

MITIGATION BANKING INSTRUMENT

Chehalis Basin Mitigation Bank, Hanaford Valley Site

This Mitigation Banking Instrument regarding the establishment, use, operation, and maintenance of the Chehalis Basin Mitigation Bank, Hanaford Valley site (hereinafter, the “Bank”), is made and entered into by and among WCEI Chehalis MB, LLC (hereinafter, the “Sponsor”), the U.S. Army Corps of Engineers (the “Corps”), and the Washington State Department of Ecology (“Ecology”) with reference to the following:

I. PREAMBLE

A. Purpose: The purpose of this Mitigation Banking Instrument (hereinafter, the “Instrument”) is to specify responsibilities for the establishment, use, operation, and maintenance of the Bank. It consists of this “Basic Agreement” establishing the central obligations assumed and consideration provided by each Party, as well as Appendices (hereinafter, the “Appendices”) that establish the detailed Bank implementation plan, including site-specific conditions, standards, and procedural requirements applicable to the Bank. The terms and provisions of the Appendices will be incorporated into the Instrument. The Bank will provide compensatory mitigation for unavoidable adverse impacts to waters of the United States and waters of the State, including wetlands, and to aquatic habitat including habitat for endangered and threatened species, that result from activities authorized by Federal, State, and local authorities, when use of the Bank has been specifically approved by the appropriate regulatory agencies.

B. Location and Ownership of Parcel: The Bank is located in the Hanaford Valley west of the Centralia Steam Plant in Lewis and Thurston Counties, in the floodplain of Big Hanaford Creek, a tributary to the Skookumchuck River, within Upper Chehalis Basin (WRIA 23) (Figure A-1 Vicinity Map). This 176.97 acre site includes 10 Lewis County parcels: numbers, 023428000000, 023434002010, 023434002014, 023434002011, 023434002007, 023432003003, 023439001001, 023438001000, 023431000000, and 023436000000; and 1 Thurston County parcel: 12523440000. All parcels are owned by TransAlta Centralia Mining, LLC (hereinafter, “TCM”). The legal location of the bank is Sections 23, 25, and 26 of Township 15 North, Range 2 West.

C. Project Description: Whereas, the Sponsor has expressed intent to restore, rehabilitate, create, and/or enhance approximately 176.97 acres divided into a north unit, northeast unit, south unit, and west unit of aquatic and associated upland habitat in accordance with the provisions of this Instrument, and shall then maintain the Bank in accordance with the provisions of this Instrument. Table 1 summarizes project actions, acreage, and credit generation. The Bank will utilize ratios consistent with WAC 173-700 to determine credit generation. The Bank is projected to, among other purposes, to provide habitats as shown in the table that follows and as detailed in Appendix A and Appendix B. Mitigation actions and associated acreages are described in Appendix D and shown on figure D-1.

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Table 1. Project actions, acreages, and credit generation.

Bank Activity	Mitigation Actions	Affected Area (acres)	Credit Ratio (Activity Area: Universal Credit)	Anticipated Number of Credits
Restoration	Grade artificial uplands to wetland elevations, restore vegetation	0.72	1:1	0.72
Sediment Pond Rehabilitation	Depressions graded to typical floodplain topography, restore vegetation	10.52	2:1	5.26
Wetland Rehabilitation	Re-route ditched streams into geomorphically appropriate channels; restore native vegetation.	8.44	2:1	4.22
Floodplain Rehabilitation	Fill ditches to complete floodplain rehab started with BHC, restore vegetation	46.02	2.5:1	18.41
Enhancement	Restore vegetation in rehabilitated floodplain	67.08	3:1	22.03
Emergent Enhancement	Selectively restore vegetation and protect existing native species	4.89	4:1	1.22
Wetland Preservation	Preserve existing forested wetlands and compliment with rehabilitation	16.11	5:1	3.22
Upland Preservation	Preserve existing forested uplands as part of wetland/upland mosaic	1.65	5:1	0.33
Upland Buffer	Restore upland buffer vegetation	3.08	10:1	0.31
Utility Corridor	Restore native vegetation	16.78	N/A	0.00
Roads/Railroads	Occurring within mitigation bank	2.68	N/A	0.00
Total				55.72

3 **Bank Overview:**

4 The purpose of the Bank is to restore wetland and floodplain functionality, as well as to establish
 5 a healthy native vegetation community. Historically, the Bank has been utilized for some
 6 agricultural use, such as hay production. Additionally, the Bank surrounds 149.77 acres of

1 successful wetland, riparian, and stream restoration on Big Hanaford Creek, which will be
2 monitored and maintained concurrently with the bank by the Sponsor. The composite
3 environmental benefit is realized through habitat continuity across the valley bottom to the
4 forested ridges and the bank and existing restoration project synergy. A multitude of wildlife are
5 known to populate the site, including elk, cougar, and waterfowl.
6

7 The Bank will preserve high quality forested wetlands, restore, rehabilitate and enhance
8 degraded wetlands, and improve habitat, water quality, and hydrologic functions in the valley
9 bottom project that would span Hanaford Valley near the Centralia Steam Plant. Typical wetland
10 hydrologic conditions will be restored by filling agricultural ditches and leveling pond berms,
11 while maintaining positive drainage.

12
13 Most of the Bank is now vegetated by pasture grasses and weeds typical of seasonal wetlands in
14 western Washington. The western portions of the Bank are vegetated with mature Oregon ash
15 wetland forest preserved as part of the Bank. The wetlands originally developed as riverine
16 forested, scrub-shrub, and emergent ecosystems prior to being converted to agricultural lands.
17 The hydrologic conditions of the Bank will be wetter as a result of more frequent flooding at the
18 adjacent Big Hanaford Creek mitigation site. Big Hanaford Creek floods are low velocity due to
19 the flat topography of the Hanaford, Skookumchuck, and Chehalis Basins. The inflow typically
20 occurs from late October until mid May. Outflows from the abandoned pond occur in three
21 places from openings in the dike, flowing eventually into Big Hanaford Creek. The Natural
22 Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2007) maps the greater
23 portion of the Hanaford Creek floodplain as the very deep, poorly drained Godfrey and Reed
24 series silty clay loams, both of which are hydric soils (Appendix B).

25 Existing functions are degraded due to ditching and straightening of Big Hanaford Creek (which
26 was restored in 2007), and introduction of invasive vegetation through grazing and haying
27 practices. Existing functions and anticipated functional lift are discussed in detail in Appendix A.
28

29 The goals of the Bank are:

- 30 • Improve hydrologic, water quality, and habitat functions in the mitigation bank site; and
 - 31 • Provide a self-sustaining wetland and stream complex that will not require maintenance.
- 32

1 **Interagency Review Team:**

2 Whereas, in consideration of the establishment and maintenance of the Bank, the Interagency
3 Review Team (IRT) is willing to award credits in accordance with the procedures outlined in this
4 Instrument. These credits will be made available to serve as compensatory mitigation pursuant to
5 applicable Federal and Washington State laws and regulations. The Corps and Ecology serve as
6 Co-chairs of the IRT. The IRT is the group of Federal, State, tribal, and local agencies that has
7 reviewed, and will advise the Co-chairs regarding, the establishment and management of the
8 Bank pursuant to the provisions of the Instrument.

9 NOW, THEREFORE, the Parties agree to the following:

10 **II. LEGAL AUTHORITIES**

11 **A. Authorities.** The establishment, use, operation, and maintenance of the Bank shall be
12 carried out in accordance with the following principal authorities.

13 1. Federal:

- 14 a. Clean Water Act (33 USC §§ 1251 et seq.)
- 15 b. Rivers and Harbors Act of 1899 (33 USC § 403)
- 16 c. Regulatory Programs of the Corps of Engineers, Final Rule (33 CFR Parts 320-332)
- 17 d. U.S. Army Corps of Engineers Regulatory Guidance Letter 05-1, *Guidance on Use of*
18 *Financial Assurances, and Suggested Language for Special Conditions for*
19 *Department of the Army Permits Requiring Performance Bonds*, U.S. Army Corps of
20 Engineers, February 14, 2005
- 21 e. Guidelines for the Specification of Disposal Sites for Dredged and Fill Material
22 (“404(b)(1) Guidelines,” 40 CFR Part 230)
- 23 f. National Environmental Policy Act (42 USC §§ 4321 et seq.)
- 24 g. Council on Environmental Quality Procedures for Implementing the National
25 Environmental Policy Act (40 CFR Parts 1500-1508)
- 26 h. Executive Order 11990 (Protection of Wetlands)
- 27 i. Executive Order 11988 (Protection of Floodplains)
- 28 j. Executive Order 13112 (Invasive Species)
- 29 k. Fish and Wildlife Coordination Act (16 USC §§ 661 et seq.)
- 30 l. Fish and Wildlife Service Mitigation Policy (46 FR 7644-7663, 1981)
- 31 m. Endangered Species Act (16 USC §§ 1531 et seq.)
- 32 n. Magnuson-Stevens Fishery Conservation and Management Act (16 USC §§ 1801 et
33 seq.)
- 34 o. National Historic Preservation Act, as amended (16 USC § 470)

35 2. State of Washington:

- 36 a. Washington Water Pollution Control Act, RCW 90.48 et seq.
- 37 b. State of Washington Wetlands Mitigation Banking Statute (RCW 90.84)
- 38 c. Washington State Rule on Wetland Mitigation Banking (WAC 173-700, Wetland
39 Mitigation Banks)
- 40 d. Washington State Environmental Policy Act (“SEPA” RCW 43.21C and WAC 197-
41 11)

- e. Growth Management Act (RCW 36.70A) and Critical Areas Regulations “Best Available Science” compliance WAC 365-195-900 to 925)
- f. Washington State Hydraulic Code (RCW 77.55, WAC 220-110, and Hydraulic Permit Approval)
- g. Washington State Shoreline Management Act (RCW 90.58, WAC 173-27 as amended)
- h. Washington State Salmon Recovery Act (RCW 77.85)
- i. Washington State Aquatic Resources Act (RCW 79.90, RCW 90.74)
- j. Executive orders 89-10 and 90-04, Protection of Wetlands.

10 III. ESTABLISHMENT OF THE BANK

11 **A. Permits.** The Sponsor shall obtain all appropriate environmental documentation, permits,
12 and other authorizations needed to establish and maintain the Bank as a condition of constructing
13 the Bank. Compliance with this Instrument does not fulfill the requirement, or substitute, for
14 such authorization. Local authorizations and permits include, but are not limited to, Lewis
15 County approvals, permits, and authorizations issued under the statutory and regulatory
16 provisions listed in the Appendices of this Instrument.

17 **B. Bank Establishment.** The Sponsor agrees to establish the Bank as described in
18 Appendix B and to satisfactorily accomplish all performance standards reflected in Appendix C.
19 In recognition thereof, credits will be awarded to the Sponsor in accordance with the procedures
20 and schedules prescribed in the Appendices, particularly in Appendices C and D. In establishing
21 the Bank, deviations from the prescribed bank development plan and design, including
22 deviations from any performance standards, may only be made with the prior approval of the
23 Corps and Ecology, following consultation with the IRT. To propose modifications to the bank
24 development plan, the Sponsor shall submit a written request to the Corps and Ecology.
25 Documentation of implemented modifications shall be made consistent with Article VI.B.2 of
26 this Instrument. The establishment period of the Bank is defined in Article IV.K.

27 **C. Financial Assurance Requirements.** The Sponsor agrees to provide the following
28 financial assurances for the work described in this Instrument.

