

PROJECT UPDATE AND STATUS REPORT

Clear Valley Environmental Farm

Prepared by

Clear Valley Environmental Farm, LLC
and
Clear Valley Environmental Farm II, Inc.

November 29, 2007

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Executive Summary

On June 27, 2006, Clear Valley Environmental Farms, LLC, and Clear Valley Environmental Farms II, Inc. (“Clear Valley”), applied to Skagit County for a Grading Permit for wetland restoration activities. Since then, Clear Valley has responded to questions and comments from the County and the public, applied for additional permits and approvals, and produced additional information and documents to support this project.

In order to assist the County in its review of this proposal, Clear Valley has prepared this Project Update and Status Report. This Report is intended to summarize and assemble the latest information and appropriate cross references into one document. This Report does not substitute for review of all information previously submitted, but should help those reviewing the project to better understand its status and its relationship to Federal and Washington State permitting.

Clear Valley is restoring wetlands (sometimes referred to as the Restoration site) on about 396 acres of land in central Skagit County within the lower Skagit River watershed. Throughout its natural history, the land upon which the wetlands will be restored has been a mix forested and shrub wetlands. Based upon available information, it was only drained and converted to dairy farmland sometime within the last 50 years (some of it perhaps as late as the 1970’s), and has been maintained as farmland or pasture—with a good deal of effort—since that time. “Prime” farmland soils, as that term is generally used, do not occur within the Restoration site. This wetlands site was selected in part because the land is only marginally productive—water in or on the soil interferes with plant growth or cultivation, and with the pasturing of animals. This makes it difficult to farm the wetlands site and makes the land generally undesirable for agricultural conservation or protection.

The original purchase of the property by Clear Valley included approximately 805 acres. Since acquiring the 805 acres, Clear Valley has conveyed various parcels and continues to negotiate on further transactions unrelated to this project. These transactions are further explained in Section 1 below. The Restoration site consists of only 396 acres.

Restoration of the wetlands will have a number of benefits for Skagit County, and provide significant, long-term benefits to the plant and animal environments of the County. The restoration will improve environmental conditions by improving, and connecting important habitat in the immediate area. The restoration will improve habitat by increasing the quality and diversity of aquatic and riparian habitat; by improving water quality; by improving hydrologic and other floodplain processes; by reducing sediment runoff into the creeks; by lowering water temperatures in the summer over the long term of the development; and by providing rearing, refuge, and migration habitat for fish, amphibians, reptiles, and other aquatic dependent species.

Clear Valley will restore these wetlands in three phases, by making a number of physical changes. The restoration will return Mud Creek and two forks of Nookachamps Creek to their original pre-agricultural disturbance condition, fill drainage ditches, return the contour of the land to its original grade, and plant native grasses, shrubs and forest, all over a six year period.

In Phase I, Clear Valley will restore the wetland and floodplain hydrology to the majority of the Restoration site by filling all of the drainage ditches on the wetland site and constructing three engineered logjams (ELJs) in Nookachamps Creek and the East Fork of Nookachamps Creek. Phase II will include constructing four high-flow back channels off Nookachamps Creek and the East Fork of Nookachamps Creek, re-grading the Restoration site, and planting native vegetation across the site. Phase III will involve the obliteration of temporary access roads throughout the Restoration site and converting them to a mix of forested wetland and upland habitats. Phase III also acts as a final check on the sites hydrologic regime in which sections of the Restoration site which do not meet the required hydrology specified in the project plans will be re-graded and planted with native vegetation.

Clear Valley is required to obtain a number of permits and approvals in order to restore the wetlands. To date, Clear Valley has applied to Skagit County for a Grading Permit, a Shoreline Substantial Development Permit, a Shoreline Conditional Use Permit, and a threshold determination under the State Environmental Policy Act. Currently, Clear Valley is awaiting responses to those applications so that it can begin the restoration process.

Clear Valley has applied for a permit under Section 404 of the Federal Clean Water Act and will apply for a permit under Section 401 of the Clean Water Act to fulfill Washington State water quality certification requirements. Clear Valley also has complied with the National Historic Preservation Act, all regulatory requirements of the Washington State Department of Fish and Wildlife and the requirements of the Federal Endangered Species Act.

Clear Valley has applied to the Federal and Washington State authorities to certify the restoration as a wetland mitigation bank (the Bank) under Federal and State law. Wetland mitigation banking is recognized by the County, State and Federal governments as an important tool in providing compensation for unavoidable impacts to wetlands.

The certification process, outlined in detail in Section 5 of this Project Update and Status Report, will allow Clear Valley to earn “credits” (Credits) for restoration that it can market to those who need to mitigate or compensate impacts to wetlands near the Restoration site. The process, initially developed by the U. S. Army Corps of Engineers (the Corps), the U.S. Environmental Protection Agency (the EPA), and other regulatory agencies, and subsequently enacted into law in Washington State in 1998, allows for review and certification of mitigation banks by a “Mitigation Bank Review Team” (MBRT), made up of representatives from the Corps, the EPA, and other Federal, State, and local agencies and governments.

Washington’s Wetlands Mitigation Banking Act (the State Act), and proposed rules (the State Proposed Rule) promulgated by the Washington State Department of Ecology (Ecology) to carry out the State Act, set out a detailed process for the composition of the MBRT, planning, application, review, public comment, approval, monitoring, financial assurances and other matters relating to the formation, construction and operation of a wetland mitigation bank, and for the sale of Credits.

The plans for restoration of the site have been approved by the MBRT, subject to several small changes. The “mitigation banking instrument” (the MBI) is being drafted.

Clear Valley and the MBRT are in the final stages of determining the number of Credits that will be available to the Bank, the Service Area (capitalized terms used here and not defined are defined in Section 5 of this Project Update and Status Report) within which the Clear Valley can sell Credits and the Financial Assurances that Clear Valley must provide to assure the development and sustainability of the Restoration site and the Bank. Clear Valley has selected a long term steward for the Bank and is prepared to establish a conservation easement over the land that will be restored.

Clear Valley also intends to incorporate a commercial native seed and plant harvesting and cutting operation into its planned Restoration site that will take advantage of and be fully compatible with the restored wetlands environment and the Bank. As proposed, the sustainable harvest of seeds and cuttings within the Restoration site is consistent with the agricultural uses and policies set forth in the Skagit County Shoreline Management Master Program (SMMP) and the County’s Comprehensive Plan. This operation will cover most if not all of the Restoration site; its addition to the project further ensures that the restoration will result in no net negative impact on agricultural lands in Skagit County because it results in a change of the type of agricultural use of the Restoration site, not a removal of lands from agricultural production.

The harvesting of native seeds and selective cutting of native plants will operate as an alternative agricultural enterprise on the Restoration site. The effect of the adoption of the native seed and plant plan—an alternative agricultural enterprise—is that the wetland restoration results in no removal of land from agricultural production. In fact, the Restoration site will result in an increase of approximately 80 acres of land in agricultural production under the seed and plant plan.

Skagit County, as the local jurisdiction, has been and will continue to be involved in the wetlands restoration and mitigation banking process in at least three ways. First, physical restoration of the Restoration site involves construction that requires construction permitting, review under the County Shoreline Program, SEPA review, and other County permits or approvals. Second, the State Act and the State Proposed Rule involve the local jurisdiction in the State wetland mitigation bank certification process. The State Act and the State Proposed Rule provide that the local jurisdiction may co-chair the MBRT, or otherwise be an MBRT member, and that it must sign the Banking Instrument. Third, the Skagit County Code requires compensatory mitigation for the destruction of wetlands, separate from the requirements of Federal and Washington State law.

The balance of this Project Update and Status Report discusses (1) the history of the Restoration site, and the uses of surrounding land owned or formerly owned by Clear Valley; (2) the environmental goals and benefits of the wetlands restoration; (3) the physical plans for restoring the Restoration site to its original wetland condition; (4) the County permits and approvals for which Clear Valley has applied; (5) the mitigation banking process under Federal, State and Skagit County law, and where Clear Valley is in that process; (6) the native seed and plant farm;

and (7) a summary of the impact of the wetland restoration, including the native seed and plant farm, on agriculture.

The Property

Location

Clear Valley will restore wetland and upland habitats on a Restoration site made up of about 396 acres of land in Skagit County north of College Way and just east of the Mount Vernon city limit. The Restoration site is 1.5 miles northeast of the Mount Vernon urban center. (See Attachment A).

The City of Mount Vernon surrounds the Restoration site on three sides (northwest, west, and southeast). This part of Mount Vernon is developed and/or zoned for commercial and residential development. The Mud Lake housing community development is located less than one-half mile to the northeast. The land to the north and southeast is zoned for agricultural use or as rural reserve. College Way, or State Highway 9, is just to the south of the Restoration site and State Highway 538 is to the east of the Restoration site. Most future land development in the Nookachamps watershed is expected to take place along these corridors.

The Restoration site is located at elevations from approximately 20 feet above sea level to 100 feet above sea level. Most of the Restoration site is located within the 100-year flood plain of the main stem of Nookachamps Creek and the East Fork of Nookachamps Creek. Both creeks flow into the Skagit River and are reaches of the Lower Skagit watershed.

History of the Property

An understanding of the history of the use of the Restoration site is important to an understanding of the project.

Throughout its natural history, the land upon which the wetlands will be restored has been wetlands. Prior to Euro-American settlement, the lower floodplain of the Nookachamps Creek was covered with a mature riparian forest. Barney Lake to the northwest of the Restoration site, and the floodplain at the southern portion of the Restoration site, adjacent to the site, are all that remain of a once extensive wetland forest.

A 1941 National Resource Conservation Service aerial photograph and soil survey is attached as Attachment B. It shows that most of the Restoration site was emergent, scrub-shrub, or forested wetland habitat. The tree pattern suggests that a mix of deciduous and evergreen trees were in the floodplain.

Around 1900, settlers began clearing the land around the Restoration site of all riparian and wetland forest habitat and turned the land into farmland. However, a good deal of the Restoration site itself was still natural wetland at least until 1941. This was because the land was

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too wet to practically farm. From what Clear Valley has been able to learn, most of the Restoration site was forested and other wetland until the late 1960's. At about that time, Clear Valley has been told, the owners of the Restoration site (the construction company of Christopherson & Stakkeland) logged the land, straightened and channelized the creeks on the Restoration site (the two forks of Nookachamps Creek and Mud Lake Creek), and graded the property to remove high and low spots and to drain it. The contractors also put in over 1.2 miles of ditches, some of them 15 feet deep, to drain the Restoration site of surface and sub-surface water. The effect was to change the hydrology of the majority of the Restoration site and drain the wetland.

In the course of this “development,” the contractors destroyed the native vegetation on the Restoration site. Farmers have maintained some or all of the Restoration site as farmland or pasture, mostly free of native vegetation, since that time.

Hydrology

Site hydrology is guided mainly by three processes: (1) precipitation and subsequent ponding of water, (2) shallow ground-water fluctuation, and (3) streambank overtopping. Streambank overtopping is the result of two types of flooding regimes. The most significant of the two occurs when water in the Skagit River backs up and floods the area and adjacent properties. This occurs at least once annually, where inundation depths range from one to five feet throughout the site. The other type of flooding regime occurs when the Skagit River is at low flow and Mud Creek, East Fork Nookachamps Creek, and Nookachamps Creek are flowing at higher rates due to summer thunderstorms (or monsoonal late summer/early fall storms), resulting in localized flooding on the project site and adjacent properties.

Farmland Soils

“Prime” farmland soils, as that term is generally used, do not occur within the Restoration site. This site was selected for restoration in part because the land is only marginally productive and wetland conditions tend to occur on it naturally, despite human efforts to change the character of the site. 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.

The soils on the Restoration site are classed by the NRCS as either Class 4w soils, which have “very severe limitations” that restrict the choice of plants or that require very careful management, or both; or as Class 6w soils, which “have severe limitations that make them generally unsuitable for cultivation.” (See Attachment C).

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The “w” subclass shows that water in or on the soil interferes with plant growth or cultivation. This makes it difficult to farm the Restoration site and makes the land generally undesirable for agricultural conservation or protection. The subclass is also a reflection that most of the Restoration site was historically a wetland.

Purchase, Sale and Future Use of Restoration Site and Surrounding Areas

This section updates the facts relating to ownership and disposition of the former “Clear Valley Farm” by Clear Valley. The text is supported by the two Figures attached hereto as Attachment D. Figure 1 shows the property still owned by Clear Valley as of November 23, 2007. Figure 2 shows the disposition of portions of the Farm to date, and the intended sales and uses of the portions of the property that Clear Valley still owns. The text is also supported by a table, attached hereto as Attachment E, setting out the calculations of acreage in columns, for ease of reference.

All acreages used in this Section and in the figures are approximate. The calculations in the text and in Table 1 do not balance. This is for at least two reasons. First, some of these acreages have come from surveys, done by different surveyors, using different base points. This has resulted in inconsistent numbers. Second, the rest of the measurements (those that have not been the results of surveys) have been made from GIS maps, and are subject to a margin of error. These facts account for the discrepancy in the calculations. A survey of the property, giving accurate figures, will be done as, if and when necessary.

While the following information has been requested by Skagit County to provide clarity to the ownership data, the information has no bearing on Clear Valley’s County applications themselves. The applications to the County are for permits and approvals relating to the restoration of some 396 acres of wetlands. Those applications are applicable to the identified 396 acres and are not affected by the uses of the surrounding property, some of which Clear Valley no longer, or in the near future will no longer, own. The property referred to in this Report, other than the 396 acre wetland restoration, is not part of Clear Valley’s Restoration or Bank project.

The “sources and uses” of the Clear Valley Farm are as follows. (The references to sales are not all in chronological order.)

Clear Valley purchased the “Clear Valley Farm” in March of 2006. The original purchase agreement included about 805 acres.

Before the purchase, Clear Valley did a boundary line adjustment to take 4.2 acres out of the “Clear Valley Farm” property and add it to an adjacent parcel owned by Loren Korthuis, the farmer from whom Clear Valley bought the farm. This is called the “Korthuis Property” in Figure 2. This left Clear Valley with about 800.8 acres.

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Clear Valley has sold 90.8 acres. This is called the “Knoll Property” in Figure 2. This left Clear Valley with 726 acres. The purchase and sale agreement for the sale of the Knoll Property gives Clear Valley the right to reacquire 8 acres of the Knoll Property. Those 8 acres are called the “Knoll Apron Property” in Figure 2.

Clear Valley has sold a house and 1 acre of the property. This is called the “Middle House Property” in Figure 2. This left Clear Valley with 725 acres of property.

Clear Valley has sold a second house and about 8.6 acres. This is called the “Railroad House Property” in Figure 2. This left Clear Valley with 716.4 acres of property.

Clear Valley has sold a third house and 20.2 acres. That property is called the “Blue House Property” in Figure 2. Clear Valley reserved the right to use about 16 acres of that property as wetland or buffer property. This left Clear Valley with 696.2 acres of property.

As of November 20, 2007, Clear Valley owns 696.2 acres.

Clear Valley intends to sell an additional 42.7 acres of property with a house and a barn on it in the next several months. This property is called the “Red Barn Property” in Figure 2. Clear Valley will reserve the right to use the southern “panhandle” of the Red Barn Property, which is about 1 acre, as wetland or buffer property. After that sale, Clear Valley would own 653.5 acres.

