate evidence is presented that one of the following conditions exist:

- a. Significant erosion of agricultural lands.
- b. High water or erosion threatens public works and properties, including roads, bridges, railroads, and utility systems.
- c. High water or significant erosion damages or threatens existing homes and residential areas.
- d. High water or significant erosion damages or threatens to damage existing commercial and industrial uses and developments.

Compliance Response:

- a. *As a result of high flows and a lack of stream roughness, there is down cutting of the stream channels resulting in large cut banks and erosion throughout the site, which is currently used as agricultural land.*
- b. *High water at and downstream of the site does not threaten public properties or structures.*
- c. *High water does not damage or threaten existing homes and residential areas.*
- d. *High water does not damage or threaten to damage existing commercial and industrial uses and developments near the site.*

(3) Professional design – The County may require professional design of shoreline stabilization and flood protection works where such projects will cause interference with normal river geohydraulic processes, leading to erosion of other up and down river shoreline properties or adverse effects to shoreline resources and uses.

Compliance Response: The proposed project will not cause interference with normal river geohydraulic processes, leading to erosion of other upstream and downstream river shoreline properties or adverse effects to shoreline resources and uses. A complete analysis of the hydrology and hydraulics associated with the proposed project is presented in the Hydrologic and Hydraulic Basis of Design report included in this submittal.

(4) Channel modifications – River and stream channel direction modification, realignment, and straightening are not permitted unless for substantiated purposes connected with uses consistent with this program.

Compliance Response: The proposed project will not modify the stream channel direction, realign, or straighten the stream channel. The only modification of the stream channel will be the installation of the ELJ structures in the banks of Nookachamps Creek and East Fork Nookachamps Creek.

(5) Design and Construction

- a. Existing streambank vegetation shall be preserved to the maximum extent feasible during shoreline stabilization and flood protection work.
- b. New or expanded dike, revetment, or riprap systems, cut and fill slopes, and backfilled areas shall be progressively planted with compatible, self-sustaining, and soil stabilizing vegetation.
- c. All works shall allow for the passage of surface and ground waters.
- d. All works shall be designed and constructed to meet the requirements and standards of the County Engineer, State Departments of Fisheries and/or Game, Corps of Engineers where applicable, and Soil Conservation Service.

Compliance Response:

- a. *Existing streambank vegetation throughout the site generally consists of non-native or agricultural vegetation. Following the installation of ELJ structures and filling of the drainage ditches, Phase II of the proposed project will replant the site with native vegetation that will stabilize the shorelines of the entire site.*
- b. *All areas that are disturbed as part of the ELJ installation and ditch filling will be planted with native vegetation that will stabilize the shorelines in these locations.*
- c. *Surface and ground water will have passage throughout construction and after the proposed project is complete.*
- d. *Plans for all of the proposed activities have been submitted to Skagit County, the Corps, USFWS, NOAA Fisheries, and WDFW for their approval. The proposed project has received concurrence on the Biological Evaluation from USFWS and NOAA Fisheries, a Determination of Non-Significance from Skagit County on the SEPA Environmental Checklist, and applicable permits from the Corps, WDFW, and Ecology in response to the JARPA application.*

(6) Materials

- a. Materials for shoreline stabilization and flood protection works shall not consist of solid waste, junk or abandoned automobiles, asphalt or macadam, or any building demolition debris except that which is used for emergency purposes.

- b. Techniques utilizing totally or in part vegetative bank stabilization procedures shall be preferred over structural means such as concrete revetments or extensive riprap.

Compliance Response: No solid waste, junk or abandoned automobiles, asphalt or macadam, or any building demolition debris will be used as part of the proposed project. The banks of the site will be planted with native vegetation and the primary bank stabilization will be in the form of ELJ structures that use no concrete or riprap.

(7) Estuaries and wetlands – Any proposal to dike, drain, or fill tidelands, estuaries, salt marshes, and associated water bodies and wetlands shall provide a thorough evaluation of the natural productivity of the wetlands to be displaced and the proposed use.