29 1. The Sponsor shall furnish either a Surety Bond or Casualty Insurance to provide financial
30 assurance underlying the establishment and initial functionality of the Bank. This Surety Bond
31 or Casualty Insurance policy must be initiated by the Sponsor, in a form and content approved by
32 the Corps and Ecology, and shall conform to the requirements of Appendix H, before any
33 construction or implementation activities may be conducted on-site during the establishment
34 period of the Bank, as defined in Article IV.K and prior to the award of any Bank credits. Any
35 construction or implementation activities conducted on-site prior to the inception of the
36 establishment period must cease as of the effective date of this Instrument pursuant to Article
37 VI.B.1, until an approved Surety Bond or Casualty Insurance policy is initiated. The initial
38 award of credits in recognition of accomplishment of the performance standards under Objective
39 1, pursuant to Section D.1.2.A of Appendix D, will serve as the IRT’s notification that
40 construction and implementation activities are authorized to commence. The Corps and Ecology
41 must specifically approve all terms and conditions of the Surety Bond or Casualty Insurance, as
42 well as the identity of the financial institution issuing and underwriting the Surety Bond or
43 Casualty Insurance policy. If Casualty Insurance is used, the Insurance Company must have an

1 adequate financial rating from a reputable financial rating firm (e.g. A.M. Best, Fitch, Moody's,
2 or Standard and Poor's), must be legally qualified to issue insurance in the State of Washington
3 and must not be legally or financially affiliated with the Sponsor and must be in compliance with
4 Corps Guidance dated 12/1/2011.

5 a. The Corps and/or Ecology, acting independently or in concert, may approve
6 disbursement from the payment of the penal sum on a Surety Bond, or as applicable
7 approve claims adjustment, under the following circumstances: upon abandonment
8 of Bank establishment efforts, or any failure stemming from any cause to achieve any
9 of the Bank Objectives or Performance Standards as reflected in Section C.1.2 of
10 Appendix C, including, but not limited to, deficient design, ineffective establishment,
11 deterioration of functionality or performance, or financial limitations of the Sponsor.
12 Ninety calendar days prior to requiring payment of the penal sum on a Surety Bond,
13 or 90 days prior to presenting a claim under a Casualty Insurance policy, the Corps
14 and/or Ecology shall approve specific and express written direction for corrective
15 action to the Sponsor in accordance with Article IV.H of this Instrument and Section
16 F.1.4 of Appendix F. If, within 90 days of delivery of notice of the demand for
17 corrective action, the Sponsor has initiated compliance efforts and the Corps and/or
18 Ecology have determined, in their sole discretion, that substantial progress has been
19 made toward completion of corrective action, the Corps and/or Ecology will defer
20 requiring payment on the Surety Bond or presenting a claim under Casualty Insurance
21 as applicable.

22 b. Following consultation with the IRT, the Corps and/or Ecology may require
23 payment on the Surety Bond or present a claim under the Casualty Insurance as
24 applicable, to accomplish any of the following objectives or features of the Bank:
25 construction, establishment, monitoring, maintenance, or adaptive management
26 activities reflected in, or directly supporting accomplishment of, the Objectives and
27 Performance Standards reflected in Section C.1.2 of Appendix C. The Corps and/or
28 Ecology may elect, following consultation with the IRT, to accomplish all of the
29 Objectives and Performance Standards reflected in Section C.1.2 of Appendix C and
30 for which the Sponsor has assumed responsibility under Article III.B of this
31 Instrument. In lieu of accomplishing all Objectives and Performance Standards in
32 Section C.1.2 of Appendix C, the Corps and/or Ecology, in their sole discretion,
33 following consultation with the other members of the IRT, may accomplish only that
34 component or those components of the Objectives and Performance Standards that
35 are deemed reasonably necessary to achieve a project that is stable, self-sustaining,
36 and provides a level of general benefit to the aquatic resources of the watershed that
37 the Corps and/or Ecology deem appropriate under the circumstances. Corrective or
38 remedial actions determined to be necessary will be accomplished through a Third
39 Party Designee approved by the Corps and/or Ecology.

40 c. Any Surety Bond shall take the general form of an indemnity contract in a sum
41 certain obliging the surety to pay the full face value of the bond to the beneficiaries in
42 the event that the Corps and/or Ecology declare that the principal has failed to fulfill
43 the obligations established in this Instrument. Any Casualty Insurance policy shall
44 take the form of insurance to support the compensatory mitigation obligation

1 assumed. A Surety Bond or Casualty Insurance policy, as applicable, shall be
2 furnished to guarantee the establishment activities of the Bank, in the following
3 amount:

4 (i) \$ 375,000 - \$ 425,000

5 d. Upon certification by the IRT that the following performance standards, as
6 prescribed in Table D-2 of Appendix D have been achieved, the Corps and/or
7 Ecology will authorize in writing that the required amount of the required penal sum
8 of the Surety Bond, or the limit of the Casualty Insurance as applicable, be modified
9 as follows:

10 (i) Following submission to, and approval by the IRT of the as-built reports
11 reflecting completion of grading and planting for the site, the required Surety
12 Bond or Casualty Insurance policy amount will be \$ 100,000 – \$ 125,000. The
13 difference, commensurate with the value of construction, of the Bank will be
14 released within thirty days of application for release by the Sponsor;

15 (ii) Following substantial achievement Year 3 performance standards, the
16 required Surety Bond or Casualty Insurance policy amount will be \$ 75,000 – \$
17 100,000;

18 (iii) Following substantial achievement of Year 5 performance standards, the
19 required Surety Bond amount or Casualty Insurance limit will be \$ 50,000 - \$
20 75,000;

21 (iv) Following substantial achievement Year 7 performance standards, the
22 required Surety Bond amount or Casualty Insurance Limit will be \$ 25,000 - \$
23 50,000;

24 (v) Following the Operational Life of the Bank, as described in Article IV.L,
25 the Surety Bond or Casualty Insurance policy shall be released.
26

27 e. The Corps and Ecology will waive their right to payment under, and authorize
28 rescission or cancellation of, the financial assurance instrument upon satisfaction of
29 all Objectives and Performance Standards required in Appendix C, and upon a
30 determination by the Corps and Ecology that the Sponsor has completed the
31 following:

32 (i) The Sponsor has satisfied the additional requirements reflected in Article
33 IV.K of this Instrument for termination of the establishment period of the Bank;
34 or

35 (ii) The Sponsor has been awarded all credits, or the Corps and Ecology have
36 approved the Sponsor's request to permanently cease banking activities.

1 f. Notwithstanding the fact that the financial assurance may have been accessed or
2 that payment upon that financial assurance may have been required and full or partial
3 remedial or corrective action may have been taken by the Third Party Designee,
4 unless this Instrument is terminated pursuant to Article IV.J or VI.B. The Sponsor
5 shall remain responsible for the timely and effective achievement of all the Objectives
6 and Performance Standards mandated in Section C.1.2 of Appendix C.

7 g. Alternatively, the Sponsor may request, and the Corps and Ecology may approve
8 a substitute financial assurance instrument for any of the financial assurances required
9 under this Instrument. The form and content of any financial assurance instrument
10 must be specifically approved before a substitution is utilized in satisfaction of the
11 financial assurance obligations during the establishment period of the Bank. The
12 Corps and Ecology must specifically approve the identity of the financial institution
13 issuing and underwriting the financial assurance instrument. The provisions of the
14 substitute financial assurance instrument must conform to each of the material
15 requirements of this Article III.C.1, as well as Appendix H, within this Instrument. In
16 particular, the provisions of the substitute financial assurance instrument must
17 designate the Corps and Ecology as distinct and independent beneficiaries, and must
18 expressly authorize either the Corps or Ecology to independently access and direct
19 either partial or full disbursement of funds secured by that instrument consistent with
20 the other provisions within Article III.C.1. Each financial assurance instrument will
21 provide that the issuing financial institution shall honor the credit engagement or
22 other assurance and pay to the Third Party Designee the directed sum without
23 inquiring whether the directing Beneficiary agency or the receiving Third Party
24 Designee has a right to make such a demand. Furthermore, the Sponsor must waive
25 any and all opportunity to challenge or delay any such access or disbursement.
26 Additionally, the substitute financial assurance must extend for the full period of time
27 that the financial assurance it replaces must extend, and may be terminated only at the
28 written direction of both the Corps and Ecology. The replacement financial assurance
29 instrument must be instituted so that there is no portion of the establishment period,
30 following initiation of construction or other implementation activities, during which
31 there is no financial assurance in effect. No further credits will be awarded from the
32 Bank while the Bank lacks an effective financial assurance instrument.

33 **2. Long Term Management and Maintenance Endowment Fund**

34 a. The Sponsor shall institute an endowment fund, established and maintained
35 through an escrow account, to fund management and maintenance actions as defined
36 in Article IV.M.1 of this Instrument and Section G.1.2 of Appendix G, following the
37 termination of the establishment period of the Bank. This long term management and
38 maintenance endowment fund (“Fund”) shall be incrementally funded throughout the
39 establishment period of the Bank, with the funds disbursed to a long term steward
40 (“Steward”) upon the Sponsor’s relinquishment of responsibility for long term
41 maintenance and management of the Bank. The Sponsor agrees to continue to deposit
42 funds in the Fund escrow account, pursuant to Article III.C.2.b of this Instrument,
43 until the Fund is fully funded in accordance with Article III.C.2.c of this Instrument.

1 b. The Fund escrow account shall be funded through the establishment period of the
2 Bank by depositing a designated sum corresponding to each sale or transfer of
3 mitigation credits, or use of credits by the Sponsor as compensatory mitigation for its
4 own activities causing adverse impacts to the aquatic environment. This designated
5 sum shall be \$1,000 per credit sold, used, or transferred. Deposits to the Fund must be
6 completed within 30 days of the sale, use, or transfer transaction. The Corps and
7 Ecology must specifically approve the identity of the institution in which the escrow
8 account is established, as well as the form of that account. Approval of the identity of
9 the financial institution at which the escrow account is established, and the form of
10 the investment account, shall not be unreasonably withheld.

11 c. The Fund shall be considered to be fully funded when the total value of the
12 escrow account, including the principal amounts deposited and earnings, has
13 accumulated to a total of \$30,000.

14 d. The Sponsor shall enter into an escrow agreement with both the Corps and/or
15 Ecology conforming to the requirements of Section H.1.2 of Appendix H. The escrow
16 agreement for the Fund shall be signed prior to the release of any credits of the Bank.

17 e. Upon receipt of written instructions signed by the Sponsor, Corps, and Ecology,
18 the Fund escrow account shall be terminated and all funds disbursed pursuant to the
19 instructions of the Corps and Ecology.

20 **D. Real Estate Provisions.** All real property in the Bank is owned by TransAlta Centralia
21 Mining, LLC (“TCM”). The Sponsor is responsible for ensuring the landowners burden the title
22 to their real property upon which the Bank is located, through grants of conservation easements,
23 pursuant to the provisions of Section G.1.1 of Appendix G. The conservation easements must be
24 approved, initiated, and recorded pursuant to Section G.1.1 of Appendix G prior to the award of
25 any bank credits and before any construction or implementation activities may be conducted on
26 site during the Bank establishment period as defined in Article IV.K. Any construction or
27 implementation activities conducted on site prior to the inception of the establishment period
28 must cease as of the effective date of the Instrument pursuant to Article VI.B.1, until approved
29 conservation easements are recorded. The initial award of credits in recognition of
30 accomplishment of the performance standards pursuant to Section D.1.2.A of Appendix D will
31 serve as the IRT’s notification that construction and implementation activities are authorized to
32 commence.

33 **IV. OPERATION OF THE BANK**

34 **A. Service Area.** The Bank is approved to provide compensatory mitigation for impacts to
35 the Waters of the United States and waters of the State, including wetlands, within the Service
36 Area. A detailed description and maps of the Service Area are included in Appendix E.

37 1. The Service Area for the Bank is Water Resources Inventory Area 23 (WRIA 23),
38 “Upper Chehalis Basin”.

1 **B. Access to the Bank.** The Sponsor will allow, or otherwise provide for, access to the Bank
2 by members of the IRT or their agents or designees, as reasonably necessary for the purpose of
3 inspection, compliance monitoring, and remediation consistent with the terms and conditions of
4 this Instrument and the Appendices, throughout the periods of Bank establishment, operation,
5 and long term management and maintenance. Inspecting parties shall provide the Sponsor 24
6 hours prior notice of a scheduled inspection, and shall not unreasonably disrupt or disturb
7 activities on the property.