Clear Valley is in discussions with the Skagit Land Trust for the sale of a projected 222 acres of the property to the Trust. This property is called the “Possible Skagit Land Trust Property” in Figure 2. If it sold 222 acres to the Skagit Land Trust, Clear Valley would own 431.5 acres.

Thirty three acres of the property do not have a readily apparent use at this time. This property is called the “33 Acre Property” in Figure 2. The Applicant is considering all possible permitted uses of the 33 Acre Property but has made no decisions regarding its sale or use. Deducting these 33 acres, the Applicant is left with 398.5 acres. (As stated above, the acreages figures used in this statement are estimates; this accounts for the imbalance in these calculations.)

The Applicant plans to restore to wetland, or use as buffer, 396 acres. The 396 acres are referred to as the “Skagit Environmental Bank” in Figure 2.

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Environmental Benefits of the Wetland Restoration

The restoration of 396 acres of wetland and riparian habitat will provide numerous benefits to the Skagit River watershed floodplain ecosystem (Mitsch and Gosselink 2000, Stevens and Vanbianchi 1993):

- Improving water quality and floodplain hydrology through sediment retention, stormwater and floodwater filtration and attenuation, stream flow maintenance, reducing stream width-to-depth ratios, and aquifer recharge.
- Reducing erosion through streambank stabilization and reduction of unvegetated landscapes
- Increasing habitat for wildlife, including ESA-listed fish species, by adding 396 acres to the Skagit River watershed's palustrine wetland network, in addition to reducing habitat fragmentation and increasing patch size by creating contiguity with other high quality sites (i.e. Barney Lake)
- Improving conditions for fish and other aquatic species by moderating stream temperatures, increasing dissolved oxygen content of streams, increasing prey habitat and refugia, and increasing the amount of available large woody debris (LWD)
- Reintroducing natural wetland nutrient cycling dominated by high levels of plant productivity and detrital retention, often resulting in nutrient sequestration.

This project will also improve habitat for the Marbled Murrelet, the Spotted Owl, and many other non-listed fish and wildlife species. It will provide additional winter roosting refuge habitat for ducks, trumpeter swans, Wrangel Island snow geese, and Canada geese. It will enhance the existing eagle habitat with increased fishing opportunities and forest cover privacy. These activities will also improve local and regional wildlife habitat connectivity by connecting the SEB site and its stream corridor with 614 acres of associated wetlands and 9.1 miles of stream corridor, to form a total connected area of 925 acres of wetland and 11.1 miles of stream corridor. This will add a major feeding and resting stopover opportunity for migrating fish and birds utilizing a network including ten other significant waters of the State near the project site.

Clear Valley has also removed the dairy farm that was on the property, an action which may have the effect of reducing nutrient, suspended sediment, and fecal coliform input to streams. While this statement has not been substantiated through testing, the presence of cattle in stream corridors has been shown to be a significant source of the aforementioned contaminants in palustrine systems (Kauffman and Krueger 1984).

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Construction of the Wetlands

Introduction

This site will be restored in three phases.

As one might expect, the first phase deals with hydrology or water; that is, how to make the land “wet” again. Creek channels on the Restoration site now lack hydraulic complexity. The relatively recent conversion of the Restoration site to farmland disconnected the site from the Nookachamps floodplain. For that reason, one of Clear Valley’s primary restoration objectives is to minimize onsite drainage by the filling in of drainage ditches and to increase the bed elevation of the existing forks of the Nookachamps through the construction of three ELJs, or engineered log jams. This will reconnect the floodplain and sustain wetland habitats.

Clear Valley’s objective is to restore the reaches of the main stem of Nookachamps Creek, the East Fork of Nookachamps Creek, and Mud Lake Creek and the associated floodplain wetlands that were destroyed when the land was converted from wetlands to agricultural lands. In scientific terms, the restoration project will also restore riverine hydrologic processes, high-flow back channel habitat, and associated palustrine emergent, scrub-shrub, and forested wetlands on the Restoration site.

Agricultural surface drainage improvements are designed to minimize crop damage resulting from ponded water. This type of drainage improvement includes land leveling and smoothing and the construction of ditches that often drain to natural waterways. Although surface drainage improvements are designed to remove surface water, ditches that intersect a shallow groundwater table can lower local groundwater levels as well. In addition, in order to facilitate improved drainage of lands, some sections of the creeks onsite have been straightened and bermed, which has increased in-stream water velocities and discouraged seasonal flooding. These increased velocities have resulted in lowered stream bed elevations (specifically in the East Fork of the Nookachamps) due to bed scour. This has led to a steady lowering of the groundwater table adjacent to the stream and has encouraged severe bank erosion.

In order to mitigate for these past land use practices, backfilling the drainage ditches and disconnecting them from Nookachamps Creek will raise groundwater levels and restore floodplain hydrologic conditions in this area of the Restoration site. Furthermore, a total of three ELJs, one in Nookachamps Creek and two in the East Fork of Nookachamps Creek will be constructed to create backwater conditions during high flows in the Nookachamps system. These backwater conditions will cause stream bed material to fall out behind these structures raising the stream bed elevations to the height of the ELJs. The new stream bed elevation in addition to berm removal will reconnect the streams to their floodplain, thereby providing the necessary hydrology to support wetland conditions.

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The key to the success of this restoration project will be the management of the new hydrologic regime. After the filling of ditches and construction of the ELJs, Clear Valley will use creek flow and ground water elevation data (from wells and stream gauges) to determine the most appropriate elevations for the design of the various hydrologic conditions. Clear Valley will identify the excavation elevations according to the ground water elevations during the first 30 to 60 days of the growing season or a date in late April. The high-flow back channel areas, for example, will be excavated to an elevation defined by the ground water elevations and the creek fluctuation data and will likely be connected to Nookachamps Creek and the East Fork of Nookachamps Creek during the first few months of the growing season. This will provide at a minimum “seasonally inundated or saturated” conditions. During the non-growing wet season, the back channels will be permanently flooded and provide fish and waterfowl habitat. Clear Valley will grade the ground surface to drain towards the river systems, which will prevent any ponding of water or stranding of fish.

In Phase II, Clear Valley will grade the Restoration site surface areas to the target elevations, relative to ground water elevations that are similar to those in the reference area for a particular vegetation class. For example, forested communities in the immediate area thrive on a specific range of near surface ground-water fluctuation. Clear Valley will replicate the difference between the ground water and the soil surface elevation under the reference forest, by grading surface elevations in the plowed Restoration site areas to match those in the forest.

Clear Valley will develop and carry out a simple planting scheme; Clear Valley wants to recognize the principles of plant succession while also providing diversity and structure. Clear Valley selected plants based on research conducted within the Skagit watershed. To develop the plant list, Clear Valley used (1) the examples set by, and the experience of existing and proposed restorations in the area; (2) rare plant communities and wetland ecosystems (Washington Natural Heritage Program); and (3) two documents that researched the historical plant materials and communities present in the 1800’s. The first is Collins, B. D., and Sheikh, A. J. 2003; Historical Aquatic Habitat in River Valleys and Estuaries of the Nooksack, Skagit, Stillaguamish, and Snohomish Watersheds, May 1, 2003 Report to Northwest Fisheries Science Center, National Marine Fisheries Service. The second is the mid-19th century stream channels and wetlands interpretation from archival sources for three north Puget Sound estuaries, Report Prepared for: Skagit System Cooperative. August 1, 2000.

The Restoration site will be surrounded by a buffer area of 150 feet around all of its borders.

Phase III will be focused on making any minor adjustments to grade or vegetation communities to make certain that success standard will be met. If success standards are met, then the temporary access roads will be re-graded and converted into a wetland forest mosaic and then planted. This plan is based on restoring functions on the entire Restoration site, waiting to see how these changes affect the site, and then moving forward with the next functional modifications based on this real data. In summary the following is a detailed description of each phase.

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At the completion of all three phases, physical, chemical, and biological functional improvement will come from three sets of activities that Clear Valley will complete on the Restoration site:

1. The restoration of the creek and floodplain geomorphic processes,
2. The addition of off channel rearing and refuge habitat,
3. The restoration of the emergent, forested, and scrub-shrub wetland habitats.

Phase I

In Phase I, Clear Valley will restore the wetland and floodplain hydrology to the majority of the Restoration site by filling all of the drainage ditches on the Restoration site and constructing three engineered logjams (ELJs) in Nookachamps Creek and the East Fork of Nookachamps Creek. (See Attachment F). The objective of Phase I is to restore the floodplain hydrology associated with these streams, resulting in restored wetland hydrology conditions. Backfilling the drainage ditches and disconnecting them from the Nookachamps system is expected to raise local ground water levels within the boundary of the project site. No backfilling will occur within the Mud Creek drainage. The installation of three ELJs will increase the frequency of localized onsite flooding, which is a common attribute of a healthy functioning floodplain. Backfill material will come from the excavation associated with the ELJ construction and from the earthen berms adjacent to the drainage ditches. These berms are composed of the spoils resulting from the excavation and maintenance of the drainage ditches. Construction will occur within a 75-day construction window during which fish are least likely to be present (June 15 to August 31). The project is designed with the intention that activities will result in a reduction in the amount of required material excavation to establish appropriate ground water elevations within the project site in Phase II and III. Grading quantities for the Phase I activities are provided in Attachment G.

The wetland fill impacts associated with Phase I are considered temporary because these areas will be re-excavated and greatly expanded during the grading activities in Phase II. The excavation and fill impacts associated with Nookachamps Creek and the East Fork of Nookachamps Creek are considered temporary because the channel area will not be changed.

These actions will significantly change the hydrology and improve the fish and wildlife habitat. Clear Valley knows from the well data collected that the ditches are functioning to drain or lower the ground water levels in certain areas of the Restoration site. Clear Valley also knows from experience on other projects that placement of the ELJs will raise the average stream levels and the surrounding ground water levels.

Based on experience, Clear Valley plans that as a result of these modifications it will have restored wetland hydrologic conditions (saturation within a foot of the surface for more than 12

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days) to more than eighty percent of the site. About twenty percent of the Restoration site will still not be restored to hydrologic conditions. These areas are higher because in the past farmers graded the fields for drainage purposes and pushed the extra fill to the edges of the fields, thereby creating these higher bermed areas. For that reason, Clear Valley will have to excavate in order to bring the remaining surface down to the target hydrologic conditions near the ground water table. That will be done in Phases II.

The actual changes in hydrology will be measured during the year after Clear Valley completes the Phase I construction. Based on the new stream and groundwater elevations of the site in the beginning of the growing season, the site hydrologic model will be updated showing what is believed to be a more accurate estimate of the area of restored wetland hydrology. This will give Clear Valley an estimate of the area it expects to be hydrologically restored solely through completion of the ELJ and ditch modifications. A revised grading plan will be prepared and submitted to the applicable regulatory agencies for review and approval prior to Phase II activities.

Phase II

Phase II will include constructing four high-flow back channels off Nookachamps Creek and the East Fork of Nookachamps Creek, re-grading the site, and planting native vegetation across the project site (See Attachment H).

The activities that will occur during Phase II are as follows:

- Each of the three new high-flow back channels will be approximately 1,400 to 3,800 feet long and approximately 75 feet wide except for the area associated with one particular wetland. 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 in identified stockpile areas on the site.
- Water will be introduced to the channels slowly, and turbid water will be pumped to upland sedimentation/infiltration areas before the establishment of connectivity between the high-flow channels and the existing stream channels.
- Silt booms and turbidity monitoring stations will be in place downstream of the work areas when flows are introduced into the new channels.

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- In graded 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.

The total quantity of material excavated during Phase II activities will be 1,025,440 cubic yards, approximately 400,000 cubic yards less than the amount stated in the original grading permit. The quantities of fill material needed on the Restoration site are estimated to total 289,900 cubic yards. These quantities are considered conservative. The estimated quantities are expected to be reduced after the Phase I activities have been completed and the results of the surface water and groundwater monitoring have been evaluated. Areas that will be filled include the access road alignment, the water line easement, and designated upland areas. Three soil stockpile areas have also been located on the Restoration site, which will decrease the distance over which the fill material will need to be transported. (See Attachment I). But, more importantly, the stockpile areas will provide flood refuge habitat for wildlife during backwater events on the Skagit River. The remainder of the excavated material (704,810 cubic yards) will be placed above the 100-year floodplain in an area that is outside the boundary of the Restoration site but within the boundary of property owned or controlled by Clear Valley. This excess material will also be available for local construction projects that require fill material. One of the stockpiles identified can accommodate up to 1.2 million cubic yards; however, roughly half of its storage capacity will be needed. The removal of material outside the floodplain will increase the floodwater storage capacity of the Restoration site.

Phase III

Phase III will be to excavate (down to the appropriate hydrologic conditions) the remaining 3 percent, or approximately 10 acres, of the Restoration Site. This will transform the temporary access roads created in Phase II into a forested wetland mosaic. The purpose of the temporary access roads is to provide access throughout the site for monitoring and maintenance purposes. This mosaic pattern described above will roughly consist of 80 percent forested wetland and 20 percent upland. This broken pattern of varied landforms will increase the habitat and wildlife use opportunities significantly—more than if they were restored solely to wetland. These areas will be revegetated with native plants and left to evolve on their own.

Certain sections of the site not meeting expected hydrology will be re-graded, but the extent is anticipated to be small since we will monitoring hydrology following Phase I activities. The previous grading plan was based on a hydraulic model developed specifically for the Nookachamps system. Collecting hydrologic data after the construction of ELJs and the filling of ditches will allow us the recalibrate the hydraulic model and more accurately predict groundwater elevations throughout the Restoration Site. This update of the hydraulic model will be followed by a revision of the site grading plans as mentioned in Phase II.

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Hydraulic and Hydrologic Assessment

Hydraulic and hydrologic conditions on and adjacent to the project site were evaluated in *Hydrologic and Hydraulic basis of Design Report* (Herrera 2006) and an updated HEC-RAS hydraulic model is provided in Responses D-12 through D-15 in the *Skagit Environmental Bank Response to Skagit County and Public Comments* (Clear Valley Environmental, LLC (2007). The Skagit County Surface Water Group and Department of Ecology concur with the findings of this analysis.

The construction of three engineered log jams (ELJs) will raise the stream elevation (also referred to as “backwater”) upstream of the structure (See Attachment J). This higher stream elevation will reconnect the stream to the Nookachamps floodplain helping to restore natural floodplain processes. This in turn will support the restoration of riparian wetlands and increase the amount of critical habitat for fish and wildlife.

The main purpose of this analysis was two fold, 1) predict elevations of stream and groundwater based on their size and location, and 2) ensure that this project will not result in any adverse flooding effects to adjacent properties outside of the Restoration Site.