Compliance Response: Only the drainage ditches at the site are proposed to be filled as part of the project. There will be no fill placed in tidelands, estuaries, salt marshes, and associated water bodies. There will be a significant net increase in wetland area and function as a result of the proposed project. Wetlands that existed in the property prior to construction of drainage ditches will be restored.

(8) Dams and impoundments – Dams and impoundments shall be subject to applicable Shoreline Area regulations.

Compliance Response: No dams or impoundments are proposed as part of the project.

(9) Project information – The county shall require and utilize the following substantiating information during review of shoreline stabilization and flood protection proposals:

- a. River channel hydraulics and floodway characteristics up and down stream from the project area shall be identified contingent upon the extent and nature of project work involved. Updated topography maps or phased (old and recent) aerial photography would be adequate.
- b. Existing shoreline stabilization and flood protection works within the area stipulated above.
- c. Physical, geological, and/or soil characteristics of the area.
- d. Existing and proposed shoreline water uses for the project area and area stipulated above.
- e. Predicted impact upon area shore and hydraulic processes, adjacent properties, and shoreline and water uses.

Compliance Response:

- a. River channel hydraulics and floodway characteristics upstream and downstream from the project have been analyzed in detail in the Hydrologic and Hydraulic Basis of Design report included on CD with this submittal. There are several aerial photograph based figures included in this report.*
- b. There is a series of berms at the site that contain high flows within the ditches and the stream banks are very high as a result of channel downcutting. The site floods when the Skagit River back flows into the Nookachamps system during high winter flows.*
- c. The physical, geological, and soil characteristics of the area are presented in the Hydrologic and Hydraulic Basis of Design report and the SEPA Environmental Checklist included on a CD with this submittal.*
- d. The existing and proposed shoreline water uses are presented in the project overview section of this report and in more detail in the Biological Evaluation and SEPA Checklist included on a CD with this submittal.*
- e. The predicted impact upon the shore and hydraulic processes, adjacent properties, and shoreline and water uses is presented in the Hydrologic and Hydraulic Basis of Design report. In summary, the project does not impact surface or groundwater hydrology outside of the project boundary during floods. At lower stages, water levels are elevated above existing levels at the upstream boundaries, but streamflow during these times is regulated by groundwater discharge. Because streamflow is controlled by groundwater discharge, the effect of heightened stage in the streams on the groundwater hydrology is nullified. Continued monitoring of gauge locations and additional groundwater monitoring wells on the Upstream/East Boundary, the only boundary prone to groundwater influence, is expected to confirm this hypothesis.*

Section 14.26 Skagit County Code; Chapter 11.03 Criteria for Granting Conditional Use Permits

(1) Permits for uses which are classified or set forth in this Master Program as conditional uses may be authorized providing the applicant can meet all the following criteria, the burden of proof shall be on the applicant.

- a. That the proposed use will be consistent with the policies of this Master Program and policies of RCW 90.58.020.
- b. That the proposed use will not interfere with the normal public use of public shorelines.
- c. That the proposed use of the site and design of the project will be compatible with other permitted uses in the area.
- d. That the proposed use will cause no unreasonable adverse effects to the shoreline environment designation in which it is located.
- e. That the public interest suffers no detrimental effect.

Compliance Response: Responses to this section is triggered because landfills below the OHWM are only permitted as a conditional use under Master Program Section 14.26 Chapter 7.06.

- (a) *The current shoreline master program environment designation of the site is Rural. There will be no modifications to the stream channel other than ELJ structures being placed along the banks of Nookachamps Creek and East Fork of Nookachamps Creek. The proposed restoration activities are consistent with RCW 90.58.020 and the regulations of the Skagit County Shoreline Master Program. Responses provided throughout this compliance narrative, specifically in Section 14.26, Chapter 7.04, Policy response 1 and Section 14.26, Chapter 7.06, Policy response 1b, address how the proposed restoration project meets the policies and goals of the Shoreline Management Act in Skagit County. Furthermore, proposed activities will facilitate meeting the goals of the Nookachamps Watershed Nonpoint Action Plan, Washington State Department of Ecology-Approved (NWMC and Skagit County 1995), 2005-2007 Puget Sound Priorities, Puget Sound Action Team (PSAT 2004), and the Skagit County Comprehensive Plan (SCPPC 2003) goals.*

Additionally, all required permits and coordination with regulatory agencies have been submitted for review or have been granted including: Endangered Species Act concurrence, U.S. Army Corps of Engineers approval under the Clean Water Act, Washington Department of Fish and Wildlife Hydraulic Approval Permit, and Washington Department of Ecology Section 401 water quality certification. Furthermore, permits from Skagit County have been submitted and are in the approval process.