8 **C. Availability and Sale, Transfer, or Use of Credits.**

9 **1. Availability and Sale, Transfer, or Use of Credits.** Subject to the
10 documentation and scheduling provisions of Appendix D, the Sponsor may submit to the
11 IRT written evidence that particular performance standards have been achieved. If the
12 Corps and Ecology, after consulting with the other members of the IRT and the Sponsor,
13 concur that certain performance standards have been achieved in full, the Corps and
14 Ecology will respond in writing to the Sponsor that the credits associated with those
15 performance standards are available for sale, transfer, or use by the Sponsor as
16 compensatory mitigation for its own activities causing adverse impacts to the aquatic
17 environment. Each instance of sale or any other transfer of credits to a third party shall be
18 reflected in a transaction agreement. Each agreement that is associated with a permit must
19 indicate the permit number of the impacting project, the number of universal credits
20 transferred, and must expressly specify that the Sponsor, and its successors and assigns
21 assumes responsibility for accomplishment and maintenance of the
22 purchaser's/user's/transferee's compensatory mitigation requirements associated with the
23 impacting project, upon completion of the credit transfer.

24 **2. Availability of Credits in the Event Financial Assurances are Accessed.** In the
25 event the Corps and/or Ecology, acting pursuant to Articles III.C.1.a and Articles
26 III.C.1.b of this Instrument, accesses the Financial Assurances established pursuant to
27 Article III.C.1 of this Instrument and accomplishes any objectives, performance
28 standards, or features of the Bank, the Corps and Ecology, in consultation with the other
29 members of the IRT, may award credits for sale, use, or transfer by the Sponsor, in a
30 quantity reflecting the objectives and performance standards achieved as a result of such
31 remedial action.

32 **D. Credit Deficit or Fraudulent Transactions.** If the Corps and/or Ecology determine at
33 any point that the Bank is operating without prior written approval at a deficit, or has engaged in
34 fraudulent transactions in the sale, use, or other transfer of credits, the Corps and/or Ecology will
35 cease award of, and will direct the Sponsor to immediately cease sale, use, or other transfer of
36 credits. The Co-Chairs will determine, in consultation with the IRT and the Sponsor, what
37 remedial actions are necessary to correct the situation and will direct their performance prior to
38 the award of any additional mitigation credits.

39 **E. Provisions for Use of the Mitigation Bank Area.** The Corps and/or Ecology may
40 consider the Sponsor as being in material default of a provision of this Instrument and proceed

1 accordingly under Article IV.J, should the Corps and/or Ecology, in consultation with the IRT,
2 determine that either of the following has occurred:

3 1. The grant of additional easements, rights of way, or any other property interest in
4 Bank areas without written consent of the Corps and Ecology, in consultation with the
5 IRT.

6 2. The use or authorization of the use of any areas within the Bank for any purpose
7 that is contrary to the provisions of this Instrument, the conservation easement or the
8 Assignment, or which interferes with the conservation purposes of the Bank.

9 **F. Maintenance Provisions.** Following achievement of the performance standards, the
10 Sponsor agrees to perform all necessary work to maintain those standards as prescribed in
11 Section F.1.5 of Appendix F.

12 **G. Monitoring Provisions.** The Sponsor agrees to perform all necessary work, pursuant to
13 Section F.1.2 of Appendix F, to monitor the Bank during the establishment period to demonstrate
14 compliance with the performance standards established in Appendix C.

15 **H. Contingency Plans/Remedial Actions.** In the event the Bank fails to achieve, within the
16 specified time schedule, one or more of the performance standards delineated in Appendix C, the
17 Sponsor shall develop necessary contingency plans and implement appropriate remedial and
18 monitoring actions for the Bank as specified in Section F.1.4 of Appendix F, to attain those
19 project objectives and performance standards. Prior to implementation of any remediation,
20 monitoring, or other corrective measures, the Sponsor shall obtain approval from the Corps and
21 Ecology in consultation with the IRT and Sponsor. In the event the Sponsor fails to implement
22 necessary contingency actions within the prescribed period, the Corps and/or Ecology, following
23 consultation with the Sponsor and the IRT, will direct remedial, corrective, and/or sanctioning
24 action in accordance with the procedures specified in Section F.1.4.A of Appendix F.
25 Alternatively, the Corps and/or Ecology may accomplish such remedial action directly, acting
26 through a Third Party Designee, by accessing the financial assurance instrument pursuant to
27 Article III.C.1.a and Article III.C.1.b of this Instrument.

28 **I. Force Majeure.** The Sponsor may request, pursuant to Article III.B., and the Corps and
29 Ecology may approve changes to the construction, operation, objectives, performance standards,
30 timelines or credit generation and award schedule of the Bank, pursuant to the standards and
31 procedures specified in Section F.1.4 of Appendix F, if all of the following occur: an act or event
32 causes substantial damage such that it is determined to be a force majeure; such act or event has
33 a significant adverse impact on the quality of the aquatic functions, native vegetation, or soils of
34 the Bank site; and such act or event was beyond the reasonable control of the Sponsor, its agents,
35 contractors, or consultants to prevent or mitigate.

36 1. The evaluation of the damage caused by a force majeure and the resulting changes
37 to mitigation requirements involve a communicative process. If the Sponsor asserts a
38 mitigation site has sustained significant adverse impacts due to an event or act which may
39 be determined to be a force majeure, the Sponsor shall give written notice to the Corps,

1 Ecology and the IRT as soon as is reasonably practicable. After receiving written notice,
2 the Corps and Ecology, in consultation with the Sponsor and the IRT, shall evaluate
3 whether the event qualifies as force majeure. The Corps and Ecology, in consultation
4 with the Sponsor and the IRT, will then evaluate whether significant adverse impacts
5 have occurred to the site. If a force majeure event is determined to have occurred and
6 significant adverse impacts are found to have occurred to the site, the Corps and Ecology,
7 in consultation with the IRT and the Sponsor, will evaluate whether and to what extent
8 changes to the Bank site will be in the best interest of the site and the aquatic
9 environment, and may approve such changes as detailed above. The Corps and Ecology
10 retain sole discretion, after engaging Sponsor in discussions regarding the same and
11 attempting to reach a consensus on a mutual approach, over the final determination of
12 whether an act or event constitutes force majeure, whether significant adverse impacts to
13 the Bank site have occurred, and to what extent changes to the Bank site or its
14 management will be permitted.

15 2. Force majeure events include natural or human-caused catastrophic events or
16 deliberate and unlawful acts by third parties.

- 17 a. Examples of a natural catastrophic event include, but are not limited to: a flood
18 equal to or greater in magnitude than the 100-year flood event; an earthquake of a
19 force projected from an earthquake with a return period of 475 years; drought that
20 is significantly longer than the periodic multi-year drought cycles that are typical
21 of weather patterns in the Pacific Northwest; as well as events of the following
22 type when they reach a substantially damaging nature: disease, wildfire,
23 depredation, regional pest infestation, or significant fluviogeomorphic change.
- 24 b. Examples of a human-caused catastrophic event include, but are not limited to
25 substantial damage resulting from the following: war, insurrection, riot or other
26 civil disorders, spill of a hazardous or toxic substance, or fire.
- 27 c. Examples of a deliberate and unlawful act include, but are not limited to
28 substantial damage resulting from the following: the dumping of a hazardous or
29 toxic substance, as well as significant acts of vandalism or arson.

30 3. The consequences of any events of force majeure recognized as such by the Corps
31 and Ecology shall not affect the status of previously released credits, whether or not they
32 have yet been sold, used, or transferred.

33 **J. Default.** Should the Corps and/or Ecology, in consultation with the IRT, determine that
34 the Sponsor is in material default of any provision of this Instrument, the Corps and/or Ecology
35 may cease award of mitigation credits, and may notify the Sponsor that the award, sale, and/or
36 transfer of mitigation credits, or use by the Sponsor of Bank credits as compensatory mitigation
37 for its own activities causing adverse impacts to the aquatic environment, are suspended until the
38 delineated deficiencies are rectified. Upon written notification of suspension, the Sponsor agrees
39 to immediately cease any sale or transfer transactions not yet finally completed, and/or to cease
40 any use by the Sponsor of Bank credits as compensatory mitigation for its own activities causing
41 adverse impacts to the aquatic environment where a Corps or Ecology permit or authorization, as
42 required, has not yet been issued, until informed by the notifying agency that award, sale, use, or

1 transfer of credits may be resumed. Should the Sponsor remain in default for a period of 90 days,
2 the Corps and Ecology, following consultation with the IRT, may terminate this Instrument and
3 any subsequent banking operations. In the event such termination action is commenced, the
4 Sponsor agrees to fulfill its pre-existing obligations to perform all establishment, monitoring,
5 maintenance, management, and remediation responsibilities that arise directly from credits that
6 have already been awarded, sold, used, or transferred at the time of termination.

7 **K. Establishment Period of the Bank.** The establishment period of the Bank will
8 commence on the date the Instrument takes effect pursuant to Article VI.B.1. Prior to termination
9 of the establishment period of the Bank, the Corps and Ecology, following consultation with the
10 IRT, will perform a final compliance inspection to evaluate whether all performance standards
11 have been achieved. The establishment period for the Bank will terminate, and the period of
12 Long Term management and maintenance will commence, when the Corps and Ecology
13 determine, in consultation with the IRT and the Sponsor, that the following conditions have been
14 met:

15 1. All applicable performance standards prescribed in Appendix C have been
16 achieved;

17 2. All available credits have been awarded or the Corps and Ecology, in consultation
18 with the IRT, have approved the Sponsor's written request to permanently cease banking
19 activities;

20 3. The Sponsor has prepared a Long Term Management and Maintenance Plan that
21 has been approved by the Corps and Ecology pursuant to Article IV.M and Appendix G;

22 4. The Sponsor has either:

23 (i) assumed responsibilities for accomplishing the Long Term Management and
24 Maintenance Plan, in which case the Sponsor will fulfill the role of Long
25 Term Steward, or

26 (ii) assigned those responsibilities to another Long Term Steward pursuant to
27 Article IV.M.2 of this Instrument;

28 5. The Long Term Management and Maintenance Endowment Fund has been fully
29 funded;

30 6. The contents of the Long Term Management and Maintenance Endowment Fund
31 have been transferred to the Long Term Steward; and

32 7. The Bank has complied with the terms of this Instrument.

33 **L. Operational Life of the Bank.** The operational life of the Bank will commence on the
34 date the Instrument takes effect pursuant to Article VI.B.1 Following the termination of the
35 establishment period of the Bank, and (1) upon sale, transfer, or use by the Sponsor as
36 compensatory mitigation for its own activities causing adverse impacts to the aquatic

1 environment of all credits, or (2) upon approval by the Corps and Ecology, in consultation with
2 the IRT, of the Sponsor’s written request to permanently cease banking activities, the operational
3 life of the Bank will terminate.

4 **M. Long Term Management and Maintenance.**

5 1. The Sponsor shall develop a Long Term Management and Maintenance Plan
6 (“LTMMP”) consistent with the guidelines and objectives specified in Appendix G, and
7 submit the Plan for approval by the Corps and Ecology, in consultation with the other
8 members of the IRT. The Sponsor is responsible, as long term steward, for execution of
9 the approved LTMMP. The Sponsor may only deviate from the LTMMP upon written
10 approval of the Corps and Ecology, following consultation with the Sponsor and the IRT.

11 2. The Sponsor may assign its long term management and maintenance
12 responsibilities to a third party assignee, which will then serve as the long term steward in
13 place of the Sponsor. The identity of the assignee and the terms of the long term
14 management and maintenance agreement between the Sponsor and the assignee must be
15 approved by the Corps and Ecology, following consultation with the IRT, in advance of
16 assignment.