Based on the analysis, ELJ 1 will not affect surface or groundwater hydrology on sections of Nookachamps Creek upstream of the Restoration Site. The backwater influence of ELJ 2 will result in a 1.1-foot increase in the water surface elevation on East Fork Nookachamps Creek in the vicinity of the east boundary of the Clear Valley Farm property. The result shows that the increased water surface elevations extend no farther than 3,372 feet upstream of the project site boundary under any flow conditions (See Attachment J). The magnitude of this increase at its furthest point is no more than 0.2 feet. That being said, this rise in water elevation at the boundary of the Restoration Site is not sufficient to cause groundwater recharge or flooding. In turn, there will be no adverse affect on the agricultural production of the adjacent upstream property (labeled Tim Purcell Property). Modeling results also have shown that the proposed project ELJs do not result in an increased occurrence of flooding during high-magnitude events and when the site is influenced by backwater in the Skagit River.

Extensive grading will occur throughout the site to create a series of high-flow back channels. It is anticipated that approximately 700,000 cubic yards of material will be placed outside of the 100-year floodplain and stockpiled outside of the Restoration Site, but within the boundary of the Clear Valley Farm. This will increase the flood storage capacity of the project site by 16 acre-feet. All areas within the site will positively drain to Nookachamps Creek system. Areas of Mud Creek within the Restoration Site will be re-graded to also facilitate flow to Nookachamps Creek resulting in no adverse impacts on groundwater or flooding on adjacent properties upstream of the site.

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Required County, State, and Federal Permits and Approvals

Clear Valley must obtain a number of permits and approvals in order to restore the Restoration site and to obtain certification as a wetland mitigation bank.

At the County level, Clear Valley applied for a Grading Permit, a Shoreline Substantial Development Permit, a Shoreline Conditional Use Permit, and for approval under the State Environmental Policy Act. The County requested and obtained public comment and issued its own comments, both in September of 2006. Clear Valley responded to those public and County comments in January of 2007. Clear Valley is now waiting for official response from the County to those applications.

Clear Valley has applied for a permit under Section 404 of the Federal Clean Water Act to fulfill Federal requirements. It will apply for a permit under Section 401 of the Clean Water Act to fulfill Washington State requirements. Clear Valley has done all things necessary to comply with the National Historic Preservation Act and has complied with all regulatory requirements of the Washington State Department of Fish and Wildlife. Clear Valley has satisfied the requirements of the Federal Endangered Species Act.

A biological assessment was prepared for the proposed project (Herrera 2005) in accordance with Section 7(c) of the Federal Endangered Species Act of 1973. The purpose of this assessment was to determine whether any protected species are present within the Restoration site and whether they or their habitats will be adversely affected by the restoration. In September 2006, a letter of concurrence was received from Ken S. Berg, manager of the Western Washington Fish and Wildlife Office of the U.S. Fish and Wildlife Service indicating that adequate actions will be used to protect listed species under the Endangered Species Act (Berg 2006). A similar letter was received from the Seattle District of the Corps in April 2006, concluding that this project may affect, but is not likely to adversely affect, Puget Sound chinook or its critical habitat (Walker 2006).

Consultation with the services was reinitiated in the Fall 2007 due to the recent listing of Puget Sound steelhead as an endangered species under the Endangered Species Act. The National Marine Fisheries Service concluded that “potential adverse effects are discountable or insignificant.” Therefore, they concur with the Corps’s “originally affect determination” (Lohn 2007).

The Federal and Washington State processes related to certification of the restoration project as a wetland mitigation bank under the Federal Clean Water Act and the State Wetland Banking regulations are discussed in the next section of this Project Update and Status Report.

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Use of the Restored Wetland as a Wetland Mitigation Bank

Clear Valley will make use of the restored wetland for two purposes. The first will be as a wetland mitigation bank under the applicable Federal and Washington State law and rules. The second will be to use the restored wetland for a native seed and plant farm or nursery as set forth in Section 6 of this document.

The rest of this subsection describes the wetland mitigation banking process under the applicable law, and the certification process in which Clear Valley is presently engaged.

The Wetland Mitigation Banking Process

Beginning in earnest in the 1970's, the scientific community and the Federal government became alarmed by the magnitude and the speed of destruction of wetlands in the United States. At that time, the Federal government began to consider what it could do to first stop, and then reverse, the destruction. Although the scientific establishment and government agree that wetlands are a necessary and irreplaceable part of the environment, this Report does not go into the benefits of wetlands and the danger created by their destruction.

The Beginning of the Federal Process: Section 404 Permitting

Congress amended the Federal Clean Water Act of 1986, 33 USC 1344 et seq. (the Federal Act), and the Corps and EPA adopted regulations and the *Federal Guidance for the Establishment, Use and Operation of Mitigation Banks* (U.S. ACE 1995, Section 4: Role of Preservation) (the Federal Guidance) to attempt to solve the problem created by the destruction of wetlands that were under Federal jurisdiction.

Under Section 404 of the Federal Act and the Federal Guidance, no person may “dredge or fill” any materials in “waters of the United States” without getting a permit to do so from the Corps. For obvious reasons, this permit is called a “Section 404 Permit.”

The term “waters of the United States” generally means “navigable waters” but for purposes of the Federal Act it has a much broader meaning. The term has been subject to a good deal of litigation lately, but for purposes of this Report “wetlands,” as that term is defined in the Federal Guidance, qualify as waters of the United States. The term “Dredging or filling in the waters of the United States” encompasses many activities impacting wetlands in the United States.

Under the Federal Act and the Federal Guidance, the Corps must require as a condition to the permit that the person doing the dredging or filling (the Permittee) mitigate or compensate for impacts to wetlands. The Permittee must restore, enhance, or create wetlands or preserve high-quality and likely to be destroyed wetlands, (i) in at least an equal amount, (ii) of the same

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ecological type, (iii) nearby, in the same ecological and geographic niche or “Service Area.” In other words, the mitigation cannot be very far away, either geographically, or in environmental impact, to the dredging or filling that is doing the damage to the wetland.

In many cases the amount of mitigation that the Corps requires exceeds the amount of damage done; this is to take into account the inherent risk that the Permittee mitigation may not be as successful as it is projected to be.

Expansion of Federal Law: Mitigation Banking As a Supplement to the Section 404 Permitting Process

The Federal Act and the Federal Guidance contemplated that the Section 404 Permittee would do the compensation or mitigation itself, on its own land or on nearby land. This practice is termed Permittee-Responsible Compensatory Mitigation, or “self-compensation.”

In practice, self-compensation by itself did not prove adequate for the job.

For reasons outlined below, often the law was not enforced. More significantly, when it was enforced, self-compensation historically had (and continues to have) a success rate of only about 50%. To use the scientific term, self-compensated projects were not “sustainable.”

This was for a number of reasons. The only recourse available to a Section 404 Permittee was to find another piece of property nearby and then to plan and carry out its own mitigation. This made self-compensation a delaying, costly and time consuming process. It slowed development and added disproportionately to cost. The Corps allowed the impact and the mitigation to go on at about the same time. Therefore, there was no way to determine in advance if the mitigation would actually work. The damage to a wetland might be done but the compensatory mitigation would prove unsuccessful over time. Even then, the damage might be done in year one, and the mitigation would not begin to be effective until years later when it had had a chance to mature. Perhaps most importantly, the mitigation was of small tracts of land that were below the critical mass necessary to be effective. A Permittee damaging 5 acres might be required to mitigate 5 or 10 acres. Those replacement projects were so small and were often so amateurishly done that they did not survive in isolation.

In a small number of cases, the damage was done by the Corps itself, working on its own flood control and other projects on an “emergency” basis. Because of the problems and delays involved, the Corps often promised to do mitigation later but never got around to it.

Finally, the offices of the Corps responsible for Section 404 Permitting did not have the resources to properly monitor the process after it had begun. And since the development or damage was done at the same time that the mitigation was performed, the Corps could not stop the development and thus had no real teeth left in its enforcement process.

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In fact, the Federal Act and the Federal Guidance were seen to be so restrictive, and created so many constraints of time and money, for both the public and the private sectors, that often the Corps did not have the ability or the inclination to require enforcement. This constraint is still a serious problem, one that allows a significant amount of wetlands to be destroyed each year without recourse.

The Federal government was still dedicated to mitigation, and the need for mitigation continued to grow. The failure of self-compensation led the Corps, the EPA, and several other interested federal agencies, to rethink mitigation methods.

Under the administration of the first president Bush, and later under the Clinton administration, Congress, the Corps, the EPA, and other regulatory agencies developed a concept for “wetland mitigation banking.” The concept was borrowed from carbon trading and similar programs that seemed to be working at the Federal level and in other countries. The Clean Water Act and the Federal Guidance were amended in 1995 to bring third-party mitigators into the mitigation process, and to allow wetland mitigation “banking.”

On March 28, 2006, the current Bush administration published new proposed guidelines that further refine the process described below. Those proposed rules are now out for comment.

Under the new concept, this third party, the “Bank Sponsor,” can organize a “wetland mitigation bank” and restore a large tract of wetland prior to, and separate and apart from, any development or damage to a wetland. Since the Bank Sponsor is not damaging a wetland, but is only restoring one, the Bank Sponsor builds up “Credits” for doing so. In a closely scrutinized, supervised and choreographed process, outlined below, the Corps, the EPA and other regulators will “certify” or approve, the restoration in advance.

To summarize, the Corps, the EPA, and other Federal, state, and local agencies and governments that are interested in the project form a “Mitigation Bank Review Team” (the MBRT) to coordinate their combined efforts. That MBRT determines the feasibility of the project and then comments on and approves or disapproves the plan. It establishes stringent and far reaching and long term standards for construction, maintenance, performance and sustainability of the restoration, and then certifies the bank so that development can proceed. The bank is then constructed.

The plans for the bank, the credits to be approved, and the long term supervision of development and maintenance of the bank, and other terms, are reduced to a contract, binding on the government and on the Bank Sponsor. This contract is called the “mitigation banking instrument,” or the “MBI.”

How is the Bank Sponsor rewarded for doing the mitigation? As part of the approval process, the MBRT gives the Bank Sponsor the right to sell Credits to Section 404 Permittees, again under strict supervision by the Corps as to when, what type, and how many Credits can be sold. The Corps allows the Bank Sponsor to sell Credits only after the bank meets performance standards relating to ecological functions and other matters. The restored wetlands are put into

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land trusts or similar vehicles, and financial assurances are posted to insure the short and long-term sustainability of the restoration.

The Credits that a Permittee purchases have to be for restoring the same kind of wetland in the same small geographic and environmental area, or “Service Area,” in which the Permittee is impacting wetlands. But when all is said and done, a wetland has been restored to compensate for the one dredged or filled and the Permittee has not had to do its own mitigation. It has satisfied its mitigation requirement, in a better way, by purchasing Credits from the Bank Sponsor under the Corps’ supervision.

The wetland mitigation bank has a number of advantages over self-compensation. First, it brings the strength of the private sector into the effort. In effect, it allows Section 404 Permittees to do the business of development, and allows Bank Sponsors, specialists in the business of mitigation, to do the mitigation. Second, it allows for development of large tracts of wetland on the best property for the purpose, replacing the postage stamp projects of self-compensation with areas large enough and suitable enough to create “critical mass.” Third, it requires mitigation over a long period of time, and establishes performance standards or benchmarks that the Bank Sponsor must meet over time. This insures that a mitigation project will be “sustainable” before it is allowed to serve as mitigation for damage. Finally, it institutes long term monitoring and bonding or insurance requirements to further insure performance and sustainability.

Wetland Mitigation Banking Under Washington State Law

Beginning in 1997, the State of Washington adopted legislation and proposed regulations that work in tandem with the Federal law and regulations. In 1998, the State Legislature passed the Wetlands Mitigation Banking Act, Chapter 90.84 RCW (the “State Act”). The State Act states that wetland mitigation banking is an important tool in providing compensation for unavoidable impacts to wetlands in the State and determines that it is the policy of the State to support wetland mitigation banking. It provides for the organization and certification of wetland mitigation banks in the State. The State Act requires that rules be drafted to implement the State Act. In 2000, Ecology finished its draft of a proposed rule (the “State Proposed Rule”). The State Proposed Rule, titled “Wetland Mitigation Bank,” is found at Chapter 173-700 WAC.

The State Act and the State Proposed Rule have their own detailed procedures and requirements. However, they have the same effect as, and are to operate in tandem with, the Federal Act and Guidance. They set out a detailed process for the composition of the MBRT, planning, application, review, public comment, approval, monitoring, financial assurances and other matters relating to the formation, construction and operation of a wetland mitigation bank, and for the sale of Credits.

The Department, the Corps, and local jurisdictions are all members of the MBRT. The Federal, State and local agencies are to work together in the certification process.

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The State Act and the State Proposed Rule are now being tested in a pilot project coordinated by the Department. A number of bankers have applied to form wetland mitigation banks in the State. Five of them have been selected to be part of a pilot project. The applications of five banks are being analyzed and treated by MBRT, in tier one of that pilot project. The two banks in Skagit County—the Nookachamps Bank, and the Skagit Environmental Bank—are two of these banks.

The State Act and State Proposed Rule are consistent with the Federal law. For purposes of this summary, the State Proposed Rule has one important addition that should be of special interest to Skagit County. This addition is the inclusion of the local jurisdiction in the MBRT and certification process.

In the State Proposed Rule, “local jurisdiction” means any local government, including a county, in which the proposed bank is located. WAC 173-700-100.

One stated purpose of the State Proposed Rule is to “establish coordination among the state and local agencies involved in the certification and approval of banks.” WAC 173-200-020(1)(c).

The State certification process begins with the “Pre-application Process.” The Bank Sponsor submits a “Prospectus” to the Department. The Department determines if the Prospectus contains enough information to justify formation an MBRT. WAC 173-200-220(2)(a). If the Department determines that the Prospectus is sufficient to form an MBRT, the Department notifies the local jurisdiction and invites it to co-chair the MBRT. WAC 173-200-220(2)(b); WAC 173-200-710(3); WAC 173-200-732(4).

Following delivery of a Prospectus that is sufficient, a Bank Instrument is prepared. The Department reviews the certification, and if it approves, it notifies the local jurisdiction again. The Department must sign the Bank Instrument as part of the certification process. It notifies the local jurisdiction and requests its concurrence.

The local jurisdiction must review the Department’s certification decision. If it concurs with that decision, it must sign the Bank Instrument. If it does not concur, it must send a notification to the Bank Sponsor and the Department of its non-concurrence and the reasons for its decision. If the local jurisdiction does not concur, the Department will not certify the bank. WAC 173-200-234; WAC 173-200-720(4).

The Bank Instrument must be signed by the Department, the local jurisdiction and the Bank Sponsor for the certification to be complete. RCW 90.84; WAC 173-700-235(1).

Wetland Mitigation Banking Under the Law of Skagit County

Skagit County is involved in the wetland mitigation banking process in at least three ways.

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First, physical construction of the mitigation bank may involve construction, impacts on the shoreline and impacts on the environment that require construction permitting, review under the County Shoreline Program, SEPA review, and other permits or approvals. These processes are separate from the formation or certification of a wetland mitigation bank. That is to say, even if a bank were not being formed and Credits were not being sold, but the property were merely being restored for some other reason, those permits and approvals would still be required in most cases.

Second, as outlined above, the State Act and the State Proposed Rules involve the local jurisdiction in the State certification process. The State Act and the State Proposed Rule provide that the local jurisdiction may co-chair the MBRT, or otherwise be a MBRT member, and that it must concur with and sign the Banking Instrument.