- (b) The proposed site will not affect normal public use of the shorelines. The site is currently private agricultural property with no public access. Due to the nature of the proposed site, public activities such as wildlife and fish research may be allowed to occur at the site. Furthermore, the proposed use of the site is essentially resource restoration followed by preservation.*
- (c) The proposed use of the site and design of the project will be compatible with other permitted uses in the area. The majority of land in the vicinity of the site is agricultural land. The proposed site will produce a significant gain in wetland and forested upland area (374 acres) and functional value within the Skagit watershed. Wetland permittees, that impact wetland resources, will be required to compensate for the loss at ratios of greater than one acre of environmental bank compensation for every acre of wetland impact, therefore, the environmental bank will serve to provide a no net loss and a net gain in wetland area and function within Skagit County. Furthermore, the restoration and operation of the site will not alter the other permitted uses in the vicinity of the site. As previously described, the predicted effect upon the shore and hydraulic processes, adjacent properties, and shoreline and water uses is presented in the Hydrologic and Hydraulic Basis of Design report. In summary, the project does not adversely impact surface or groundwater hydrology outside of the project boundary during floods. At lower stages, water levels are elevated above existing levels at the upstream boundaries, but streamflow during these times is regulated by groundwater discharge. Because streamflow is controlled by groundwater discharge, the effect of heightened stage in the streams on the groundwater hydrology is nullified.*
- (d) Proposed dredging and filling will not adversely alter natural drainage, water flow and capacity, and will not create conditions that endanger public health and safety. On the contrary, the proposed dredging will restore natural drainage patterns at the site, will improve water capacity by encouraging over bank flow*

during storm events, and will improve public health and safety by reducing the potential magnitude of local flooding. A detailed analysis of hydrologic and hydraulic processes resulting from the proposed activities is presented in the Skagit Environmental Bank Response to Skagit County and Public Comments and Hydrologic and Hydraulic Basis of Design report included with this report.

- (e) *The proposed site will not detrimentally affect the public interest at the site. The site is not well suited for agriculture because of the excessive draining required to use the site for farming. Due to the amount of draining that would be required at the site for other uses, in addition to the various State and local regulations affecting a property with such proximity to rivers, shorelines, and wetlands, very few alternative shoreline uses would be appropriate. Additionally, prior to partial draining for agricultural needs, the site was a forested wetland complex. The proposed restoration activities, including the landfill activities, will restore site habitat conditions.*

(4) In the granting of all conditional use permits, consideration shall be given to the cumulative impact of additional requests for like actions in the area. For example, if conditional use permits were granted for other development in the area where similar circumstances exist, the total of the conditional uses should also remain consistent with the policies of the Master Program and RCW 90.58.020 and should not produce substantial adverse effects to the shoreline environment.

Compliance Response: This is a unique restoration opportunity in Skagit County because of the relatively contiguous site and its proximity to Nookachamps Creek and the East Fork Nookachamps Creek. There are other similar restoration projects occurring in the greater Skagit basin, including the Verdoes Reach project with the Skagit Fisheries Enhancement Group and Ducks Unlimited in the East Fork Nookachamps Creek watershed. That project enhanced floodplain processes and installed several large ELJs. That project received a Shoreline Exemption from Skagit County.

Another restoration project on the Skagit River is the Deepwater Slough Restoration Project site located on the South Fork of the Skagit River, just downstream and south of the town of Conway. The restoration project restored natural hydrologic processes and ecosystem function to approximately 204 acres of the Deepwater Slough section and all of Milltown Island by breaching some existing dikes and building some new ones (at the Deepwater Slough section only) to enclose a smaller portion of the island. That project also received a Shoreline Exemption from Skagit County.