17 3. Upon execution of a long term management and maintenance assignment
18 agreement and the transfer of the contents of the Long Term Management and
19 Maintenance Endowment Fund, and upon satisfaction of the remaining requirements for
20 termination of the establishment period of the Bank under Article IV.K of this
21 Instrument, the Sponsor shall be relieved of all further long term management and
22 maintenance responsibilities under this Instrument.

23 **N. Accomplishment of Sponsor Responsibilities; Transfer of Ownership of or Rights in**
24 **the Bank.** The Sponsor shall remain responsible for complying with the provisions of this
25 Instrument throughout the operational life of the Bank, regardless of the ownership status of the
26 underlying real property, unless those responsibilities have been assigned pursuant to the
27 provisions of Article VI.C of this Instrument. The Sponsor shall provide written notice within 60
28 days of any transfer of ownership in all or a portion of the Bank real property or rights.

29 **V. RESPONSIBILITIES OF THE CORPS AND ECOLOGY**

30 A. The Corps and Ecology agree to provide appropriate oversight in carrying out provisions
31 of this Instrument.

32 B. The Corps and Ecology agree to review and provide comments on project plans,
33 monitoring reports, contingency and remediation proposals, and similar submittals from the
34 Sponsor in a timely manner. The Corps and Ecology will coordinate their review with other
35 members of the IRT.

36 C. The Corps and Ecology agree to review requests to modify the terms of this Instrument,
37 transfer title or interest in the Bank, determine achievement of performance standards in order to

1 evaluate the award of credits for each phase of the Bank, or approve the LTMMP. The Corps and
2 Ecology will coordinate review with the members of the IRT so a decision is rendered or
3 comments detailing deficiencies are provided in a timely manner. The Corps and Ecology agree
4 to not unreasonably withhold or delay decisions on such requests.

5 D. The Corps and Ecology agree to act in good faith when rendering decisions about
6 acceptability of financial assurances, requiring corrective or remedial actions, requiring long
7 term management and maintenance actions, awarding credits, and making decisions on requests
8 to modify wetland credit generation ratios or the credit award schedule. The Corps and Ecology
9 will exercise good judgment in accessing financial assurances, and will utilize those monies only
10 to the extent they reasonably and in good faith conclude that such remedial or corrective actions
11 are an effective and efficient expenditure of resources. In implementing the process delineated in
12 Article III.C.1 of this Instrument, the Corps and Ecology will act in good faith in determining the
13 scope and nature of corrective actions to be undertaken; shall act in good faith in conducting
14 monitoring, developing reports, and assessing compliance with performance standards; and will
15 not unreasonably limit corrective action activities or otherwise apply their discretion so as to
16 unduly prejudice the Sponsor as to the timing or number of credits awarded. Corps and Ecology
17 approval of the identity of any assignee responsible for executing the LTMMP, and approval of
18 the terms of any long term management and maintenance assignment agreement, will not be
19 unreasonably withheld.

20 E. The Corps and Ecology will periodically inspect the Bank site as necessary to evaluate, in
21 consultation with the other members of the IRT, the achievement of performance standards, to
22 assess the results of any corrective measures taken, to monitor implementation of the LTMMP,
23 and, in general, to verify the Sponsor's compliance with the provisions of this Instrument.

24 Upon satisfaction of the requirements of Article IV.K under this Instrument, the Corps and
25 Ecology will certify, following consultation with the Sponsor and the other members of the IRT,
26 that the establishment period of that phase of the Bank has terminated, and that the period of long
27 term management and maintenance has begun. Upon satisfaction of the requirements of Article
28 IV.L of this Instrument and consultation with the other members of the IRT, the Corps and/or
29 Ecology will jointly issue a letter certifying that the operational life of the Bank has terminated.

30 VI. GENERAL PROVISIONS

31 A. **Decision Making by Consensus.** The Corps and Ecology will strive to achieve
32 consensus among the IRT regarding issues that arise pertaining to the establishment, operation,
33 maintenance, and management of the Bank. The Corps and Ecology will coordinate the review
34 and oversight activities of the IRT so as to best facilitate opportunity to reach the desired
35 consensus. Review and oversight decisions will take into account the views of the Sponsor to the
36 maximum extent practicable. Where consensus cannot otherwise be reached within a reasonable
37 timeframe, following full consideration of the comments of the members of the IRT and
38 following consultation with the Sponsor, the Corps holds the responsibility and authority under
39 Section 404 of the Clean Water Act, and Ecology holds independent responsibility and authority
40 under Section 401 of the Clean Water Act and RCW ch. 90.48, to make final decisions regarding
41 the application of the terms of this Instrument.

1 **B. Entry into Effect, Modification or Amendment, and Termination of the Instrument.**

2 1. This Instrument, consisting of both this Basic Agreement and the Appendices,
3 will enter into effect upon the signature by authorized representatives of the Corps,
4 Ecology, and the Sponsor, as of the date of the last of these signatures.

5 2. This Basic Agreement portion of the Instrument may be amended or modified
6 only with the written approval of the Sponsor, the Program Manager for Shorelands and
7 Environmental Assistance on behalf of Ecology, and the Seattle District Engineer on
8 behalf of the Corps, or their designees. Any such modifications, addenda, or amendments
9 will take effect following consultation with the other members of the IRT. Amendment or
10 modification of the provisions of the Appendices may be effectuated through an
11 exchange of letters signed by the Sponsor, the Mitigation Banking Specialist serving as
12 Co-Chair on behalf of the Corps, and the Wetland Section Manager serving as Co-Chair
13 on behalf of Ecology, following consultation with the other members of the IRT,
14 provided the exchange of letters expresses mutual agreement as to the exact language to
15 be deleted or modified, and the exact language to be inserted.

16 3. This Instrument may be terminated by the mutual agreement of the Sponsor,
17 Corps, and Ecology, following consultation with the IRT, or may be terminated under the
18 terms of Article IV.J of this Instrument in the case of default by the Sponsor. In the event
19 any termination action is commenced, the Sponsor agrees to fulfill its pre-existing
20 obligations to perform all establishment, monitoring, maintenance, management, and
21 remediation responsibilities that arise directly from credits that have already been sold,
22 used, or transferred at the time of termination.

23 4. Upon termination of the operational life of the Bank pursuant to Article IV.L, and
24 certification to that effect pursuant to Article V.F, this Instrument shall terminate without
25 further action by any Party. Thereafter, the Long Term Management and Maintenance
26 Plan developed, approved, and instituted in accordance with Article IV.M shall govern
27 the continuing obligations of the Sponsor, or its assignee as applicable.

28 **C. Assignment of Obligations under this Instrument.** The Sponsor may be permitted to
29 assign its obligations, responsibilities, and entitlements under this Instrument to a third party.
30 The Corps and Ecology, following consultation with the IRT, must approve the identity of the
31 assignee in order for any assignment to effectively relieve the Sponsor of those obligations. In
32 evaluating a prospective assignee, the Corps and Ecology may consider characteristics such as
33 environmental mitigation expertise, wetlands mitigation project or analogous experience, and
34 financial strength and stability. Approval of the identity of the assignee will not be unreasonably
35 withheld. The assignee must execute a mitigation banking instrument with the Corps and
36 Ecology under terms identical, to the extent practicable, to the present Instrument. The applicable
37 financial assurances established pursuant to Article III.C.1 and Article III.C.2 of this Instrument
38 must be initiated. The obligations, responsibilities, and entitlements under this Instrument may
39 reside in only a single entity at any one time, and may not be severed or transferred piecemeal.
40 However, the physical ownership of the Bank site real property and the obligations,
41 responsibilities, and entitlements under this Instrument are separate and distinct; thus, ownership

1 may be transferred, pursuant to the provisions of Article IV.N, independently of assignment of
2 this Instrument. Once assignment has been properly accomplished, the Sponsor will be relieved
3 of all its obligations and responsibilities under this Instrument. Specific additional provisions
4 pertaining to the assignment of Long Term management and maintenance obligations are
5 described at Article IV.M.

6 D. Specific Language of this Basic Agreement Shall Be Controlling: To the extent that
7 specific provisions of this Basic Agreement portion of the Instrument are inconsistent with any
8 terms and conditions contained in the Appendices, or inconsistent with other documents that are
9 incorporated into this Instrument by reference and that are not legally binding, the specific
10 language within this Basic Agreement shall be controlling.

11 E. Notice: Any notice required or permitted hereunder shall be deemed to have been given
12 either (i) when delivered by hand, or (ii) three (3) days following the date deposited in the United
13 States mail, postage prepaid, by registered or certified mail, return receipt requested, or (iii)
14 when sent by Federal Express or similar next-day nationwide delivery system, addressed as
15 follows (or addressed in such other manner as the party being notified shall have requested by
16 written notice to the other party):

17 **WCEI Chehalis MB, LLC**
18 8065 Leesburg Pike 4th Floor
19 Tysons Corner, Virginia 22182-2738
20 703.790.7921

21 **U.S. Army Corps of Engineers, Seattle District**
22 Mitigation Banking Specialist/Co-chair of the IRT
23 Regulatory Branch
24 Seattle District, Corps of Engineers
25 4735 E. Marginal Way South
26 Post Office Box 3755
27 Seattle, Washington 98124-3755
28 206.764.3495

29 **Washington State Department of Ecology**
30 Mitigation Banking Specialist/Co-chair of the IRT
31 Shorelands and Environmental Assistance Program
32 Post Office Box 47600
33 300 Desmond Drive
34 Olympia, Washington 98504-7600
35 360.407.6000

36 **F. Entire Agreement.** This Instrument, consisting of both this Basic Agreement and the
37 Appendices, constitutes the entire agreement between the parties concerning the subject matter
38 hereof.

39 **G. Invalid Provisions.** In the event any one or more of the provisions contained in this
40 Instrument are held to be invalid, illegal, or unenforceable in any respect, such invalidity,

1 illegality or unenforceability will not affect any other provisions hereof, and this Instrument shall
2 be construed as if such invalid, illegal or unenforceable provision had not been contained herein.

3 **H. Effect of Agreement.** This Instrument does not in any manner affect statutory authorities
4 and responsibilities of the signatory Parties. This Instrument is not intended, nor may it be relied
5 upon, to create any rights in third parties enforceable in litigation with the United States or the
6 State of Washington. This Instrument does not authorize, nor shall it be construed to permit, the
7 establishment of any lien, encumbrance, or other claim with respect to the Bank property, with
8 the sole exception of the right on the part of the Corps and Ecology to require the Sponsor to
9 implement the provisions of this Instrument, including recording the conservation easement,
10 required as a condition of the issuance of permits for discharges of dredged and fill material into
11 waters of the United States associated with construction and operation and maintenance of the
12 Bank.

13 **I. Attorneys' Fees.** If any action at law or equity, including any action for declaratory
14 relief, is brought to enforce or interpret the provisions of this Instrument, each party to the
15 litigation shall bear its own attorneys' fees and costs of litigation.

16 **J. Availability of Funds.** Implementation of this Instrument is subject to the requirements
17 of the Anti-Deficiency Act, 32 U.S.C. § 1341, and the availability of appropriated funds. Nothing
18 in this Instrument may be construed to require the obligation, appropriation, or expenditure of
19 any money from the United States Treasury, in advance of an appropriation for that purpose.

20 **K. Headings and Captions.** Any paragraph heading or caption contained in this Instrument
21 shall be for convenience of reference only and shall not affect the construction or interpretation
22 of any provision of this Instrument.

23 **L. Counterparts.** This Instrument may be executed by the Parties in any combination, in
24 one or more counterparts, all of which together shall constitute one and the same instrument.

25 **M. Binding.** This Instrument, consisting of both this Basic Agreement and the Appendices,
26 shall be immediately, automatically, and irrevocably binding upon the Sponsor and its heirs,
27 successors, assigns and legal representatives upon execution by the Sponsor, Ecology, and the
28 Corps.