Third, Skagit County Code requires compensatory mitigation for the destruction of wetlands, separate from the requirements of Federal and Washington State law.

SCC Chapter 14.24, Skagit County's Critical Areas Ordinance, states that one of the purposes of the Ordinance is to prevent the continual loss of wetlands and, where practical, to restore wetlands functions and values.

SCC Section 14.24.240 provides that in certain cases impacts on wetlands in the County are subject to compensatory mitigation.

The Skagit County Code provides for consideration of wetland mitigation banking programs that meet certain conditions and that are consistent with the provisions outlined in the State Proposed Rules as a method of compensation for unavoidable adverse wetland impacts associated with future development. SCC Section 14.24.240.10. In other words, a wetland mitigation bank formed subject to the State Act and the State Proposed Rule can be used to provide the compensatory mitigation required by Skagit County for impacts to wetlands in Skagit County.

The Steps in the Formation of a Wetland Mitigation Bank

The following section summarizes the practical steps a Bank Sponsor must take in order to form a wetland mitigation bank under the laws described above.

Conception and Initial Planning

First, the Bank Sponsor will locate a piece of property (the Property), do its due diligence, and develop the plan. The land must be susceptible to restoration at a practical cost over a reasonable period of time, and it must be in an area that is growing, in order to create the demand for the Credits that will be created. Mitigation Banks that use restoration is favored by regulators over preservation, enhancement or creation. Restoration takes lands that were once thriving wetlands,

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but that were destroyed by development, farming, or other activities so that they no longer function as wetlands.

Pre-Application Meeting

Under the Federal Guidance and the Proposed State Rule, the Bank Sponsor has a Pre-Application meeting. This is a preliminary discussion of the feasibility and the procedures relating to the bank. The parties discuss the general direction for, and a schedule for, formation and operation of the bank.

Preparation of Prospectus

Thereafter, the Bank Sponsor prepares a “Prospectus” describing the Property and the plan. The Bank Sponsor submits the Prospectus to the regulatory authorities. Federal and State rules say that the purpose of the Prospectus is to allow the regulatory authorities to determine the “feasibility” of the proposed bank. In fact, the Prospectus is usually far more detailed and is far more reviewed and critiqued than the rules would suggest.

Makeup of the MBRT

Sometime after the Pre-Application meeting, and sometimes as late as after the delivery of the Prospectus, the MBRT is “formed.” In Washington, there is a standing MBRT made up of representatives of the Corps, Ecology, and the EPA. Currently, the standing MBRT is made up of Gail Terzi of the Corps; Christina Merten of the Ecology; and Joan Cabraza of the EPA.

The MBRT is chaired by the Corps and Ecology representatives. Under the State Proposed Rule, Ecology is supposed to invite the local jurisdiction to be a member of, and to co-chair, the MBRT. Other agencies, including the appropriate tribes, are also invited to be members of the MBRT or to attend meetings. If the Corps and Ecology deem the Prospectus sufficient to serve as the basis for a determination of the feasibility of a bank, and if it meets certain administrative conditions relating to format and information, the administrative authorities proceed as an MBRT, to make a decision to certify the bank or reject the request for certification.

Other agencies, such as the State Department of Natural Resources, and counties interested in particular banks, have decided that they do not have the budgets or the interest to be involved on an organized basis in the standing MBRT, but they may occasionally attend meetings or may otherwise be involved.

The MBRT generally meets at regularly scheduled times, sometimes with the Bank Sponsors and sometimes without them, to discuss and decide matters relating to Bank Certification. At those meetings, the MBRT takes the steps outlined in this subsection.

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Under the applicable regulations, the MBRT makes its decisions based on consensus. The regulations provide a process for administrative appeal of decisions by the MBRT in case a dispute arises between the Bank Sponsor and the MBRT.

Approval of Feasibility and Detailed Planning

Once the MBRT has approved the Prospectus and determined the feasibility of the bank, the Bank Sponsors will generate more detailed scientific data and plans for development of the bank. Those data and plans will contain expert assessment of the wetland boundaries and functional benefits of the bank.

Permits and Reviews

Early in this process, the Bank Sponsor and the MBRT will research and will make a list of all of the Federal, State and local permits and approvals (the “Permits and Approvals”) that will be required for formation of the bank. These might include a biological assessment to be made by the EPA. The Bank Sponsors will have to make sure that the bank’s actions comply with the National Historic Preservation Act, and that they comply with other Federal, State and local requirements. The Bank Sponsor and the MBRT will agree on the Permits and Approvals. The Bank Sponsor will then obtain the Permits and Approvals.

Site Visit

During the certification process, the MBRT will make one or more site visits to some or all of the Bank Property, to get a better idea of the project and to help it in its review of and comment to the Bank proposal.

Public Notice

Under the Federal Guidance, the Corps is required to issue a public notice. Under the Proposed State Rule, Ecology is required to issue a public notice. Currently, the MBRT in the State of Washington is issuing two public notices—the Corps is issuing one public notice early in the certification process and Ecology is issuing a second public notice later in the process.

The public notice includes a summary of the plans, terms and conditions for Certification of the bank. This statement and the attachment will be sent to members of the public interested in the bank. Under both processes, the public has thirty days after publication of the Public Notice to comment. The MBRT takes these comments from the public into account in proceeding with the Certification process.

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The Bank Instrument

The five most important matters to be decided are (i) the number of credits (the “Credits”) that the bank will generate; (ii) the geographical area (the “Service Area”) within which the bank can sell its Credits to third-parties to mitigate the destruction of wetlands by those third-parties; (iii) the release schedule (the “Release Schedule”) for the Credits, that is to say, when the bank can begin to sell Credits and how many Credits it can sell over what period of time; (iv) “Performance Standards” that the bank must meet over time in order to be able to continue to release Credits; and (v) the long-term care and management (the “Stewardship”) of the bank Property. Stewardship arrangements include assuring that third-party entities will step in to manage the Property in the event that something happens to the Bank Sponsor, and assuring that financial resources have been set aside to make sure that the bank will be operated according to the terms of the Banking Instrument forever.

Once all of these matters referred to above are decided, the parties will draft a “Banking Instrument.” The bank will be described, and all of the terms and conditions relating to it will be set forth, in the Banking Instrument. The Banking Instrument is a detailed contract between the bank, the agencies that are members of the MBRT, the County, and a number of other interested parties. The Banking Instrument will be signed by each of those parties. It will set out the rights and responsibilities of each of the parties and will be enforceable by any of the parties against the others.

Stewardship

The Bank Sponsor will enter into third-party agreements relating to Stewardship to assure the MBRT of the perpetuity of the bank. These generally take the form of binding and irrevocable conservation easements relating to the Bank Property. A third party trustee is designated to hold and enforce the easement. Stewardship arrangements include assuring that third-party entities will step in to manage the Property in the event that something happens to the Bank Sponsor, and assuring that financial resources have been set aside to make sure that the bank will be operated according to the terms of the Banking Instrument in perpetuity.

Certification of the Bank

Once the Bank Sponsors, the agencies that have participated in the MBRT, other entities that are interested but that have not participated in the MBRT, and the County, through the Board of Commissioners, have signed the Banking Instrument, and once the Stewardship documents have been executed and are effective, the bank will be certified. The Bank Sponsor can then begin preparation of the Property and sell Credits according to the Release Schedule set out in the Banking Instrument.

At that point the Corps can begin reviewing applications by developers under Section 404 of the Act, and can approve or disapprove the sale of Credits by the bank to those applicants.

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Meeting the Performance Standards

As indicated above, the MBRT sets out detailed Performance Standards in the Banking Instrument. These standards are closely monitored by the MBRT, by the Corps in the Section 404 Permit process, by third party experts, and by the Steward under the terms of the Stewardship Agreement. The Bank Sponsor must meet the Performance Standards in order to continue to sell Credits pursuant to the Release Schedule. The Banking Instrument requires financial assurances in the form of bonds, letters of credits, an escrow of sales proceeds, or other arrangements to insure that the Performance Standards are being met. If they are not, the Steward, the MBRT, or the Corps may resort to the financial assurances, draw down the required funds, and have the steps taken, using those funds, to make sure that the performance standards are met.

Sale of Credits

Under the terms of the Banking Instrument, the Bank Sponsor may sell Credits in a manner consistent with the Banking Instrument. The sales are pursuant to permits issued to Permittees under Federal, State or local law relating to the damaging of wetlands by the Permittees.

Clear Valley

Clear Valley has taken or is taking each of the steps required by this certification process. It has gone through each step up to the point of drafting the MBI and entering into the Stewardship Agreement. The plans for construction of the Bank have been finally approved, subject to several small changes. The MBI is being drafted. Clear Valley and the MBRT are in the final stages of determining the number of Credits that will be available to the Bank, the Service Area and the Financial Assurances. It has selected a long term Steward and is prepared to establish a conservation easement over the land that will be restored.

The proposed geographic Service Area (that is, the area within which the Bank may be used to compensate for permitted impacts) will likely include fresh-water wetlands within the Washington State Water Resource Inventory Lower Skagit-Samish Watershed Area WRIA 03; this would exclude the Islands in Puget Sound adjacent to the WRIA 03 Watershed Area, and would exclude all estuarine (saltwater) wetlands.

Clear Valley will implement a Monitoring Plan that will be designed to identify the measurable change in functional value resulting from the restoration. The performance standards for each monitoring variable will be set according to the measurability of each variable and according to desired condition. For example, one fisheries functional improvement is the increase in rearing habitat. Monitoring will be conducted at different times throughout the year depending on the variable being measured. Monitoring results will be delivered to the MBRT annually, and more frequently if necessary, for 10 years beyond the date of as-built construction drawing approval by the MBRT for each phase.

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Clear Valley will also design a Contingency Plan to accommodate any shortcomings in achievement of performance standards. Each monitoring variable will have a set of contingency procedures designed to rectify any potential deviation of the evolving condition that is a shortfall of the desired condition target. All reasonable potential problems or shortcomings will be identified in advance in the Contingency Plan.

Finally, Clear Valley will enter into real estate agreements that will permanently protect the Bank. It will create a conservation easement for the Restoration site, which will be recorded in the official records of Skagit County prior to construction. The conservation easement will be conveyed with, and will burden, ownership of the Bank.

A representative of the County has been a member of the MBRT through the significant stages of its determinations.

The Native Seed and Plant Farm on the Restored Wetland

Clear Valley Native Seed and Plant Farm

In addition to using the Restoration site as a wetland mitigation bank, Clear Valley will incorporate a native seed harvesting and cutting operation as a component of the Restoration site. As proposed, the sustainable harvest of seeds and cuttings within the Bank is consistent with the agricultural uses and policies set forth in the Skagit County Shoreline Management Master Program (“SMMP”) and the County’s Comprehensive Plan. The addition of this operation to the Restoration site further ensures that the restoration will result in no net negative impact on agricultural lands in Skagit County because it results in a change of the type of agricultural use of the property, not a removal of lands from agricultural production.

The harvesting of native seeds and selective cutting of native plants will operate as an alternative agricultural enterprise on the Restoration site. Under this plan, as detailed below, seeds and cuttings from select wetland species will be hand-collected using ecologically sustainable methods. Harvested seeds and cuttings will be used in ongoing maintenance and repair of the Bank, and will be marketed and sold to third parties, creating an additional source of revenue for the owners of the Restoration site and for agricultural workers and related agricultural businesses in Skagit County.

Clear Valley will take seeds and cuttings from select species cultivated on the restored wetland. Seeds and cuttings will be collected by hand; no machinery of any kind will be used in this operation. Seeds and cuttings will be taken once each year for each selected species. No more than 30 percent of the entire mature seed crop (available at the time of collection) for any species will be harvested during any one growing season. No more than 30 percent of the current year’s growth of new stems on the woody species will be harvested during any one growing season. Collection will be supervised by nursery staff experienced in hand collecting seeds and cuttings and best management practices will be employed including minimizing trampling, limiting the harvest as described above, and refraining from harvesting when seed plant species aerial coverage within the Restoration site is less than 1,000 square feet.

The development of an alternative agricultural enterprise involved in the sustainable harvesting of seed and cuttings in conjunction with the wetland restoration on the Restoration site has enormous ecological, economic, and cultural benefits. In addition, careful monitoring by the owners and the easement holders will prevent any activities that would adversely affect the project’s ability to meet the performance standards of the mitigation bank. Sustainable harvest of seeds within the Restoration site is also consistent with the agricultural uses allowed under the Shoreline Management Act (SMA) in Skagit County. Some of the natural processes that historically assured a sustainable and ecological healthy native ecosystem on the site have been eliminated through time. The lack of large herbivores has left a gap in the ecological processes

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that must be replaced in order to maintain a sustainable ecosystem. These animals browsed the woody plants in a random pattern, which resulted in periodic new healthy growth providing food and habitat for small game and passerine birds. The presence of these animals also reduced biomass in the herbaceous vegetation and helped distribute seed and incorporate it into new sites. The result of this animal activity was a mosaic of mixed age stands of vegetation that provided the ecotone habitat required by many species and maintenance of healthy and reproducing plant communities. The ecological services once provided by large herbivores will be replicated by the careful and controlled harvest of seed and cuttings on the Restoration site.

Products harvested will provide an additional source of income for the owners and job opportunities for agricultural workers and businesses in the community in addition to providing additional plant material for use in ongoing maintenance and repair of the Restoration site. Many of the skills and much of the materials and equipment needed for the harvest and processing of seed and cuttings from the site exist within the Skagit County agricultural community. The jobs provided by this alternative agricultural enterprise will help maintain the rural character of the area.

The method of choice for collecting seed from diverse native plant communities in which particular species are targeted is hand collection. This method is considered the least invasive and damaging to the native vegetation. Seed is collected on an opportunistic basis. Hand collection is time consuming and unprofitable unless a large amount of seed can be collected within a short period of time. Therefore, hand collectors do not try to get every bit of seed but instead look for opportunities to collect more seed within a shorter timeframe. As a result, collectors access a small percentage of the actual area, and a huge amount of the available seed is left behind. In most seed collection efforts, it is virtually impossible to collect more than 50 to 70 percent of the available seed (Ogden 2007).

Dumrose (2004) describes the use of simple tools such as racquets, hoppers, and felt boards for seed collection and unique low-cost tools such as rock tumblers in aqueous and dry modes for cleaning and conditioning seed. Hand and mechanical collection of the seed-bearing stalks can be effective for grass-like species (Darris 2005). However, mechanical stripping results in a loss of substantial quantities of seed.

Lochner (1997) suggests that hand collection is the best method for harvesting individual species. He emphasizes the importance of an ethic of seed collection that includes (1) limiting the harvest to no more than 10 to 75 percent of the available seed, (2) refraining from harvesting when seed crops are small, and (4) keeping in mind the goal of harvesting native seeds, which is to preserve native species.

Because the Restoration site will have substantially reduced populations of mammals, harvesting seed and cuttings will mimic herbivory in the short term, maintaining the health and diversity of native plant communities. A study by Bowers (1993) showed that a large number of plants reached the highest abundance when herbivore pressure was intermediate. This “intermediate level” of herbivory can be difficult to achieve in an uncontrolled situation involving large herbivores but the proper level can be mimicked through the selective harvesting of cuttings.