Finally, members of the Skagit Watershed Council, local governments, citizens, and community groups have taken action to restore streamside vegetation and improve fish passage along the Skagit and its major tributaries and have prioritized and implemented additional projects based on science and the potential for collaborative action.

These projects were all found by the County to be consistent with the goals of the Master Program and RCW 90.58.020. Additionally, projects similar to the proposed environmental bank will further improve drainage, water quality, wetland habitat, and salmonid habitat in the County rather than create adverse effects to the shorelines.

Secondly, the portion of the Farm that we are restoring as a wetland bank is different from most farm land in the Valley. It has special and very peculiar characteristics that do not apply to farm land in the Valley or the County. In the language of real estate sales and valuation, this land has no “comparables.” That is in fact why we chose it.

There are a number of reasons why the land that we are restoring to its wetland character is unique. To cite some examples:

- 1. **Proximity** to riparian corridors (Nookachamps Creek and East Fork of the Nookachamps Creek). This enables part of the restoration to include riparian restoration, and, therefore, increase its ecological diversity.*
- 2. **Size.** The overall property is large, 805 acres, which enables a large scale restoration to take place, and enables the choice of the best acreage to restore. This increases the economic viability of the restoration project, by lowering costs per acre. It also increases the ecological value of the project because of the ability to pick the most appropriate and most likely to be successful areas, hydrologically, for restoration.*
- 3. **Location.** In choosing this property, we considered its proximity to developing urban areas. The property is close to the City of Mount Vernon and its Urban Growth Areas. We can trade wetland offset restoration credits in only a limited ecological area. There will be a good deal of high density development in these areas, creating a demand for wetland offset compensation credits.*
- 4. **Historical Wetland.** The property was historically a wetland, and was not cleared for agricultural purposes until 40 to 60 years ago. This means we have far greater certainty of being able to restore it, with far less cost and effort.*

5. ***Ecological Attributes.*** *When restored, this particular property will provide an especially wide diversity of ecological habitats, which provides a much wider market for sale of compensatory credits.*
6. ***Freshwater Wetland.*** *The property will restore a large freshwater wetland. Much of the land available for restoration in Skagit County is west of Interstate Highway 5, in the tidal-influenced areas of the Skagit Delta, and therefore would be saltwater restoration. Most of the impacts to wetlands in Skagit County are to freshwater wetlands. The statutory requirement is that impacts be mitigated “in-kind.” This means that impacts must be restored with like ecological mitigation. Therefore, impacts to fresh water wetlands must be compensated with fresh water restoration projects.*

In the search for an appropriate property within Skagit County, this was the only property that we found that had all of these attributes in such abundance. This property is highly unusual, and this is what justified the price that we paid for it. As we said above, the land does not have comparables, or at the very most has very few comparables, in Skagit County. Additionally, the site has low value for farming, given the need for extensive drainage in order to facilitate optimal agricultural conditions. The proposed site is a direct contrast to the many high quality farm areas located in the Skagit Valley that would not require the amount of drainage required at this site.

Conclusion

As described in this document and demonstrated in the various permit applications, response to comments, associated scientific reports prepared for the proposed project, and mitigation requirements, the proposal described in the JARPA application for Shoreline Substantial Development Permits is consistent with the requirements and policies contained in the Skagit County Code Section 14.26. Each policy and requirement relating to Dredging and Shoreline Stabilization and Flood Protection has been addressed in this document. To reduce the amount of repetitive documentation, we have included supplemental reports such as the Hydrologic and Hydraulic Basis of Design report, Biological Evaluation, SEPA Environmental Checklist, the Response To Skagit County and Public Comments, and the JARPA Application on a CD with this document. Approval of these applications is warranted and will allow for the creation of a wetland restoration and environmental bank that will greatly improve the wetland acreage, wetland function, water quality, and fish and wildlife habitat within the vicinity of the site.