29

1 IN WITNESS WHEREOF, the Parties hereto have executed this Instrument on the date herein
2 below last written.

3
4 PARTIES:

5 By the Sponsor:

6
7 _____
8 Robert D. Sokolove Date
9 President, WCEI Chehalis MB, LLC

10
11 By the Corps:

12
13 _____
14 Bruce A. Estock Date
15 Colonel, Corps of Engineers
16 Seattle District Engineer

17
18 By Ecology:

19
20 _____
21 Gordon White Date
22 Program Manager, Shorelands and Environmental Assistance Program
23 Washington State Department of Ecology

24
25 OTHER IRT MEMBERS:

26 Signature by other IRT members indicates assent on the part of the represented organization to
27 the provisions of this Instrument, but does not give rise to any affirmative obligations, express or
28 implied. This Instrument is not binding on the other IRT members.

29
30 _____
31 _____ Date
32 _____
33 _____

34
35 _____
36 _____ Date
37 _____
38 _____

39
40 _____
41 _____ Date
42 _____
43 _____

44
45

Hanaford Valley Mitigation Bank MBI Appendices

Table of Contents

Appendix A - General Bank Information

Appendix A.1

- A.1.1 Bank Project Purpose and Ecological Goals
- A.1.2 Bank Location and Legal Description
- A.1.3 Bank Site Description and Baseline Ecological Conditions
 - A.1.3.1 Site Description
 - A.1.3.2 Baseline Ecological Conditions
- A.1.4 Functions Assessment
- A.1.5 Post-Construction Functional Assessment
 - A.1.5.1 Anticipated Ecological Lift
 - A.1.5.2 Summary

Appendix B - Bank Development Plan and Design

Appendix B.1

- B.1.1 Overview of the Bank Development Plan
- B.1.2 Site Construction
 - B.1.2.1 Construction Sequence
 - B.1.2.2 Site Preparation
 - B.1.2.2.1 Invasive Control
 - B.1.2.3 Grading
 - B.1.2.3.1 Ditch Filling and Grading
 - B.1.2.4 Habitat Features
 - B.1.2.5 Seeding and Planting
- B.1.3 Maintenance and Invasive Species Control
- B.1.4 Erosion Control and Stormwater Protection
 - B.1.4.1 Inspection and Monitoring

Appendix C – Bank Objectives and Performance Standards

Appendix C.1

- C.1.1 Application of the Bank Objectives and Performance Standards
- C.1.2 Bank Objectives and Performance Standards
 - Objective 1: Protect Aquatic Ecosystems at the Bank
 - Objective 2: Hydrology
 - Objective 3: Vegetation
 - Objective 4: Wildlife

Appendix D – Credit Generation and Award Schedule

Appendix D.1

D.1.1 Generation of Credits

D.1.2 Credit Award Schedule

Appendix E – Procedures for Use of Mitigation Bank Credits and Debit Use

Appendix E.1

E.1.1 Service Area

E.1.2 Credit-Debit Ratios

E.1.3 Procedures for Use of Mitigation Bank Credits

E.1.4 Accounting Procedures

Appendix F – Establishment Period Monitoring, Reporting, Maintenance, and Remedial Action

Appendix F.1

F.1.1 As-Built Reports

F.1.2 Site Monitoring

F.1.2.1 Overview of Monitoring Requirements

F.1.2.2 Monitoring Protocol

F.1.2.3 Vegetation

F.1.2.3.1 Sampling Strategy

F.1.2.3.2 Forested and Scrub-Shrub Zone Transects

F.1.2.3.3 Riparian Scrub-Shrub and Palustrine Emergent Zone Transects

F.1.2.3.4 Invasive Species

F.1.2.3.5 Statistical Methods

F.1.2.4 Hydrology

F.1.2.5 Habitat Features

F.1.3 Reporting

F.1.4 Remedial Action during the Establishment Period of the Bank

F.1.5 Maintenance during the Establishment Period of the Bank

Appendix G – Long Term Protection and Management

Appendix G.1

G.1.1 Conservation Easements

G.1.2 Long-Term Management and Maintenance Plan

Appendix H – Financial Assurances

Appendix H.1

H.1.1 Surety Bond or Casualty Insurance

H.1.2 Long Term Management and Maintenance Endowment Fund

List of Figures

- Figure A-1 Vicinity Map
- Figure A-2 Site Parcel Map
- Figure A-3 Existing Conditions
- Figure A-4 Soils Map
- Exhibit A-1 Plat and Legal Description
- Exhibit B Design Plans (Sheets 1-16)
- Figure E-1 Hanaford Valley Mitigation Bank Service Area
- Figure F-1 Monitoring Transects and Photo Point Locations
- Figure F-2 Quadrat Configuration

Appendix A - General Bank Information

Appendix A.1

A.1.1 Bank Project Purpose and Ecological Goals

The purpose of the Bank is to generate mitigation credits for projects that will have an adverse impact on the aquatic environment, and that need to compensate for those impacts as a condition of their permits or other regulatory requirements resulting from project impacts.

The ecological goals of the proposed mitigation bank at the Hanaford Valley site are as follows:

Goal: Improve hydrologic, water quality, and habitat functions in the Hanaford Valley Mitigation Bank site.

Goal: Provide a self-sustaining wetland and stream complex that will not require maintenance.

The proposed bank at the Hanaford Valley site will restore, rehabilitate, enhance and preserve wetland functions to compensate for future impacts to wetlands or other aquatic resources. The site has been selected because it has the potential to provide ecological functional lift in a rural setting that would expand on previous rehabilitation efforts that have already restored typically flood plain functions to Big Hanaford Creek. As a result, the proposed bank will provide improved hydrologic, water quality, and habitat functions over existing conditions.

Relevant documentation supporting the technical information found in these appendices is included in a separate Resource Folder. The Resource Folder is not considered part of the MBI but is prepared by the Sponsor and provided to all IRT members to serve as a reference document. The Resource Folder for the Hanaford Valley site includes the Wetland Delineation Report, wetland function assessment, Hydrologic and Drainage Analysis Report, Basis of Design Report, State Historic Preservation Office (SHPO) letters of Section 106 compliance, and Conservation Easement. Construction permits and a Biological Assessment will be added to the resource folder at a later date.

A.1.2 Bank Location and Legal Description

The proposed bank is located in the Hanaford Valley west of the Centralia Steam Plant, and would include acreage in both Lewis and Thurston Counties (Figure A-1, Vicinity Map). This location is in the floodplain of Big Hanaford Creek, a tributary to the Skookumchuck River, within Upper Chehalis Basin (WRIA 23). The legal location of the proposed bank is Sections 23, 25, and 26 of Township 15 North, Range 2 West (Figure A-2, Site Parcel Map). TCM submitted a prospectus in September of 2007 for developing this site as a mitigation bank. The prospectus was deemed complete by the IRT co- chairs but TCM elected not to develop the project. Much of the following site description text was taken from the original bank prospectus (Jones & Stokes 2007).

The proposed is comprised of 11 parcels (Figure A-2, Site Parcel Map) that would be developed as a mitigation bank adjacent to two previously developed mitigation projects, the Kopiah Project Wetland Mitigation Plan (US Army Corps of Engineers [Corps] permit #200400909 – referred to as the Big Hanaford Creek mitigation site) and the Pit 7 Rail Alternative Mitigation Plan (Corps permit # 200600278 – referred to as the Rail Upgrade mitigation site). The proposed bank would expand on the wetland floodplain rehabilitation provided by these sites, and would provide connectivity to upland and wetland habitats.

The proposed bank would include 176.97 acres, divided into a north unit (15.97 acres), northeast unit, (28.89 acres) south unit (117.78 acres), and west unit (14.33 acres) surrounding two existing mitigation sites in Hanaford Valley (Figure A-3, Existing Conditions and Exhibit A). The four bank units would combine with the two existing mitigation sites to establish a large, contiguous riverine wetland rehabilitation project that would span Hanaford Valley near the Centralia Steam Plant.

A.1.3 Bank Site Description and Baseline Ecological Conditions

A.1.3.1 Site Description

The proposed bank property was acquired by TCM in 2006 and is currently unused. Prior to acquisition, the property had been used for hay production and pasture. Most of the site is now vegetated by pasture grasses and weeds typical of seasonal wetlands in western Washington. The western portions of the proposed bank are vegetated with mature Oregon ash wetland forest that would be preserved as part of the proposed bank. The proposed bank is surrounded by existing mitigation sites, commercial timberland, county road, railroad spur, the Centralia Steam Plant, unused pasture land, and a little-used access road (Figure A-3, Existing Conditions). Four utility corridors cross through the site that will be planted according to the utility company requirements to provide habitat connectivity, but will not be credit generating. These include easements for a Puget Sound Energy (PSE) powerline, a Bonneville Power Administration (BPA) transmission line, 2 TCM powerlines, and a TCM watermain line.

Most of the proposed bank is vegetated by pasture grasses and weeds. Reed canarygrass (*Phalaris arundinacea*), bentgrass (*Agrostis* spp.), meadow foxtail (*Alopecurus pratensis*), velvet grass (*Holcus lanatus*), and Himalayan blackberry (*Rubus discolor*) are among the dominant species throughout the broad floodplain.

Preservation areas proposed for the west and north units of the proposed bank are vegetated by mature Oregon ash (*Fraxinus latifolia*) forest with a predominantly native understory of Nootka rose (*Rosa nutkana*), twinberry (*Lonicera involucrata*), willow (*Salix*, spp.), slough sedge (*Carex obnupta*), and small-fruited bulrush (*Scirpus microcarpus*). This mature forest community extends beyond the boundary of the proposed bank onto existing mitigation properties and adjacent private properties.

The inactive sediment ponds in the northeast unit have not been maintained, and pond berms are sloughing. However, these areas still impound water and create wetter habitat than in surrounding wetlands. These inactive ponds are dominated by cattails (*Typha latifolia*) and lesser amounts of other plant species tolerant of long-term inundation.

A.1.3.2 Baseline Ecological Conditions

The proposed mitigation bank is predominantly wetland. Uplands are generally limited to constructed features (e.g., sediment pond berms) that would be removed during proposed bank development. The wetlands originally developed as riverine forested, scrub-shrub, and emergent wetlands prior to being converted to agricultural lands (United States Surveyor General 1867). Big Hanaford Creek, tributary streams, and adjacent wetlands were ditched in the early 1900s to increase drainage and reduce floodplain and wetland interaction and to increase farmlands and pasture; the site includes approximately 8,050 linear feet of ditches. Native vegetation was removed and replaced with pasture and hay grasses. Several sediment ponds were constructed in the 1970s in the northeast corner of the proposed bank site. Ponding of the wetland floodplain to create sediment ponds converted those areas to depression emergent wetland with low ecological value.

Floodplain interaction within the bank was restored in 2007 by re-aligning Big Hanaford Creek during the implementation of the Kopiah Project Wetland Mitigation Plan (Jones & Stokes 2007).

Hydrologic, habitat, and water quality functions have been improved at the Big Hanaford Creek mitigation site, an approximately 600-foot wide corridor along the restored Big Hanaford Creek. The proposed bank would expand the floodplain to the surrounding areas, rehabilitating and enhancing wetland function in this portion of Hanaford Valley, further increasing the functional lift of the approved mitigation site.

Hydrology data collected by Jones & Stokes and URS Corporation (consultant) through wetland delineations and other fieldwork (Jones & Stokes 2005) indicate a high groundwater table throughout the proposed bank early in the growing season, with dryer conditions and absence of a high water table during the summer and fall months. Although soils begin to dry during summer months and the soil is not saturated throughout the wetland, soil moisture is present. The presence of wetland shrub and tree species in similar soils with similar hydroperiods downstream of the mitigation site indicate that forested and scrub-shrub wetlands would be supported at the Big Hanaford Creek site.