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Similar responses to herbivory were noted in grassland management studies (Chase et al. 2000; Comis 1999). These studies support the belief that herbivore reduction of biomass at a moderate level increases the health and biodiversity of grasslands. Hand harvest of seed from grass-like species involves the cutting of plant material to harvest the seed heads. This material is then dried out and the seed is extracted. Seed harvest from grass-like plants is an excellent method of providing the moderate and selective biomass reduction that moderate grazing provides, but in a much more controlled manner. Darris (2005) notes that removal of this biomass or dead material is widely known to improve the seed yields of most grass seed crops.

In a study of herbivory effects on wetlands, the results suggested that “herbivore activity prevented competitive exclusion despite increased biomass, probably by suppressing one of the dominant plant species and preventing dead biomass accumulation” (Gough and Grace 1998). The investigators found that inside the fences (controls) in both marshes, the significant increase in accumulation of dead biomass may have suppressed seedling establishment and germination. They showed that selective reduction of biomass in wetlands is an important management activity, especially in emergent wetlands. Rupp et al. (2001) investigated issues of both trampling and biomass reduction on the health of a wetland plant community. They concluded that *Carex* spp. did not appear to be adversely affected by grazing and trampling. The results of the study also suggested that moderate trampling may stimulate plant productivity.

Management Practices

Management practices for the sustainable collection of seed and cuttings have been developed to serve as safeguards to ensure that the collection of seed and cuttings results in no damage to the wetland or the wetland mitigation bank. Typical collection techniques and retrieval rates of harvestable seed and cuttings for the various types of plant material to be collected are described in the following text. The management practices include a commitment to retaining a specified percentage of the collections for potential repairs and enhancement of the Restoration site identified through the process of adaptive management.

Cone-Bearing Trees

Western red cedar (*Thuja plicata*) and Sitka spruce (*Picea sitchensis*) will not bear harvestable seed for at least 20 years. Therefore, most near-term production will involve existing plants. When seed is produced, it will be collected by climbing or using pole pruners to cut ripe cones. During the collection process, care will be taken to avoid damaging tree trunks and branches. Ladders and pole pruners will be used while the trees are small enough to reach seed and only the cone clusters will be removed. This is similar to the clipping of cones by tree squirrels in a native stand. When the trees are taller, professional tree climbers using light impact climbing gear may be hired. During each season, no more than 30 percent of each cone crop will be collected. Ten percent of the clean seed in each collection will be reserved to grow plants for the repair or enhancement of the cedar and spruce populations at the environmental bank. This rate of seed retention will continue until enough seed is available to replace 50 percent of the trees on

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the site if necessary. Seed stored for this purpose can be held for up to 10 years (below freezing) but will be tested annually and replaced as it loses viability.

Alders

Red alder (*Alnus rubra*) and Sitka alder (*Alnus sinuata*) produce seed in small cone-like capsules that are persistent over the winter but shed seed over a period of several weeks. Because of this characteristic, it is virtually impossible to collect more than 30 percent of the available seed. The cones are collected by hand, resulting in little impact on the plants. Ten percent of the clean seed in each collection will be reserved to grow plants for the repair or enhancement of the alder populations at the environmental bank. This rate of seed retention will continue until enough seed is available to replace 50 percent of the alder on the site if necessary. Seed stored for this purpose can be held for up to 5 years under refrigeration but will be tested annually and replaced as it loses viability.

Ninebark

Pacific ninebark (*Physocarpus capitatus*) produces seeds in small capsules that are harvested by hand picking ripe seed capsules and extracting the seed. When the seed is ripe, a majority of seed is lost during harvesting, and ripening occurs over a period of several weeks. It would be impossible to harvest more than 30 percent of the seed crop. The seed has adapted to be carried by wind and would be transported to new germination sites during the harvesting process. Ten percent of each collection will be reserved to grow plants for the repair or enhancement of the ninebark populations at the Restoration site. This rate of seed retention will continue until enough seed is available to replace 50 percent of the ninebark on the site if necessary. Seed stored for this purpose can be held for up to 5 years under refrigeration but will be tested annually and replaced as it loses viability.

Fruit-Bearing Shrubs

Seed of the Salmonberry, the Douglas hawthorn, Black twinberry, Cascara, Pacific crabapple, and the Sweet gale will be harvested by hand picking ripe fruit. Typically the fruit does not all ripen at the same time; therefore, much is left behind during the harvest and subsequently drops to the ground, where it can be eaten by rodents and birds and transported to new sites (with the germination-inhibiting fruit removed). This dispersal will result in expanding populations of each species. Because of the uneven ripening, it is impossible to collect more than 30 percent of the crop during one picking.

Fruit of the Swamp rose, and the Nootka rose persists through the winter.

At least 50 percent of each seed crop will be left on the shrubs to provide food for wildlife and winter dispersal of the seed by the consumers of the fruit.

Ten percent of each collection will be reserved to grow plants for the repair or enhancement of the populations at the bank. This rate of retention will continue until enough seed is available to replace 50 percent of each species on the site if necessary. Seed stored for this purpose can be

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held for up to 5 years under refrigeration but will be tested annually and replaced as it loses viability.

Willows and Dogwood

For Red-osier dogwood, Pacific willow, Sitka willow, Hookers willow, and Sandbar willow, two to three foot-long cuttings will be harvested by cutting up to one-third of the yearly stems after the plants are well established.

Appropriate harvesting will encourage increased sprouting and production of vegetation. The collection activity will also prevent willows from becoming decadent and overgrown with woody material that is not usable habitat. This collection will mimic browsing by large herbivores or beavers. Cuttings will not be harvested from select populations of willows to allow them to reach maximum height and density in situations where heavy shade is beneficial for the suppression of reed canarygrass and a reduction in water temperatures. Up to 10 percent of each collection will be reserved for use by the mitigation Bank. However, cuttings cannot be stored for more than a few months; therefore, Clear Valley will determine whether cuttings from the cutting collection will be needed for repair or enhancement during that season.

Mature willows and dogwoods excluded from the cutting collection will be a valuable source of seed. Many native plant nurseries grow red-osier dogwood from seed; therefore, mature dogwood would provide a source of seed for the market with some reserved for use in repairing or enhancing the Restoration site. There is also considerable interest in and increasing use of willow seed instead of cuttings to grow willow plants. Bitterroot Restoration (a native plant nursery in Corvallis, Montana) grows all of its container willows from seed. Thousands of plants can be grown from seed collected from a small patch of willows in an hour or so with no visible impact on the plants. As this practice becomes more common, the seed business will work to develop a viable market for willow and dogwood seed.

Cottonwoods

Cuttings of black cottonwood (*Populus balsamifera* spp. *trichocarpa*), two to three feet long, will be harvested by cutting new growth from lower branches to encourage the development of a tree form. Cuttings will also be collected from sprouts at the bases of the trees. No cuttings will be made from the apical tips of the trees, and no more than one-third of the crown will be removed during any collection. Cuttings will be available for use by the mitigation Bank.

As with willows, cottonwoods can be successfully grown from seed. The seed farm will attempt to develop a market for cottonwood seed that can be sold and retained in storage for use on the Restoration site.

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Emergent Wetland Vegetation: Grasses and Forbs

Seeds or plant material will be collected from a number of emergent species such as Short awn foxtail, Douglas aster, Tufted hairgrass, Common spikerush, Slough sedge, Daggerleaf rush, Soft rush, Baltic rush, Three-square bulrush, and Small-fruited bulrush.

Collection from emergent vegetation will be conducted by hand picking or cutting ripe seed heads and extracting the seed. This operation results in a maximum harvest of approximately 30 percent of the seed because the seed is released and scattered by the collection process. Seed collection may be a very useful management technique for scattering seed to bare spots and stepping it into the seed bed. Ten percent of each collection will be reserved to grow plants for the repair or enhancement of the emergent populations at the Restoration site. Seed stored for this purpose can be held for up to 5 years under refrigeration but will be tested annually and replaced as it loses viability.

The method for collecting grass-like species is cutting the seed-bearing stalks, drying the material, and then extracting the seed in a way that is similar to pre-combine methods of grain harvest. This results in not only usable seed but a great deal of “wetland straw” that could be used for erosion control in repairs at the Restoration site or other wetland restoration projects.

Submerged or Floating Vegetation

Plant material will be collected from Yellow pond lily and Wapato, which are submerged or floating species.

Collection of plant material from submerged or floating vegetation will be conducted by dividing well-established populations that cover more than 100 square feet and removing no more than 20 percent of the existing plants. The collection will not be concentrated in one area and will result in minimal unvegetated areas. Because plants harvested in this way cannot be stored for more than a few months, the conservation easement holder will determine how many plants from each collection will be needed for repair or enhancement at the Restoration site.

Management Protocol and Safeguards

Collection of seeds and cuttings from established native vegetation at the Restoration site will be managed according to a sustainable approach that is not detrimental to the survival of the plant communities. The collection will be performed according to the ethics described by Lochner (1997): there will be no collection when seed crops are small and the goal of harvesting native seeds (the preservation of native species) will be a focus. In many cases, this activity will be beneficial and can be used as a management technique to maintain the health of the system. Practices and restrictions for ensuring the success of the mitigation site and the seed and cutting business will include but not be limited to (i) limiting the percentage of available seed and cuttings to be collected each season; (ii) reserving a portion of each collection for repair and

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enhancement at the Restoration site by the conservation easement holder; (iii) coordinating the collection activities with site maintenance; and (iv) using the seed and cutting collection as enhancement efforts to improve the health of the Restoration site.

Management protocols and safeguards to protect the mitigation site from potential impacts of seed and cutting collection will include (i) restricting the harvest of each species to an appropriate level by not conducting seed/cutting collection that would exceed the limit for that species as outlined in this document; (ii) monitoring the growth of plant groups to assess progress toward meeting the mitigation bank density requirements, aerial cover and crown cover performance goals; (iii) performing no seed or cutting collection if performance goals are not yet met or fall below the goals; (iv) approval of any seed or cutting collection must be approved by the conservation easement holder prior to any collection activity; and (v) a qualified wetland scientist must be on site during all collection activities.

The first commitment to maintaining the integrity and health of the wetland is to restrict the collection of seed and cuttings to a maximum of 30 percent of the annual production. In a healthy plant community, this amount of harvesting will not result in any degradation of community health. This commitment will ensure that the plant community and wildlife that depend on the seed crops for food and the riparian shrubs for cover will not be adversely affected.

Monitoring of the mitigation site will be the basis for determining whether or not the collection of seeds and cuttings will be allowed and will be conducted by the conservation easement holder. After the initial planting, it is expected that several years of growth will be required for the establishment of plant communities that can produce seed and cuttings at rates that can sustain the communities and provide materials for collection. Based on the establishment of vegetation and the goals for coverage at the Restoration site and the quantity and quality of the seed crops, the seed farm will make a yearly species-specific proposal for seed and cutting collection.

Sites to be excluded from the collection of cuttings to allow the development of mature shrubs for stream shading, habitat value, and inhibition of reed canarygrass may be reviewed yearly. These areas will be mapped by a global positioning system (GPS) and clearly delineated on a site map. Cuttings will not be collected from these sites unless it is necessary to rejuvenate the shrubs as they become decadent over time.

Safeguards and protocols will set appropriate levels of harvesting seed and cuttings and provide a mechanism for monitoring and restricting the harvest if the health of the restoration project is adversely affected. Data collected during each year of harvest will be used for the modification of future collection plans. The ethical and effective collection of seed and cuttings at the Restoration site will provide for an operation that is a good example of self-sustaining, low-impact agriculture.

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Consistency with the Shoreline Management Act

The proposed sustainable seed harvesting is consistent with SMA regulations presented in Section 14.26, Chapter 7.01 of the Skagit County Code. The site is zoned Rural and is currently in agricultural use. The restoration of the site will improve water quality, wetland habitat, and fish and wildlife habitat at the site and within Nookachamps Creek and the East Fork of Nookachamps Creek. The process of sustainable seed harvesting will not remove the parent plants, and will provide a buffer of sustainable, perennial vegetation for Nookachamps Creek and the East Fork of Nookachamps Creek. Furthermore, no structures will be developed in conjunction with the proposed restoration site or the sustainable seed harvest. Based on the above information, the proposed sustainable seed harvest at the Restoration site is consistent with the policies and goals of the SMA in Skagit County. Further information on project compliance with the SMA is presented in detail in the *Shoreline Compliance Narrative – Skagit Environmental Bank*, provided to Skagit County (Herrera 2007).

The seed plan and the wetland mitigation bank also comply with the Skagit County Comprehensive Plan and SMMP Policies for agricultural practices and uses. The seed plan is an alternative agricultural enterprise that constitutes agriculture under the SMMP and the County Comprehensive Plan.

Implementation of the seed plan will result in a conversion of the land from its former agricultural operation (pasture and feed corn) to a productive farm of wetland plant seed and nursery stock. This conversion, in conjunction with creation of the Bank, will result in an increase of approximately 80 acres of land in agricultural production.

The cultivation and harvesting of seeds and cuttings of native wetland plants falls under the definitions of “Agriculture” and “Agricultural Practices” in the SMMP, and meets the definitions of “Agriculture,” “Agricultural Land,” and “Farm” in the Comprehensive Plan.

The SMMP’s definition of “Agriculture” includes “the farming or raising of...nursery stock on land.” SMMP § 3.03(5). Under the seed plan, native wetland seed and cuttings will be raised as nursery stock, and then sustainably harvested and sold to local governments, existing native seed companies, restoration companies, the public, and/or nurseries.

“Agricultural practices” is defined in the SMMP as “all methods of livestock, crop, vegetation and soil management” including without limitation “the related activities of tilling, fertilizer application, soil preparation and maintenance, the raising of livestock, and the control of weeds, plant diseases, and insect pests.” SMMP § 3.05(7). The seed plan would utilize low-impact, sustainable agricultural methods of crop, vegetation, and soil management to ensure the viability and health of both the wetland plants from which seeds and cuttings would be taken, and the wetland ecosystem upon which the plants depend.

“Agriculture” and “Agriculture Land” are more broadly defined in the Skagit County Comprehensive Plan than in the SMMP. The native seed and plant plan, which proposes the

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production and cultivation of seed and cuttings of wetland plants for commercial purposes, falls under these broad definitions. “Agriculture” is defined as “[t]he use of land for commercial production of horticultural, viticultural, floricultural, dairy, apiary, vegetable, or animal products or of berries, grain, hay, straw, turf, seed, Christmas trees...or livestock.” Comp Plan Appendix A-4. “Agricultural Land” is defined as “[l]and primarily devoted to the commercial production of horticultural, viticultural, floricultural, dairy, apiary, vegetable, or animal products or of berries, grain, hay, straw, turf, seed, Christmas trees...or livestock and that has long-term significance for agricultural production.” Comp Plan Appendix A-5.