References

- Herrera. 2004. Phase I Environmental Site Assessment – Clear Valley Farm. Herrera Environmental Consultants, Inc., Seattle, Washington. May 2004.
- NMFS. 1995. Juvenile Fish Screen Criteria. National Marine Fisheries Service, Environmental and Technical Services Division, Portland, Oregon.
- NMFS. 1996. Juvenile Fish Screen Criteria for Pump Intakes. May 9, 1996. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Environmental and Technical Services Division, Portland, Oregon. Obtained May 1, 2004, from agency website: <http://www.nwr.noaa.gov/1hydrop/pumpcrit1.htm>.
- NWMC and Skagit County. 1995. Nookachamps Watershed Nonpoint Action Plan. Nookachamps Watershed Management Committee and Skagit County Department of Planning and Community Development, Mount Vernon, Washington. Approved by the Washington State Department of Ecology.
- PSAT. 2004. 2005–2007 Puget Sound Priorities. Public review draft, February 17, 2004. Puget Sound Action Team, Olympia, Washington. Obtained from organization website: http://www.psat.wa.gov/Publications/priorities_05/Priorities_05_review.pdf.
- SCPPC. 2003. Skagit County Comprehensive Plan. Skagit County Planning and Permit Center. Obtained June 27, 2006 from organization website: http://www.skagitcounty.net/Common/asp/default.asp?d=PlanningAndPermit&c=General&p=comp_toc.htm.
- SCS. 1989. Soil Survey of Skagit County Area, Washington. U.S. Department of Agriculture, Soil Conservation Service, in cooperation with Washington State Department of Natural Resources and Washington State University, Agriculture Research Center. Government Printing Office, Washington, D.C.
- WDFW. 2000. Fish Protection Screen Guidelines for Washington State. Washington Department of Fish and Wildlife, Olympia, Washington. April 25, 2000. Obtained May 1, 2004, from agency website: <http://wdfw.wa.gov/hab/ahg/screen51.pdf>.

APPENDIX A

Letter to Deputy Director Skagit County Planning and Development

Brent Carson

January 18, 2007

VIA EMAIL & FIRST-CLASS MAIL

Mr. Oscar Graham
Deputy Director
Skagit County Planning & Development Services
1800 Continental Place
Mount Vernon, WA 98273-3877

Re: Clear Valley Environmental Bank

Dear Mr. Graham:

As you know, I represent Clear Valley Environmental Farm LLC (Clear Valley). I have been asked by Clear Valley to write to you to explain why the Shoreline Substantial Development Permit (SSDP) submitted by Clear Valley should be considered and processed by Skagit County under the policies and regulations for dredging and stream shoreline stabilization and flood protection as set forth in the County's Shoreline Master Program (SMP), Sections 7.04 and 7.16.

The Shoreline Management Act Must be Applied to the Methods Proposed by an Applicant, not to an Applicant's Goals.

The Washington State Supreme Court has confirmed in multiple cases that when applying the Shoreline Management Act (SMA), RCW Chp. 90.58, to a particular proposal, it is the method proposed to be used by the applicant, not the goal of the applicant, which governs. *English Bay Enterprises, Ltd. v. Island County*, 89 Wn.2d 16, 20 (1977). In *English Bay*, a clam harvester using a hydraulic dredge argued that it did not require a SSDP because clam harvesting was not listed within the definition of "development." The Court concluded that the activity proposed by the applicant involved the removal of earth from the bottom of the bay, which was "dredging." Even though the goal of the activity was clam harvesting, and clam harvesting was not listed as a particular use or development, the Court confirmed that the applicant was required to obtain a SSDP and comply with the dredging standards adopted in the Island County's Shoreline Master Program.

Similarly, as you are aware, in *Clam Shacks of America, Inc. v. Skagit County*, 109 Wn.2d 91 (1987), a clam harvester had proposed to use a hydraulic clam rake in tidelands and argued that because its use was not called out as "development" a shoreline permit was not required. While the Supreme Court agreed that the proposed use was not listed as "development," the Court concluded that this proposed activity was identified as a "use" in the County's SMP and was properly regulated by the County under the aquaculture use category. The Court cited

with favor to its prior *English Bay* decision noting that application of the SMA must always focus on the actual activities proposed, not on the ultimate goal of those activities. As an analogy, the Court noted that a jurisdiction could regulate installation of a fishing dock under the SMA based upon the activity of building the dock, not on the ultimate goal of fishing: "if fishing were the goal, building a dock to enhance fishing might constitute a development, while fishing from the bank would not, even though the goal is the same." *Id.* at 97.