Additional observations of hydrologic conditions were made in association with flooding of the Hanaford Valley in December 2005, January 2006, and November 2006. During a heavy rainfall event from mid-December 2005 through mid-January 2006, flooding began in the lower reach of the proposed bank and moved upstream. Most of the valley-wide flooding occurred in the western half of the proposed bank, where ground surface elevations are generally lower than further upstream. Eventually the flood extended across approximately 1,200 to 1,800 feet of the valley floodplain. Flood depths of 1.5 to 2 feet occurred on open flat terrain based on flood lines as observed on ground photographs taken December 29, 2005, and January 20, 2006, compared to the 1-foot contour maps previously prepared for this site. In the upstream (eastern) half of the proposed bank, there were areas of ponding and overbank flooding, but large portions of this part of the valley did not flood. Valley flood water had fully receded by January 23, 2006. Flooding did not occur on site during the rest of the winter and spring after water receded, although ponding was still present in topographic low areas (as of April 4, 2006). Another flooding event in November 2006 followed a pattern similar to the 2005 flood.

The hydrologic conditions of the proposed bank would be wetter as a result of more frequent flooding at the adjacent Big Hanaford Creek mitigation site. Big Hanaford Creek floods are low-velocity due to the flat topography of the Hanaford, Skookumchuck, and Chehalis Basins.

Wetlands in the abandoned sediment ponds are supported hydrologically by inflow coming from the active sediment basin to the east, supplemented by direct precipitation. The inflow typically occurs from late October until mid-May. Outflows from the abandoned pond occur in three places from openings in the dike, flowing eventually into Big Hanaford Creek.

The Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2007) maps the greater portion of the Hanaford Creek floodplain as the very deep, poorly drained Godfrey and Reed series silty clay loams, both of which are hydric soils (Figure A-4, Soils Map).

A.1.4 Functions Assessment

Functions for existing and future (post construction) conditions of rehabilitation and enhancement areas were assessed by a modified methodology, based on model variables from *Methods for Assessing Wetland Functions Volume 1 Riverine and Depressional Wetlands in the Lowlands of Western Washington* (WFAM, (Hruby 1999)). The WFAM riverine flowthrough models for all assessed functions were reviewed, and functional variables were extracted to compose a list of

function assessment variables. The variables were grouped by function groups consistent with the rating system; many variables are used to assess multiple functions, but are listed once. A qualitative description of each variable’s condition, based on WFAM scoring, was then provided for both the existing and future condition after rehabilitation and enhancement efforts are complete. The condition of each assessed variable was described as “Poor”, “Medium”, or “Good” dependent on whether the variable would score in the lowest, mid-range, or highest third of the corresponding functional model for the rehabilitation and enhancement areas of the bank site.

This approach is generally qualitative, but the number of site variables that are affected by the rehabilitation and enhancement work is quantifiable. Developing the Hanaford Valley site is intended to expand the existing rehabilitated and preserved wetlands associated with the Big Hanaford Creek mitigation site and was specifically identified because of its proximity to these areas. The assessment is based on variables used to assess the wetland’s potential to provide functions; opportunity to perform functions was not assessed but is assumed to be equal for existing and future condition scenarios. The existing and post-construction functions of preservation areas were not assessed.

Generally, variables relating to wetland area and soils that are suited for water quality treatment were considered in “good condition” because of the broad wetland valley setting, with clay-rich soils. Variables relating to hydrologic conditions were typically considered “good” or “medium” because the site is flooded by Big Hanaford Creek, a segment of which was restored adjacent to the proposed bank site, but the proposed bank site includes ditches and berms that negatively affect the site’s hydrologic condition. Variables relating to vegetative characteristics are generally considered “poor” because the site is covered predominantly by invasive species and lacks woody vegetation communities.

Tables A-1, A-2, and A-3 summarize existing and post-construction conditions for the variables assessed at the Hanaford Valley Site.

Table A.1 Water Quality Functions Assessment Summary

Function Variables	Existing Condition	Mitigation Action	Post -Construction Condition
Vegetation classes	Poor – Only weedy herbaceous species present.	Plant woody vegetation.	Good – Vegetation classes increase as shrub and forested communities establish.
Understory vegetation	Poor - No canopy present.	Seed native grasses.	Good – Understory vegetation increases as shrub and forested communities establish and understory develops.
Width ratio of wetland (flooding) to stream	Good – Realignment of Big Hanaford Creek has restored typical flooding extent.	Not addressed.	Good – Flooded wetland width remains post project implementation.
Area of inundated clay soils (also considering silty clay loam)	Medium/Good – Flood functions have been restored, but some ditches and pond berms remain. Ditches drain soils and berms create uplands.	Earthwork will fill ditches and remove sediment pond berms.	Good – No remaining uplands or artificial drainage features.

Table A.2 Hydrologic Functions Assessment Summary

Function Variables	Existing Condition	Mitigation Action	Post -Construction Condition
Storage capacity	Medium – Site is wide and flat, but partially impaired by ditches and berms.	Earthwork will eliminate berms and fill in ditches.	Good – Storage capacity will be maximized.
Size ratio of wetland to basin	Good – All of the site is currently wetland, other than sediment pond berms and upland areas associated with ditch spoil areas.	Earthwork will enlarge wetland area slightly.	Good, Slightly Improved – Wetland area will be slightly increased by grading down berms and spoil areas.
Ratio of wetland to stream	Medium – Most of site is wetland, but sediment pond berms are oriented perpendicular to stream and relatively close, constricting flood flow.	Earthwork will remove berms that constrict flood flows.	Good – Ratio of wetland to stream increases, specifically removing a constriction caused by berms.
Cover by woody vegetation	Poor – No cover present except for a few individuals shrubs.	Plant woody vegetation.	Good – Woody species establish and woody cover increases, ultimately contributing approx. 75% or greater cover.

Table A.3 Habitat Functions Assessment Summary

Function Variables	Existing Condition	Mitigation Action	Post -Construction Condition
Buffer condition (site perimeter)	Poor – No woody cover present on site perimeter.	Plant woody vegetation.	Good – Site perimeter condition improves as woody species establish.
Canopy closure	Poor – No woody cover present.	Plant woody vegetation.	Good – Canopy closure improves as woody species establish.
Number of vegetation strata	Poor – No woody shrub or tree cover present.	Plant woody vegetation.	Good – More vegetation strata result when woody species establish.
Number of snags	Poor – No snags or woody cover present for recruitment.	Install snags (plant woody vegetation).	Good – Number of snags and potential recruitment increase.
Number of LWD	Poor – No LWD or woody cover present for recruitment.	Install LWD (plant woody vegetation).	Good – Number of LWD and potential recruitment increase.
Vegetation interspersion	Poor – Only one vegetation community exists.	Plant woody vegetation.	Good – Vegetation interspersion increases as native emergent, shrub, and forested communities establish.

Number of hydrologic regimes	Good – Creek present on adjacent site, long duration inundation areas present, some areas affected by ditching and berms.	Fill ditches, flatten existing berms, restore seasonal tributary streams.	Good, Slightly Improved – Ditch drainage and berm uplands eliminated. Site contains long duration inundation areas and is adjacent to creek. Site will include segments or restored seasonal stream channels.
Number of water depth classes	Good – Creek present on adjacent site, long duration inundation areas present, some areas affected by ditching and berms.	Fill ditches, flatten existing berms, restore seasonal tributary streams.	Good, Slightly Improved – Ditch filling and berm leveling have only minor affect on area of inundation.
Interspersion of hydrologic regimes	Medium - Permanently, seasonally, and occasionally flooded regimes present.	Fill ditches, restore seasonal tributary streams.	Good – Seasonal tributary streams restored with high interspersion.
Species richness	Poor – No woody cover present, reed canarygrass monoculture.	Plant woody vegetation.	Good – Species richness increases as emergent, shrub and forested communities establish.
Mature woody vegetation	Poor – No woody cover present.	Plant woody vegetation.	Good – Mature vegetation develops from planted woody species.
Buffer condition (site perimeter)	Poor – No woody cover present in site perimeter.	Plant woody vegetation in site perimeter.	Good – Buffer condition improves as woody species establish in site perimeter.
Canopy closure	Poor – No woody cover present.	Plant woody vegetation.	Good – Canopy closure improves as woody species establish.
Number of vegetation strata	Poor – Only one vegetation community exists.	Plant woody vegetation.	Good – Vegetation interspersion increases as native emergent, shrub, and forested communities establish.
Corridors and connectivity (considering combination of existing and future mitigation projects)	Medium – Existing mitigation sites provide a 600-950 foot wide corridor of rehabilitated habitat.	Restore native vegetation communities to floodplain	Good – Habitat corridor expanded to up to 2,600 feet wide.

A.1.5 Post-Construction Functional Assessment

A.1.5.1 Anticipated Ecological Lift

The future condition functions assessment results show that all variables will be in “good” or “good, slightly improved” condition once the site is constructed, seasonal tributary streams are restored, and

the site develops mature plant communities (Tables A-1, A-2, and A-3). Site rehabilitation includes filling existing ditches, restoring seasonal tributary streams, removing constructed berms and restoring diverse native plant communities. The site’s location along a restored creek segment and in clay-rich soils allows, allows for all variables to develop into good condition, once the rehabilitation work is complete.

A.1.5.2 Summary

Of the 23 variables used to calculate all function scores in WFAM for riverine flowthrough, most are in poor condition in existing condition and are improved to good under the future condition. This demonstrates the proposed rehabilitation and enhancement actions address a range of important site characteristics, and affect a range of functions provided on site function. The changes of condition, based on our assessment of conditions of the variables described in WFAM, are summarized in Table A-4.

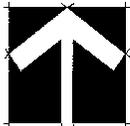
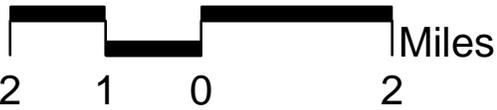
Table A.4 Ecological Lift Summary

Existing Condition	Future Condition	Number of Changed Indicators
Poor	Good	14
Medium	Good	5
Good	Good	4

References

- Hruby, T. 2004. Washington State wetland rating system for western Washington – Revised. Washington State Department of Ecology Publication # 04-06-025.
- Hruby, T, T. Granger, K. Brunner, S. Cooke, K. Dublanica, R. Gersib, L. Reinelt, K. Richter, D. Sheldon, E. Teachout, A. Wald, and F. Weinmann. July 1999. Methods for Assessing Wetland Functions Volume I: Riverine and Depressional Wetlands in the Lowlands of Western Washington. WA State Department Ecology Publication #99-115. Hruby, T. 2011. Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington. Washington State Department of Ecology Publication # 10-06-011.
- Jones & Stokes. 2005. Kopiah Project Habitat Mitigation and Monitoring Plan. November. (J&S 04456.04). Seattle, WA. Prepared for TransAlta Centralia Mining, LLC.
- Jones & Stokes. 2007. Mitigation Bank Prospectus. Hanaford Valley Mitigation Bank. September. (J&S 00405.07.) Portland, OR. Prepared for TransAlta Centralia Mining, LLC.