The fact that agricultural activities are being conducted on a wetland enhancement and restoration site does not mean that the land is not “primarily” devoted to the commercial production of agriculture. As explained in the Comprehensive Plan, the intent behind the requirement that natural resource lands be used “primarily” for natural resource extraction is to prioritize natural resource extraction over residential activity. The primary and preferred uses on natural resource lands “will be the growing, harvesting or extracting, and processing of natural resources,” and any residential activity permitted “will occur in a manner that minimizes the amount of land converted to non-resource uses...” Comp Plan 5-1. In contrast, the entire Restoration site, with the possible exception of the portions under water year round, will be devoted to the sustainable, low-impact growing and extracting, and potentially processing, of natural resources – seeds and cuttings from wetland plants. The Bank poses no conflict with, or threat to, the agricultural activities that will be undertaken as set forth in the seed plan. Because no use conflict exists, the land remains primarily devoted to agricultural practices.

Finally, the addition of the seed plan to the Bank renders the Bank a “Farm,” and activities carried out pursuant to the seed plan a “Farm Operation.” A “Farm” consists of “land, buildings and machinery used in the commercial production of land-based farm products.” SCC 14.04.020. A “Farm Operation” is defined as “conditions or activities which occur on a farm in connection with the commercial production of land-based farm products, and includes, but is not limited to, market produce at roadside stands or farm markets; preparation for market, delivery to storage or to market, or to carriers for transportation to market; transportation of equipment; noise, dust, fumes, operation of machinery and irrigation pumps; ground and aerial seeding or spraying; application of chemical and organic fertilizers, conditioners, insecticides, pesticides and herbicides and associated drift of such materials; and the employment and use of labor.” *Id.* The seed plan calls for the sustainable, commercial production of wetland plant seeds and cuttings, which will occur on the Restoration site. The activities that will occur onsite in connection with the cultivation, management, harvest, and sale of these seeds and cuttings constitute a Farm Operation.

Many of the Comprehensive Plan and SMMP policies addressing agriculture are not relevant to the native seed and plant plan. For example, the seed plan does not relate to the establishment of an Agricultural Advisory Board or the development of an Agricultural Lands Database, require a rezoning, or involve residential development (Comp Plan Policies 5A-1.1, -1.2, -2.1, -3.3, -3.4, -3.5). It is unclear at this time whether the seed plan will include agricultural support services or a farm-based business. Regardless, any such services or business if included in the seed plan

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will not be detrimental to long-term agricultural use, nor to the Bank itself. (Comp Plan Policies 5A-4.1 to 4.4).

The Comprehensive Plan encourages efficient agricultural operations and production based on sustainable agricultural and best management practices. (Comp Plan Policy 5A-3.2). The very premise of the seed plan is that it will be efficient and sustainable, and extensive management practices to ensure its long-term viability are set forth in the Proposal and its supporting documentation. The seed plan is designed to be an alternative agricultural enterprise that utilizes low impact cultivation and harvesting techniques of native wetland plants, in conjunction with a wetland restoration/enhancement project.

The Comprehensive Plan's natural resources policies recommend that anticipated conflicts between a proposed new or modified land use and existing agricultural activities be mitigated by the newer use (Comp Plan Policy 5A-6.2). The seed plan both represents a change in type of agricultural production, and acts as mitigation for the wetland restoration as it relates to the existing agricultural activity, pasture, and feed corn. While it is debatable whether this policy applies in the situation where, as here, one agricultural activity replaces another, allowing agricultural production to continue on the wetland restoration site is an ideal way to mitigate conflicts between existing agricultural use and the wetland restoration.

The Comprehensive Plan policies state that the primary use of any parcel on lands designated as Agriculture be agricultural production and related processing and support services (Comp Plan Policy 5A-6.3). The wetland restoration, in conjunction with the plan, is consistent with this policy. First, the policy specifically contemplates conflicts between agricultural uses and residential uses, not wetland restoration/enhancement projects. Second, the nature of the restoration and the seed plan allow them to simultaneously exist on the entire parcel; the use of one does not preclude the other. In fact, with the addition of the seed plan to the wetland restoration, more land will be in agricultural production after than prior to the wetland restoration's implementation.

The native seed and plant plan allows lands which have agricultural capabilities to continue to be used for agricultural purposes (SMMP § 7.01(1)(A)(1)), while simultaneously allowing for the restoration activities proposed by Clear Valley. Cultivation and harvesting of native wetland seeds and cuttings will not require the application of pesticides (SMMP § 7.01(1)(B)). Once the site is restored to an original wetland ecosystem, no diking or filling of wetlands will be required to create new agricultural lands (SMMP § 7.01(1)(A)(2)). Management practices have been developed to ensure that the collection of seed and cuttings results in no damage to the wetlands. The seed and cuttings will be hand-harvested, and species-specific collection techniques will be used, to ensure that no risks will be posed to water quality or shorelines. (SMMP § 7.01(1)(B), (C)).

The SMMP policies call for the protection of lands which have agricultural capabilities and the utilization, maintenance, and protection of new, existing, and natural drainage systems and outlets (SMMP § 7.01(1)(A)(1), (D)(1)). The purpose of these policies is to ensure the continued use of land for agricultural production. As explained above, the native seed and plant farm is an

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alternative agricultural enterprise that constitutes agriculture, and agricultural practices, pursuant to the SMMP. Its implementation represents the conversion of land from one form of agricultural production to another, not the loss of land being used for agricultural production. Further, as described above, the seed plan will actually result in a net increase in land being used for agricultural production.

The Comprehensive Plan policies related to agricultural lands are designed to insure the “stability and productivity” of the County’s agricultural lands and industries. Comp Plan 5-2. The inclusion of an emerging agricultural enterprise in the County’s portfolio of agricultural practices, on agricultural lands, will increase the diversity of agricultural activities, helping to insure the stability and productivity of the industry as a whole in the long term.

Immediate Plans

At this time, Clear Valley is preparing to make a proposal to a prospective purchaser for the cultivation of about 170,000 native plants on the project site, a contract that would involve a possible 17 acres of the site. Work would begin as early as February of 2008. In addition, to begin development of the farm, Clear Valley is planning to plant approximately 20 acres of the project site in a number of species of willows in February of 2008. These willows will be harvested to provide stock for the restoration project and for sale to third parties. These are only the first steps in the development of the native seed and nursery farm. Within several months, the concept of a native seed and plant farm will be a working reality that, within the next six months should cover almost ten percent of the Restoration site and over the years should cover the 380 acres of the 396 acre Restoration.

Impacts to Farmland and Agriculture

Non-Restoration site Land Sold or Withheld by Clear Valley

Clear Valley has sold, or intends to sell, all but 433 acres of the land that it has purchased. Much of the land that has been or will be sold was never used for agriculture or incident to agriculture. For example, much of the land to be sold is part of Barney Lake. Other parts of the land have been used and will continue to be used as residences. All of the land sold or to be sold is subject to the zoning restrictions of Skagit County, including those imposed by the fact that the property is in the Ag-NR zone.

None of the land that has been sold or will be sold has been changed from the uses to which it was put prior to its acquisition by Clear Valley, and all of that land is subject to County zoning and other restrictions on use.

The Restoration Site

The Restoration site and its buffers will take up 396 acres of land. Approximately 320 acres of that property were used for agriculture prior to Clear Valley's acquisition of the property. As outlined above, the land is wet much of the year and is relatively unproductive as farmland.

Restoration projects—such as mitigation banks—and agricultural activities are both outright permitted land uses at the Restoration site under the Skagit County Agricultural-Natural Resource Lands (Ag-NRL) regulations to which Clear Valley and its applications to the County are “vested.” The County has already determined that the restoration project is consistent with the County's development regulations and allowed as an outright permitted use. The Restoration site is zoned Ag-NRL. Skagit County sets forth uses that are permitted outright in the Ag-NRL district. SCC 14.16.400. The Ag-NRL provisions to which the restoration project is vested permits outright water diversion structures and impoundments related to onsite wetland restoration/enhancement projects. SCC 14.16.400(2)(p).

When the wetland restoration was initially proposed, it was thought that the restoration would take out of production approximately 305 acres of land that was previously used for agricultural production.

As set forth in the Section 6 of this Report, Clear Valley intends to operate a native seed and plant farm on the Restoration site. The farm is an alternative agricultural enterprise that constitutes agriculture under the SMMP and the County Comprehensive Plan, and complies with the Shoreline Management Act and Skagit County Comprehensive Plan and SMMP Policies for agricultural practices and uses. In effect the Bank will be a large nursery or horticultural farm.

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The effect of the adoption of the native seed and plant plan—an alternative agricultural enterprise—is that the wetland restoration results in no removal of land from agricultural production. The native seed and plant plan allows lands which have agricultural capabilities to continue to be used for agricultural purposes, while simultaneously allowing for the restoration activities proposed by Clear Valley.

In fact, the seed plan results in a net increase of land being used for agricultural production. The continuation of agricultural activities on the Restoration site is based on a commitment to creating “no net negative impact” on agricultural lands in Skagit County. The seed plan goes further than mitigation, however; it allows the entire Restoration site to be used for agricultural production at the same time that it is used for the restoration and enhancement of wetlands. Thus, there is no removal of agricultural lands to mitigate. With the addition of the native seed and plant plan, approximately 385 acres of land – 100 percent of the Restoration site not under water year-round – will be under cultivation. This amounts to an increase of approximately 80 acres of land in agricultural production over that currently and historically used for agricultural purposes in the Restoration site area.

The seed farm is a type of agriculture more suitable to the hydrologic conditions at the site than those previously practiced. As described in Subsections 1(B) through 1(D) of this Report, most of the Restoration site was historically a wetland. Even after the clearing, draining, and grading of the property by settlers, which significantly altered the natural hydrology of the site, the land is only marginally productive. The soils all have very severe limitations that restrict the choice of plants, require very careful management, or make them generally unsuitable for cultivation.

The farmer from whom Clear Valley purchased the land has reported that the land is so wet that it is often difficult to farm. He reports anecdotally that perhaps one year in five, summer floods inundate the Restoration site, resulting in loss of crops for that year. He reports that the loss of revenues for that flood year consume any profit from other years. He has reported that if left uncultivated for a number of years the Restoration site would return to a wetland on its own. In the last few years winter floods have killed the cover crops of grass (grass of non-wetland varieties) that prevent erosion of the soil. (The obvious question is why the cover crop is not wetland grass; the answer is that wetland grass seed is too expensive to spread at a profit in an ongoing farming operation.) In the 2007 growing season, Clear Valley leased the project site for pasture, and for potato and corn cultivation. Much of the pasture land was too wet to graze over the Summer due to Summer floods. About 15% of the potato crop, and 10% of the corn crop, were lost to flooding and wet conditions. In 2006, Clear Valley allowed a local farmer to mow a part of the Restoration site for hay. He planned two mowings. He completed the first mowing, but did not do the second, saying the ground was too wet, and said he would not be interested in leasing the ground again. These are not unusual results.

The seed farm results in a change of the type of agricultural use of the property to a use that is more appropriate to the hydrologic conditions of the site. The wet condition of ground, the annual Winter flooding, and the risk of Summer flooding, all become assets to the wetland native seed and plant farmer, rather than liabilities. This native farm use will make the land more

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productive, and further ensures that the restoration will result in no net negative impact on agricultural lands in Skagit County.

What is more, this emerging and pioneering form of agriculture will add to the diversity of agricultural practices and farming in Skagit County.

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ATTACHMENT A

Project Vicinity Map

ATTACHMENT B

1941 National Resource Conservation Service Aerial Photograph and Soil Survey

ATTACHMENT C

Farmland Soil Map

ATTACHMENT D

Figures 1 and 2

ATTACHMENT E

Calculation of Clear Valley Environmental Farm Acreage

Attachment E—Calculation of Clear Valley Environmental Farm Acreage

This table shows the acreage of Clear Valley Environmental Farm originally purchased, the acreage that has been sold and the intended uses of acreage that has not yet been sold.

| Description | Acreage | Acreage Remaining |
|---------------------------------------|---------|-------------------|
| Originally Purchased | 805 | 805 |
| Completed Dispositions | | |
| Given Back To Seller | (4.2) | 800.8 |
| Sale of Knoll Property | (90.8) | 726 |
| Sale of Middle House Property | (1) | 725 |
| Sale of Railroad House Property | (8.6) | 716.4 |
| Sale of Blue House Property | (20.2) | 696.2 |
| Property owned as at 11/20/07 | | 696.2 |
| Intended Dispositions and Uses | | |
| Proposed Sale of Red Barn Property | 42.7) | 653.5 |
| Possible Sale to Skagit Land Trust | (222) | 431.5 |
| The 33 Acre Property | (33.1) | 398.4 |
| Skagit Environmental Bank | (396) | 2.4* |

*Some of these acreages have come from surveys, done by different surveyors, using different base points, resulting in inconsistent numbers. The other measurements have been made from GIS maps, and are subject to a margin of error. These facts account for the discrepancy in the calculations. A survey of the property, giving accurate figures, will be done as necessary.

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ATTACHMENT F

Phase 1, Existing Conditions and Proposed Structures

ATTACHMENT G

Summary of Phase I activities on the Project Site for the Skagit Environmental Bank

Attachment G—Summary of Phase I Activities on the Project Site for the Skagit Environmental Bank

| Aquatic Resource | Activity | Temporary Excavation Impact | | Temporary Fill Impact | | Permanent Fill Impact | |
|-------------------------------|-----------------------|-----------------------------|----------------------|-----------------------|----------------------|-----------------------|----------------------|
| | | Area (acres) | Volume (cubic yards) | Area (acres) | Volume (cubic yards) | Area (acres) | Volume (cubic yards) |
| Wetland 1 | Ditch filling | — | — | 2.01 | 1,967 | — | — |
| Wetland 2 | Ditch filling | — | — | 0.74 | 351 | — | — |
| Wetland 3 | Ditch filling | — | — | 0.58 | 272 | — | — |
| Wetland 4 | Ditch filling | — | — | 1.87 | 7,262 | — | — |
| Wetland 5 | Ditch filling | — | — | 0.14 | 259 | — | — |
| Wetland 7 | Ditch filling | — | — | 0.12 | 1,261 | — | — |
| Total Wetland Impacts | | — | — | 5.46 | 11,372 | — | — |
| Nookachamps Creek | Installation of ELJ 1 | 1.74 | 670 | 0.11 | 711 | — | — |
| East Fork Nookachamps Creek | Installation of ELJ 2 | 0.52 | 280 | 0.05 | 233 | — | — |
| East Fork Nookachamps Creek | Installation of ELJ 3 | 0.52 | 540 | 0.02 | 133 | — | — |
| Total Riverine Impacts | | 2.78 | 1,490 | 0.18 | 1,077 | — | — |

A dash indicates no impacts.