From these Supreme Court decisions, it is clear that the County must review Clear Valley's application based upon the development activities proposed by Clear Valley, not based upon the ultimate goal of those activities. As described in more detail below, the specific development activities proposed by Clear Valley in its SSDP application fall within the uses described in the County's SMP as "dredging" and "stream shoreline stabilization and flood protection." The fact that the ultimate goal of these activities is to establish a wetland mitigation bank is irrelevant to the use policies and regulations which must be applied to this application and which must be met by Clear Valley.

It would be improper for the County to require a Shoreline Conditional Use Permit for the activities proposed by Clear Valley because wetland mitigation banking is not identified as a proposed use. We recognize that a Shoreline Conditional Use Permit may be issued by the County for a use that has not been otherwise identified in the County's SMP. While a wetland mitigation bank is not a named use in the SMP, the wetland mitigation bank is not the method or activity for which a shoreline permit is being sought. Under clear Supreme Court rulings, Skagit County must apply its shoreline master program to the methods used by Clear Valley to achieve its ultimate goal. As demonstrated below, those methods involve dredging and flood protection work, which have been identified as specific uses in the County's master program and for which specific policies and regulations are been adopted.

The Activities Proposed by Clear Valley are "Dredging" and "Stream Shoreline Stabilization and Flood Protection" as defined by the County's SMP

The SSDP application provides a clear description of the activities proposed to be implemented by Clear Valley in order to achieve its ultimate goal of establishing a wetland mitigation bank. These activities are:

- Filling ditches and constructing engineered log jams in Nookachamps Creek and East Fork Nookachamps Creek;
- Constructing high-flow back channels off Nookachamps Creek and East Fork Nookachamps Creek;
- Excavating soils to reduce the elevation of the site

A comparison of these activities with the 18 specific categories of activities regulated by the County in Chapter 7 of its SMP, demonstrates that these activities fall squarely within the Dredging category (Section 7.04) and the Stream Shoreline Stabilization and Flood Protection category (Section 7.16).

The SMP defines "Dredging" as:

the removal or displacement of earth such as gravel, sand, mud, or silt and/or other materials or debris from any stream, river, lake, or marine water body and associated shorelines and wetlands.

SCC Chapter 14.26, Section 3.03. One of the methods proposed by Clear Valley to reestablish, rehabilitate and enhance wetlands on the property is to construct approximately 1.8 miles of new channels and to excavate areas of the property to lower the site elevation to a point where the hydrologic conditions will support wetland vegetation. These activities fit squarely within the definition of dredging.

The SMP defines "Shoreline stabilization" activities to include:

river and streamway modifications designed to stabilize eroding or erosion prone stream banks, protecting the adjacent property and existing developments. These modifications commonly occur in the form of riprap, revetments, and other structural stream bank defense works.

and also defines "Flood control works and flood protection" as:

all structures and works on streams designed to retard bank erosion, reduce flooding of adjacent lands, to control or divert stream flow, or to create reservoir, including but not limited to revetments, dikes, levees, channelization, dams, vegetative stabilization, weirs, flood and tidal gates. Excluded are water pump apparatus. Flood protection includes the above structural devices but may also include various techniques of floodplain, river basin, and watershed management which may be applied in lieu of or complementary to structural measures.

Id. Clear Valley proposes to fill ditches and construct engineered log jams in creeks within the property to flood greater portions of the property and thereby restore these stream reaches and reestablish riparian habitat. These activities, which will divert stream flows, fall squarely within the definition of "flood control works and flood protection" and should be regulated under Section 7.16.

Clear Valley's consultant, Herrera, has produced a compliance narrative demonstrating how the proposed project complies with the standards for issuance of a shoreline substantial development permit under either Section 7.04 or Section 7.16 of the County SMP. We look forward to your processing the shoreline permit for this proposal.

Very truly yours,



Brent Carson

BC:BC

cc: Betsy Stevenson
Jerome Ryan
Jake Hodge
Dan Weiss