Figures



SCALE: 1 INCH = 2 MILES

LATITUDE: 46° 45' 42.50" N
 LONGITUDE: 122° 53' 02.00" W

SOURCE: ESRI STREET MAP USA

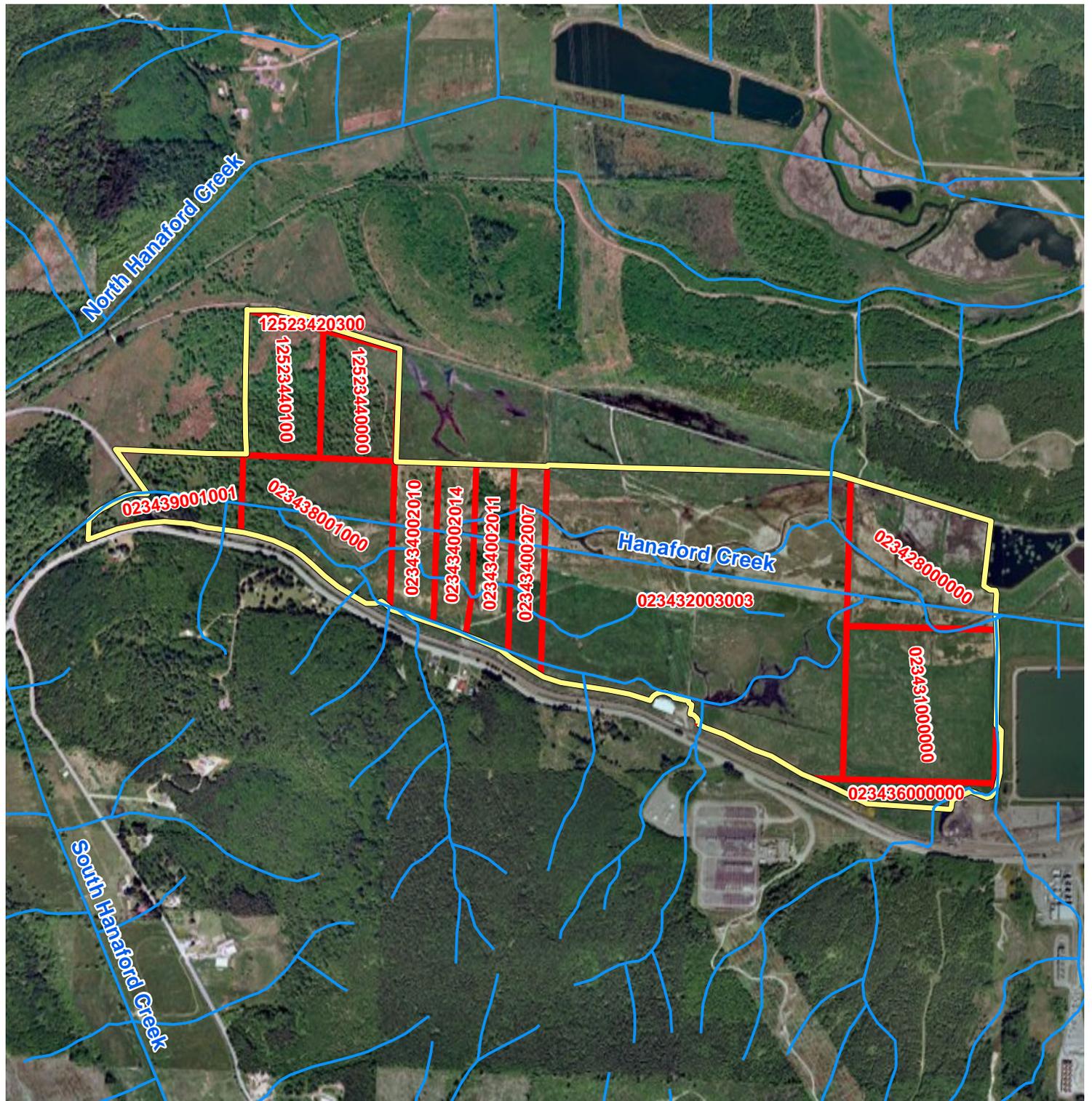
CASCADE
 ENVIRONMENTAL GROUP



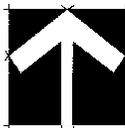
FIGURE A-1
VICINITY MAP
 CHEHALIS BASIN MITIGATION BANK -
 HANAFORD VALLEY SITE

CENTRALIA, WA

SEPTEMBER 2011



SCALE: 1 INCH = 1,200 FEET



LATITUDE: 46° 45' 42.50" N
 LONGITUDE: 122° 53' 02.00" W

SOURCE: AERIALS EXPRESS, 2009

CASCADE
 ENVIRONMENTAL GROUP



FIGURE A-2
SITE PARCEL MAP
 CHEHALIS BASIN MITIGATION BANK -
 HANAFORD VALLEY SITE

CENTRALIA, WA

SEPTEMBER 2011

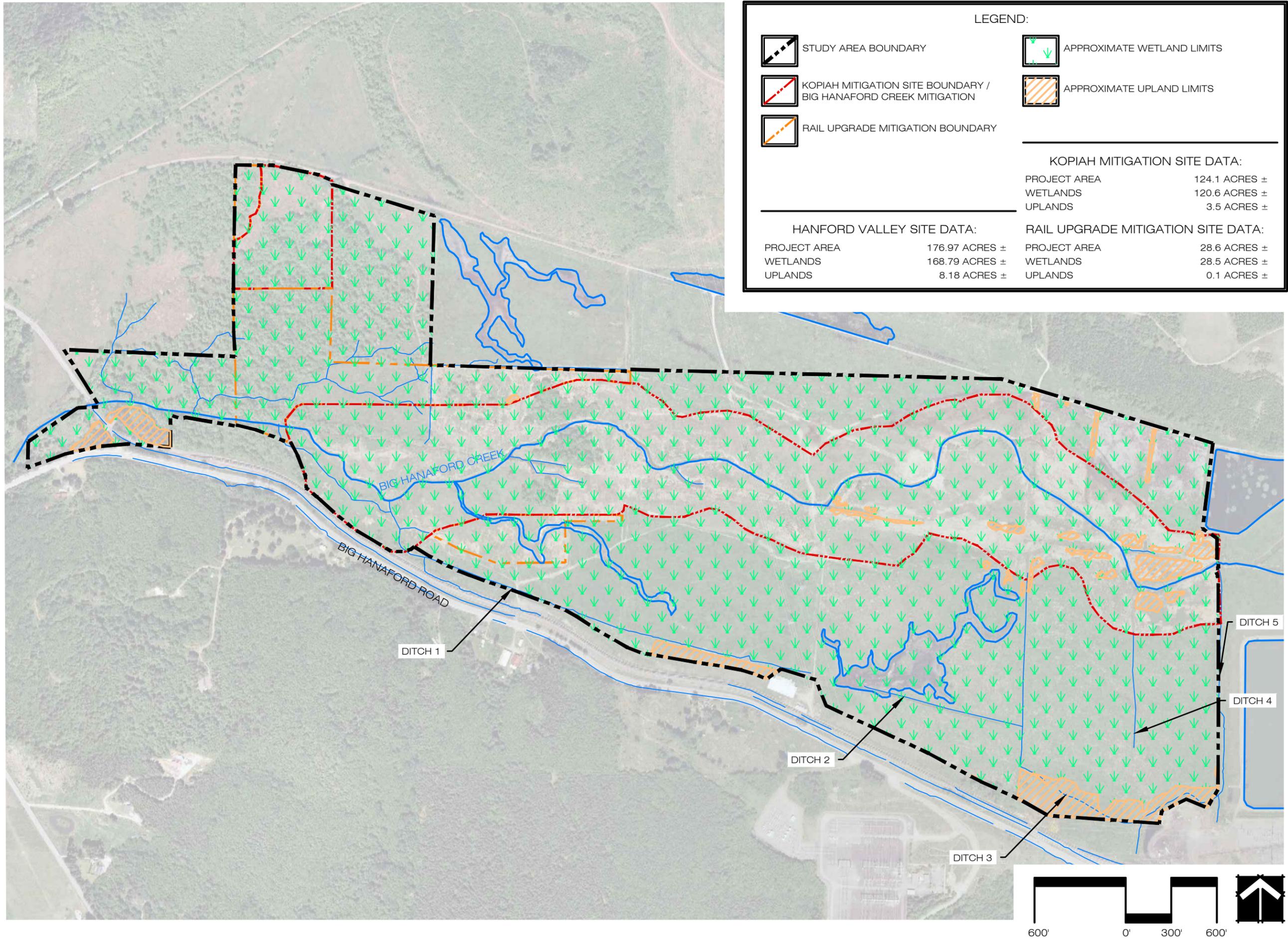
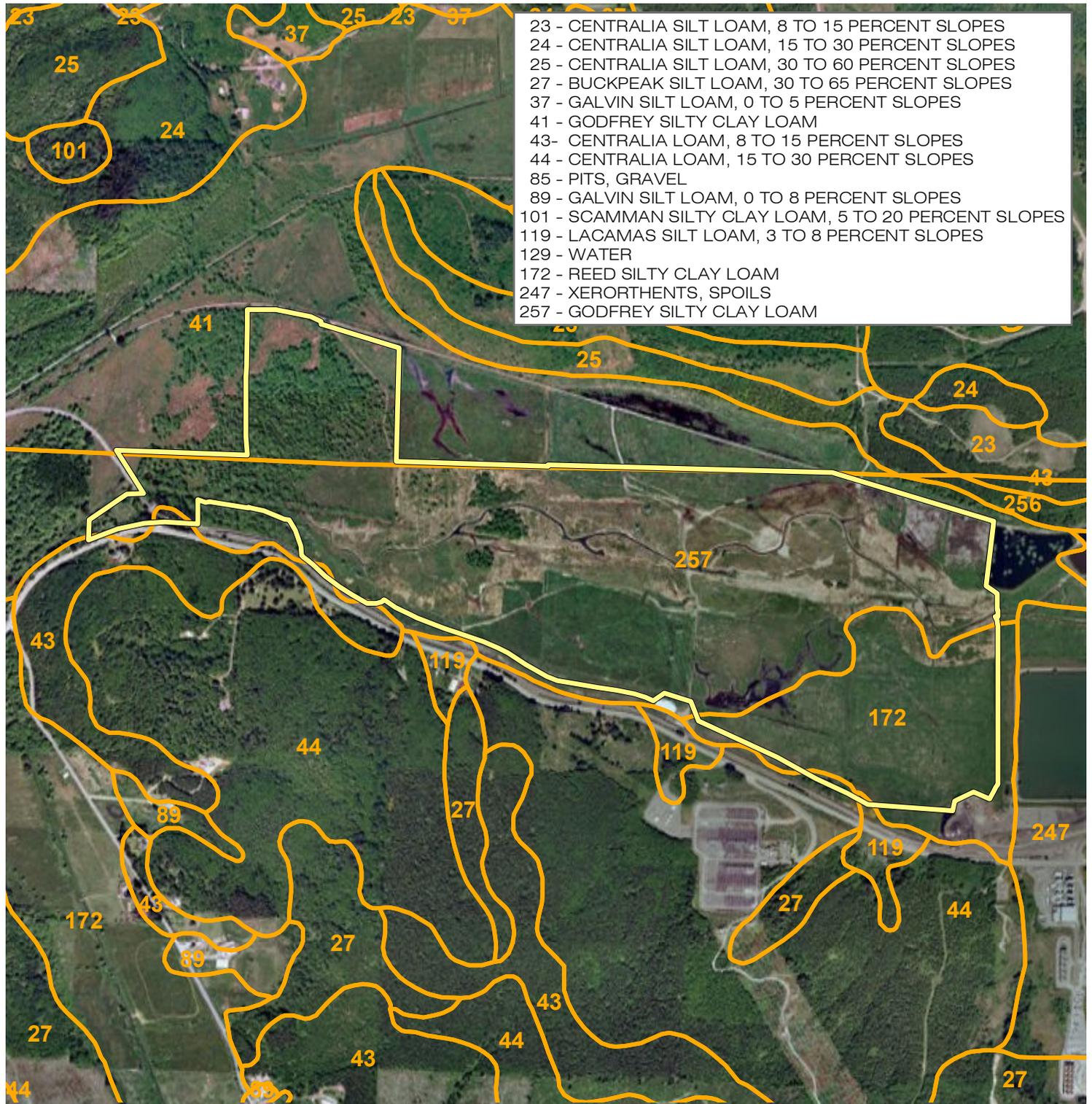
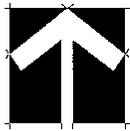