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ATTACHMENT H

Phase II, Proposed Planting Plan

ATTACHMENT I

Summary of Phase II Activities on the Project Site for the Skagit Environmental Bank

Attachment I—Summary of Phase II Activities on the Project Site for the Skagit Environmental Bank

| Aquatic Resource | Activity | Temporary Excavation Impact | | Temporary Fill Impact | | Permanent Fill Impact | |
|-------------------------------|------------|-----------------------------|----------------------|-----------------------|----------------------|-----------------------|----------------------|
| | | Area (acres) | Volume (cubic yards) | Area (acres) | Volume (cubic yards) | Area (acres) | Volume (cubic yards) |
| Wetland 1 | Excavation | 2.66 | 10,000 | — | — | 0.04 | 268 |
| Wetland 2 | Excavation | 2.56 | 16,470 | — | — | — | — |
| Wetland 3 | Excavation | 0.84 | 2,600 | — | — | 0.07 | 200 |
| Wetland 4 | Excavation | 1.65 | 6,080 | — | — | — | — |
| Wetland 5 | Excavation | 0.73 | 3,890 | — | — | — | — |
| Wetland 6 | Excavation | 0.22 | 160 | — | — | — | — |
| Wetland 7 | Excavation | 3.66 | 14,740 | — | — | 0.78 | 1,250 |
| Wetland 8 | Excavation | 6.45 | 10,462 | — | — | — | — |
| Wetland 9 | Excavation | 3.77 | 10,800 | — | — | — | — |
| Total Wetland Impacts: | | 22.54 | 75,202 | — | — | 0.89 | 1,724 |

A dash indicates no impacts.

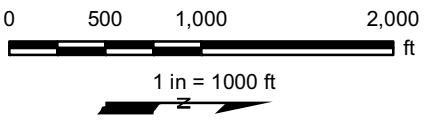
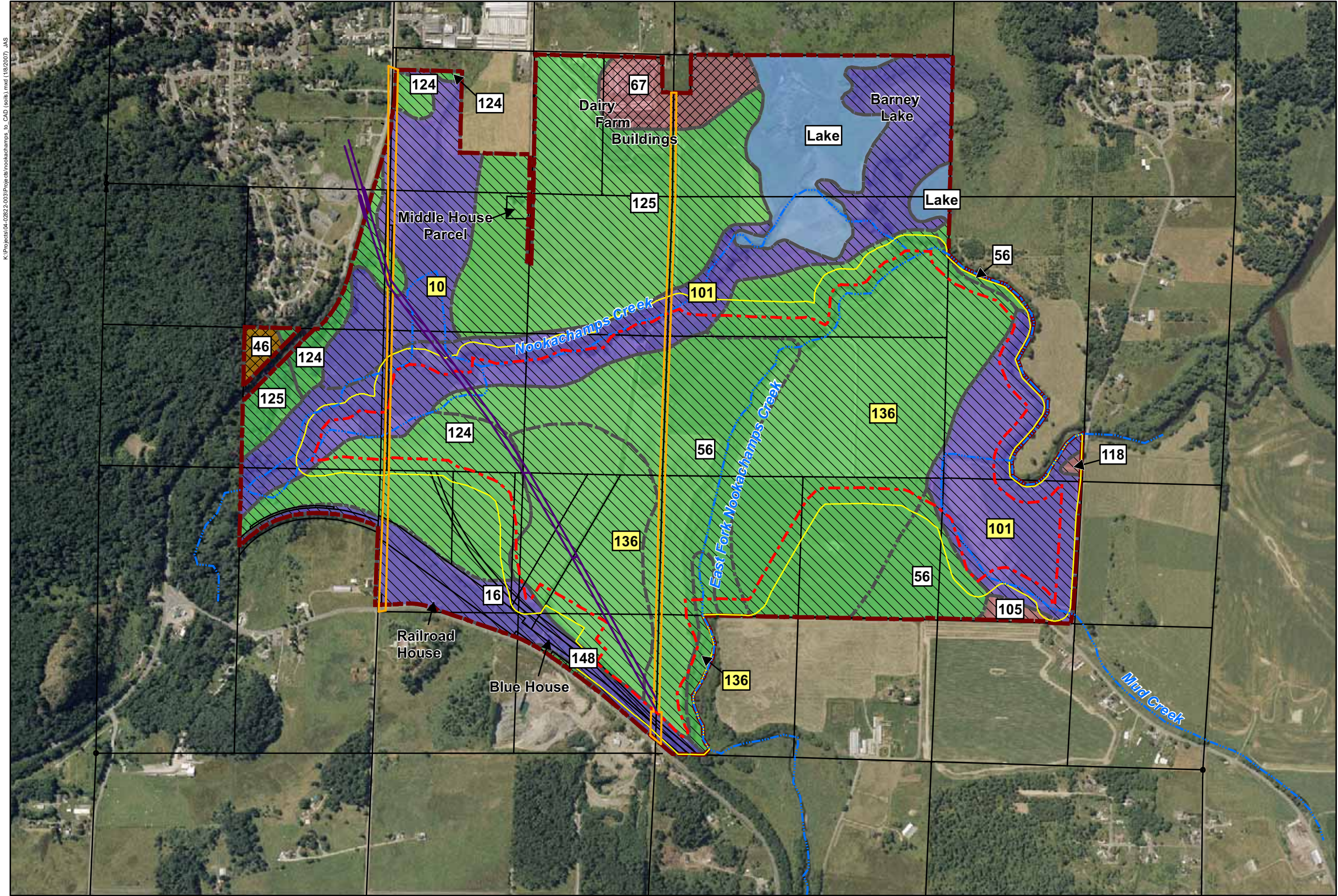
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ATTACHMENT J

Updated HEC-RAS Cross Section Locations



Attachment B. 1941 National Resource Conservation Service.



Legend :

- Stream
- Water line easement
- Power line easement
- Wetland mitigation bank buffer boundary
- Clear Valley Farm property boundary
- Edge of buffer
- Parcel boundary
- Soil map unit

Soil capability class

- Lake
- 3
- 4
- 6
- 7

Soil capability subclass

- E (erosion problems)
- W (wetness problems)
- Hydric soil

Soils Data Source: NRCS 2005

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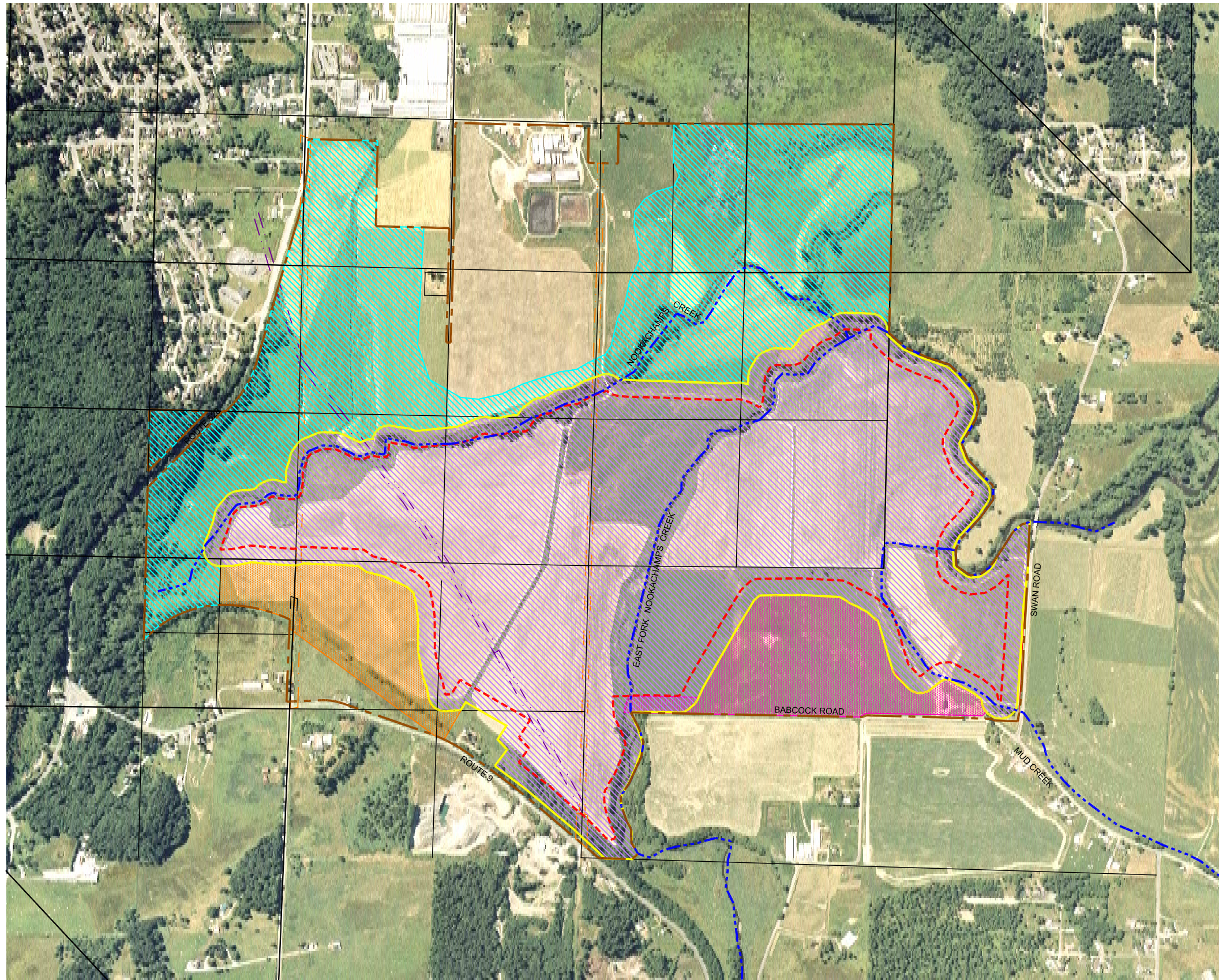
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**SKAGIT ENVIRONMENTAL
BANK
FARMLAND SOIL MAP**

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| DATE: | NOVEMBER 2007 |
| PROJECT NO: | 04-02822-003 |
| DRAWING NO: | ATTACHMENT C |
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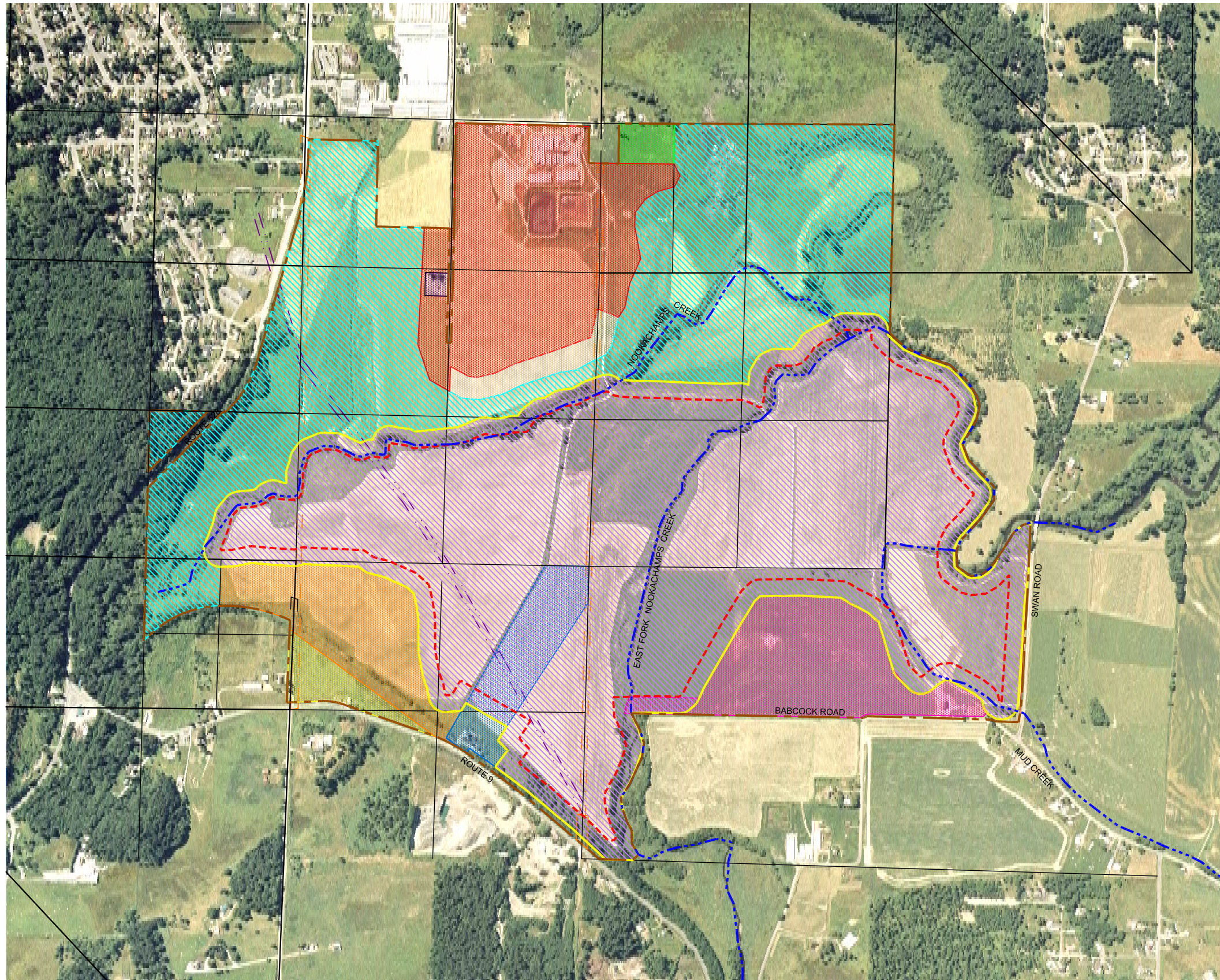
Legend:

| | |
|--|---|
| | Stream |
| | Parcel boundary |
| | Water line easement |
| | Power line easement |
| | Original Clear Valley Farm property boundary |
| | Edge of buffer |
| | Mitigation bank boundary |
| | Red barn property (42.7 acres) |
| | 33 acre property (33.1 acres) |
| | Possible Skagit Land Trust property (222.0 acres) |
| | Skagit Environmental Bank (396.0 acres) |



Attachment D, Figure 1. Properties currently owned by Clear Valley Environmental Farm, LLC and Clear Valley Environmental Farm, Inc.

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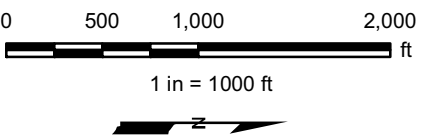
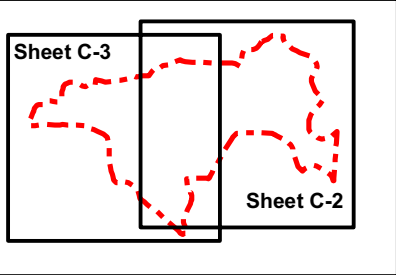
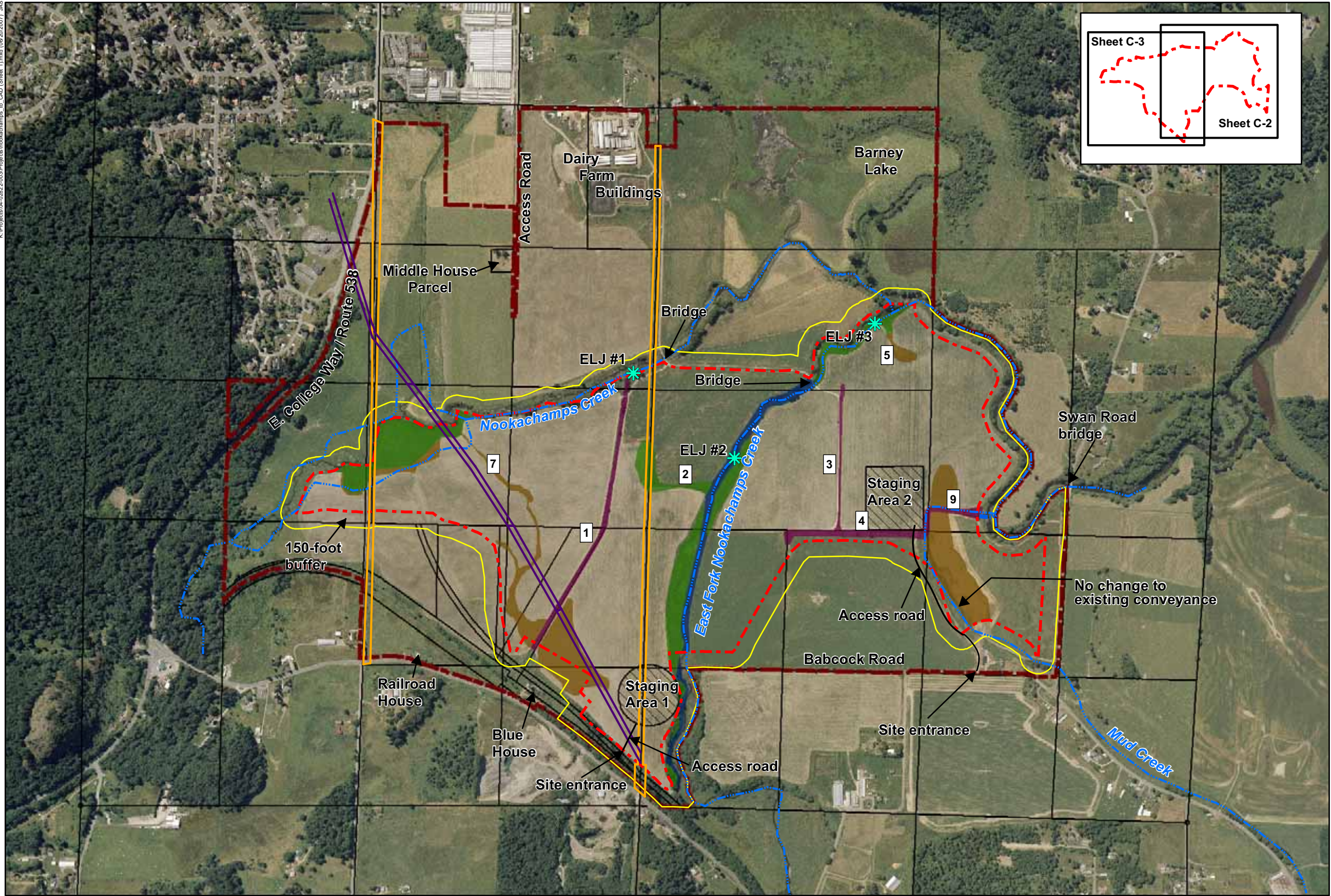
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|--|--|
| | Stream |
| | Parcel boundary |
| | Water line easement |
| | Power line easement |
| | Original Clear Valley Farm property boundary |
| | Edge of buffer |
| | Mitigation bank boundary |
| | Korthuis property* (4.2 acres) |
| | Knoll property* (82.8 acres) |
| | Knoll Apron property* (8.0 acres) |
| | Middle house property* (1.0 acres) |
| | Red barn property (42.7 acres) |
| | 33 acre property (33.1 acres) |
| | Railroad house property* (8.6 acres) |
| | Blue house property* (20.2 acres) |
| | Possible Skagit Land Trust property (222.0 acres) |
| | Skagit Environmental Bank (396.0 acres) |

* Properties have been sold and are no longer owned by Clear Valley Environmental, Inc.



Attachment D, Figure 2. Purchased, sold, and intended future uses of the Skagit Environmental Bank and surrounding properties.

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- Legend :**
- 1 Ditch number
 - ELJ - Grade control structure
 - Cross-section location
 - Staging area
 - Stream
 - Waterline easement
 - Powerline easement
 - Mitigation bank boundary
 - Clear Valley Farm property boundary
 - Edge of buffer
 - Parcel boundary
- Existing wetlands**
- Palustrine: persistent
 - Palustrine: non-persistent and plowed
 - Palustrine: ditch
 - Riverine

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| 3 | REVISION NO. 3 | MM | MS | 07/07 |
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| DESIGNED: | DRAWN: |
| DESIGNED: | CHECKED: M. MERKELBACH |
| DESIGNED: | APPROVED: M. SPILLANE |

SKAGIT ENVIRONMENTAL
BANK
PHASE I
EXISTING CONDITIONS
AND PROPOSED STRUCTURES


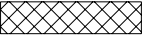

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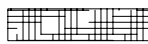

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NOTE:

1. THE AREA BETWEEN THE PROJECT SITE AND MITIGATION BANK BOUNDARY CONSISTS OF A 150 FOOT BUFFER ALONG THE ENTIRE SITE.
2. FOREST MOSAIC WETLAND CONTAINS UPLAND ISLANDS (21ACRES) THAT REPRESENT 20 PERCENT OF THE TOTAL FOREST WETLAND MOSAIC AREA.

LEGEND

- ◄—◄— STREAM
— — — — — HIGH FLOW BACK CHANNEL CENTERLINE
— — — — — CLEAR VALLEY FARM PROPERTY BOUNDARY
— — — — — PROJECT SITE
- - - - - MITIGATION BANK BOUNDARY
- - - - - EXISTING UTILITY EASEMENT
-  PROPOSED SHRUB WETLAND HUMMOCKS
 EMERGENT WETLANDS
 SHRUB WETLANDS

-  FOREST MOSAIC WETLANDS
 UPLAND
 PROPOSED ELJ

DRAFT DESIGN

| COMMUNITY TYPE | AREA (AC) | PERCENT OF BANK |
|-----------------------|-----------|-----------------|
| EMERGENT WETLAND | 53 | 17% |
| SHRUB WETLAND | 81 | 26% |
| FOREST MOSAIC WETLAND | 105 | 34% |
| UPLAND | 60 | 19% |



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| DESIGNED: C. ELLIOT | DRAWN: - |
| DESIGNED: - | CHECKED: M. MERKELBACH |
| SCALE: AS NOTED | APPROVED: M. SPILLANE |

SKAGIT ENVIRONMENTAL BANK

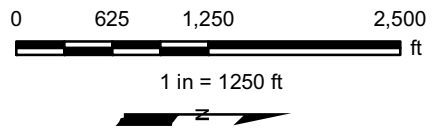
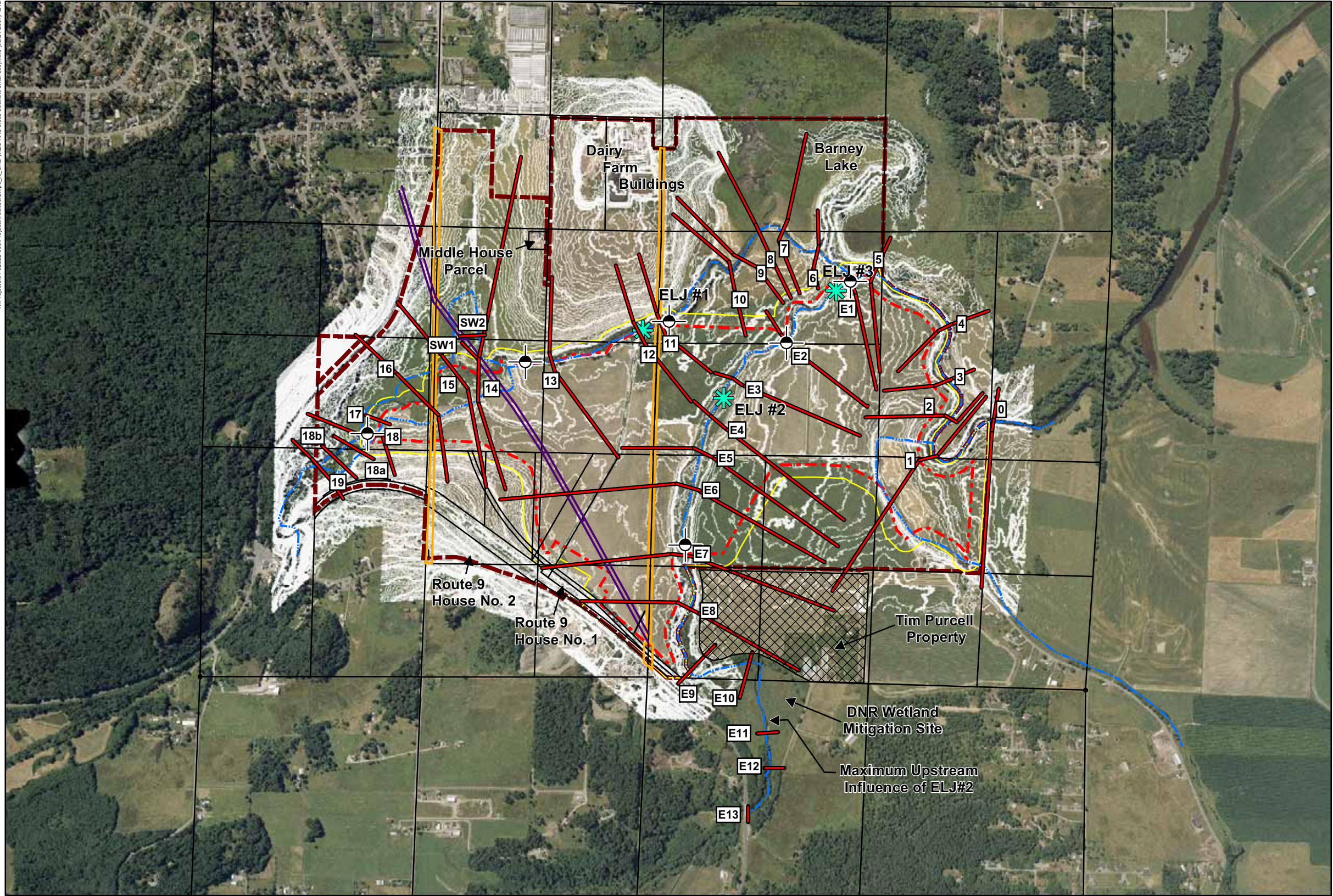
PROPOSED PLANTING PLAN

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Legend :

- Proposed Engineered logjam (ELJ)
- Stream
- Water line easement
- Power line easement
- Mitigation bank boundary
- Clear Valley Farm property boundary
- Edge of buffer
- Parcel boundary
- Stream gage
- HEC-RAS cross-section location
- 10-foot contours
- 1 foot contours

Notes:
1. Updated hydraulic analysis is found in the Skagit Environmental Bank Response to Skagit County on Public Comments (2007).

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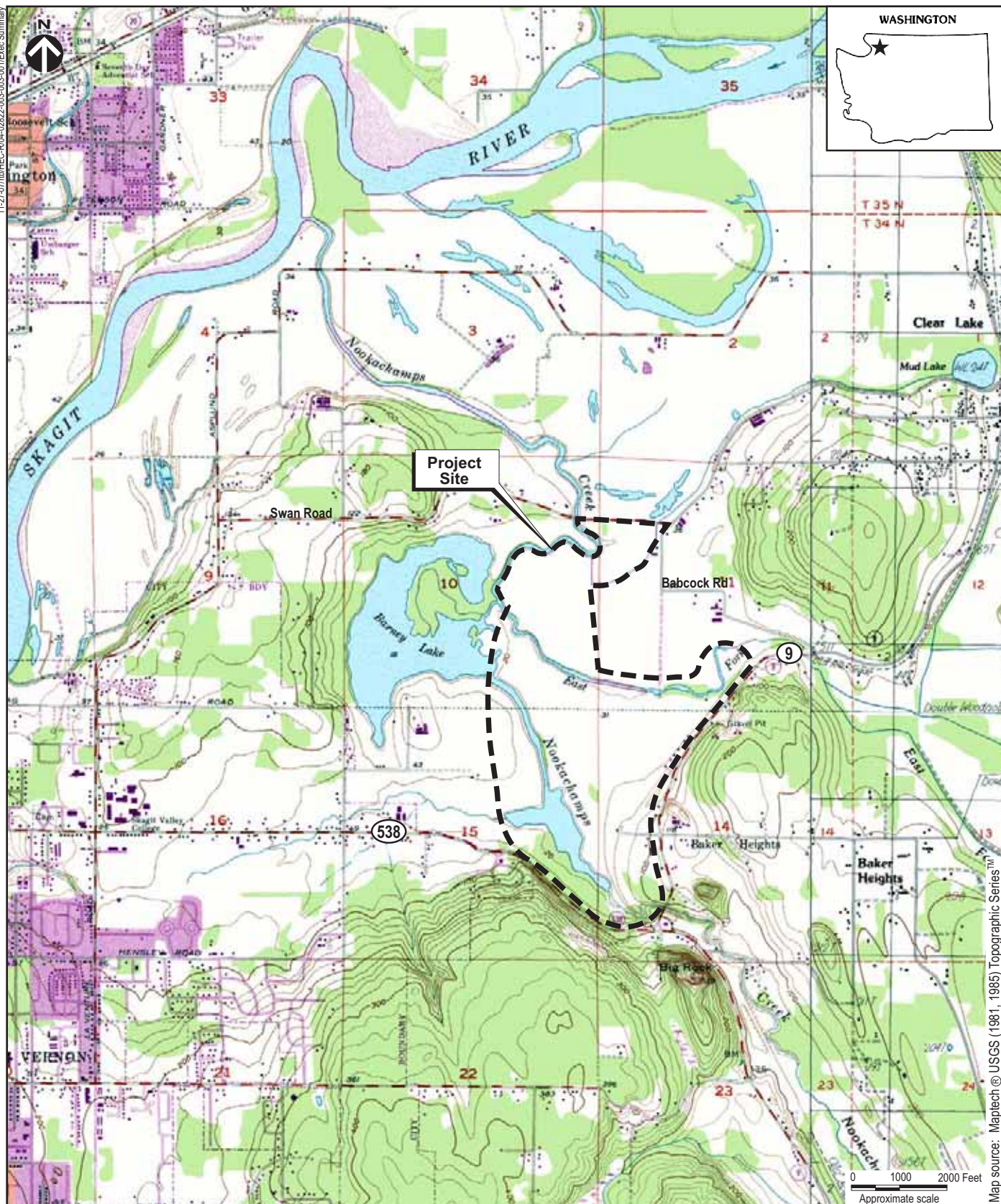


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| DESIGNED: | DRAWN: |
| DESIGNED: | CHECKED: |
| | M. MERKELBACH |
| DESIGNED: | APPROVED: |
| | M. SPILLANE |

**SKAGIT ENVIRONMENTAL
BANK**
**UPDATED HEC-RAS CROSS-
SECTION LOCATIONS**

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| SHEET NO: |



Prepared by:



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Date: 27 November 2007

PROJECT VICINITY MAP

Application for:

SKAGIT ENVIRONMENTAL BANK
SKAGIT COUNTY, WASHINGTON

Applicant:

CLEAR VALLEY
ENVIRONMENTAL FARM, LLC

SCALE see above

Attachment A