FIGURE A-3
EXISTING CONDITIONS
CHEHALIS BASIN MITIGATION BANK -
HANAFORD VALLEY SITE
CENTRALIA, WASHINGTON



- 23 - CENTRALIA SILT LOAM, 8 TO 15 PERCENT SLOPES
- 24 - CENTRALIA SILT LOAM, 15 TO 30 PERCENT SLOPES
- 25 - CENTRALIA SILT LOAM, 30 TO 60 PERCENT SLOPES
- 27 - BUCKPEAK SILT LOAM, 30 TO 65 PERCENT SLOPES
- 37 - GALVIN SILT LOAM, 0 TO 5 PERCENT SLOPES
- 41 - GODFREY SILTY CLAY LOAM
- 43- CENTRALIA LOAM, 8 TO 15 PERCENT SLOPES
- 44 - CENTRALIA LOAM, 15 TO 30 PERCENT SLOPES
- 85 - PITS, GRAVEL
- 89 - GALVIN SILT LOAM, 0 TO 8 PERCENT SLOPES
- 101 - SCAMMAN SILTY CLAY LOAM, 5 TO 20 PERCENT SLOPES
- 119 - LACAMAS SILT LOAM, 3 TO 8 PERCENT SLOPES
- 129 - WATER
- 172 - REED SILTY CLAY LOAM
- 247 - XERORTHENTS, SPOILS
- 257 - GODFREY SILTY CLAY LOAM



SCALE: 1 INCH = 1,200 FEET

LATITUDE: 46° 45' 42.50" N
 LONGITUDE: 122° 53' 02.00" W

SOURCE: AERIALS EXPRESS, 2009

CASCADE ENVIRONMENTAL GROUP

WOMBLE CARLYLE
ECOLOGY
 INNOVATIONS, LLC

FIGURE A-4
SOILS MAP
 CHEHALIS BASIN MITIGATION BANK -
 HANAFORD VALLEY SITE

CENTRALIA, WA

SEPTEMBER 2011

Exhibit A

Hanaford Valley Conservation Easement North Unit

An easement for wetlands conservation purposes lying over, under and across that portion of the East Half of the Southeast Quarter of the Southeast Quarter of Section 23, Township 15 North, Range 2 West, W.M. in Thurston County, Washington described as follows:

BEGINNING at the southeast corner of said subdivision; thence $N87^{\circ}42'53''W$ a distance of 656.22 feet to the west line of said subdivision; thence $N1^{\circ}38'57''E$ along said west line a distance of 1147.54 feet to the northwest corner of said subdivision; thence $S73^{\circ}00'43''E$ along the north line of said subdivision a distance of 678.70 feet; thence $S1^{\circ}33'05''W$ along the east line of said subdivision distance of 975.29 feet to the Point of Beginning.

TOGETHER with and subject to easements, covenants, conditions, restrictions and reservations of record.

Hanaford Valley Conservation Easement West Unit

An easement for wetlands conservation purposes lying over, under and across that portion of the North Half of the Northeast Quarter of Section 26, Township 15 North, Range 2 West, W.M. in Lewis County, Washington described as follows:

COMMENCING at the northwest corner of said subdivision; thence S87°42'53"E along the north line of said subdivision a distance of 212.71 feet to the True Point of Beginning; S32°06'21"E a distance of 441.81 feet; thence S87°23'18"W a distance of 144.85 feet; S55°38'03"W a distance of 392.62 feet; thence S2°00'31"W a distance of 172.45 feet; thence N70°01'10"E a distance of 270.29 feet; thence N77°41'09"E a distance of 231.91 feet; thence N85°26'46"E a distance of 181.83 feet; thence S85°45'59"E a distance of 280.08 feet; thence N0°10'24"W a distance of 208.86 feet; thence S73°25'37"E a distance of 72.34 feet; thence N80°13'45"E a distance of 34.42 feet; thence S80°19'22"E a distance of 337.15 feet; thence N0°54'38"W a distance of 456.85 feet; N87°42'53"W a distance of 1129.75 feet; thence to the True Point of Beginning.

TOGETHER with and subject to easements, covenants, conditions, restrictions and reservations of record.

Hanaford Valley Conservation Easement Northeast Unit

An easement for wetlands conservation purposes lying over, under and across that portion of the North Half of the Northeast Quarter and the North Half of the Northwest Quarter of Section 25, Township 15 North, Range 2 West, W.M. in Lewis County, Washington described as follows:

COMMENCING at the northeast corner of said Section 25; thence $N88^{\circ}31'55''W$ along the north line of said Section 25 a distance of 1487.10 feet to the True Point of Beginning; thence $N88^{\circ}31'55''W$ a distance of 1136.22 feet; thence $N88^{\circ}31'55''W$ a distance of 1316.36 feet; thence $S1^{\circ}55'47''W$ a distance of 79.40 feet; thence $S53^{\circ}52'29''E$ a distance of 374.83 feet; thence $N85^{\circ}16'12''E$ a distance of 376.27 feet; thence $S61^{\circ}05'31''E$ a distance of 525.91 feet; thence $N71^{\circ}06'21''E$ a distance of 844.82 feet; thence $N77^{\circ}29'28''E$ a distance of 371.46 feet; thence $S89^{\circ}02'59''E$ a distance of 196.38 feet; thence $S48^{\circ}34'43''E$ a distance of 603.03 feet; thence $S52^{\circ}09'12''E$ a distance of 763.63 feet; thence $S75^{\circ}00'44''E$ a distance of 145.75 feet; thence $S80^{\circ}00'52''E$ a distance of 185.98 feet; thence $N56^{\circ}12'29''W$ a distance of 117.21 feet; thence continuing $N6^{\circ}49'44''E$ a distance of 564.81 feet; thence $N73^{\circ}08'45''W$ a distance of 1453.30 feet to the True Point of Beginning.

TOGETHER with and subject to easements, covenants, conditions, restrictions and reservations of record.

Hanaford Valley Conservation Easement South Unit

An easement for wetlands conservation purposes lying over, under and across that portion of the North Half and Northeast Quarter of the Southeast Quarter of Section 25 and the Northeast Quarter of the Northeast Quarter of Section 26, all in Township 15 North, Range 2 West, W.M. in Lewis County, Washington described as follows:

COMMENCING at the northeast corner of said Section 25; thence S02°07'59"W along the north line of said Section 25 a distance of 1555.85 feet to the True Point of Beginning of said easement; thence S85°58'30"W a distance of 150.73 feet; thence S67°39'35"W a distance of 130.74 feet; thence S85°46'20"W a distance of 209.62 feet; thence N78°39'33"W a distance of 195.16 feet; thence N52°22'44"W a distance of 155.33 feet; thence N26°59'47"W a distance of 336.77 feet; thence N82°00'11"W a distance of 133.57 feet; thence S63°48'41"W a distance of 212.81 feet; thence N54°04'55"W a distance of 291.39 feet; thence N60°32'12"W a distance of 220.63 feet; thence N81°49'00"W a distance of 229.47 feet; thence S48°16'58"W a distance of 312.92 feet; thence N81°58'41"W a distance of 559.73 feet; thence N69°01'15"W a distance of 335.61 feet; thence N66°30'21"W a distance of 318.55 feet; thence N83°07'49"W a distance of 594.88 feet; thence S1°28'33"W a distance of 125.43 feet; thence N89°59'11"W a distance of 368.80 feet; thence S0°00'26"E a distance of 279.35 feet; thence S89°59'55"W a distance of 456.13 feet; thence N70°54'40"W a distance of 191.89 feet; thence N64°42'41"W a distance of 157.13 feet; thence N61°21'24"W a distance of 119.92 feet; thence S67°43'41"W a distance of 159.19 feet; thence S61°19'41"E a distance of 25.49 feet; thence S57°43'31"E a distance of 118.24 feet; thence S62°46'40"E a distance of 140.37 feet; thence S64°35'32"E a distance of 69.33 feet; thence S67°49'02"E a distance of 82.46 feet; thence S70°25'17"E a distance of 162.68 feet; thence S72°10'13"E a distance of 118.28 feet; thence S69°42'59"E a distance of 241.38 feet; thence S69°19'40"E a distance of 136.29 feet; thence S60°30'56"E a distance of 90.67 feet; thence S57°11'51"E a distance of 185.51 feet; thence S59°58'51"E a distance of 212.45 feet; thence S69°11'35"E a distance of 97.75 feet; thence S80°08'16"E a distance of 354.31 feet; thence S81°41'50"E a distance of 166.62 feet; thence S78°57'59"E a distance of 151.87 feet; thence S72°16'38"E a distance of 103.14 feet; thence S66°55'33"E a distance of 68.12 feet; thence N55°11'02"E a distance of 117.10 feet; thence S72°33'36"E a distance of 238.39 feet; thence S21°47'57"E a distance of 183.05 feet; thence S65°09'03"E a distance of 743.79 feet; thence S61°40'42"E a distance of 385.60 feet; thence S64°54'49"E a distance of 299.73 feet; thence S60°35'04"E a distance of 199.31 feet; thence S85°56'43"E a distance of 733.59 feet; thence N12°11'34"E a distance of 82.31 feet; thence N64°22'15"E a distance of 178.73 feet; thence S68°03'22"E a distance of 148.79 feet; thence N30°07'05"E a distance of 141.54 feet; thence N0°11'37"E a distance of 1098.44 feet to the True Point of Beginning.

TOGETHER with and subject to easements, covenants, conditions, restrictions and reservations of record.

Appendix B - Bank Development Plan and Design

Appendix B.1

B.1.1 Overview of the Bank Development Plan

The general goal of the Hanaford Valley site design is to rehabilitate and enhance wetlands adjacent to the Big Hanaford Creek Mitigation Site (US Army Corps of Engineers [Corps] permit #200400909) and the Rail Upgrade Mitigation site (Corps permit #200600278). These sites were developed by TransAlta Centralia Mining (TCM) to mitigate for unavoidable wetland impacts incurred from mining and rail infrastructure improvement projects. The sites were constructed in 2007-2008 and remained under TCM management until early 2011. Exhibit B, Sheet 1 (cover sheet) shows the location of the project and Sheet 2 shows the vicinity of existing mitigation sites relative to the proposed bank site.

The management of the existing mitigation sites was transferred to WCEI Chehalis MB, LLC in early 2011 to establish a single management program for both the existing mitigation sites and the proposed bank site, with the intent of improving efficiencies and site performance.

The Hanaford Valley bank site will provide 176.97 acres of rehabilitated, enhanced, and preserved riverine flowthrough wetland. The site will include palustrine forested, palustrine scrub-shrub, and palustrine emergent habitat types. The design of the bank site is consistent with the 2 existing mitigation projects, but minor refinements have been made to planting palette and irrigation approach to improve site performance. Analysis used to guide design includes a Wetland Delineation Report completed by Cascade Environmental Group (CEG 2011), a Hydrology Report and Drainage Analysis completed by Williamsburg Environmental Group (WEG 2011), a functions assessment completed by Cascade Environmental Group, and LiDAR data with supplemental topographic surveys completed by TransAlta (2007 and 2011). Other resources and supplemental memorandums are found in the Resource Folder.

The bank project includes ditch filling, removal of sediment pond berms, restoring segments of seasonal and semi-permanent tributary streams within the site, invasive species removal and native plant establishment. Hydrology will be provided to the site via overbank flooding of Big Hanaford Creek and tributary streams, groundwater inputs, and direct precipitation.

Floodplain interaction within the bank was restored in 2007 by re-aligning Big Hanaford Creek during the implementation of the Kopiah Project Wetland Mitigation Plan. Hydrologic, habitat, and water quality functions have been improved at the Big Hanaford Creek mitigation site, an approximately 600-foot wide corridor along the restored Big Hanaford Creek. The proposed bank would expand the floodplain to the surrounding areas, rehabilitating and enhancing wetland function in this portion of Hanaford Valley, further increasing the functional lift of the approved mitigation site.

Hydrology data collected by Jones & Stokes and URS Corporation (consultants) through wetland delineations and other fieldwork (Jones & Stokes 2005) indicate a high groundwater table exists throughout the proposed bank early in the growing season, with dryer conditions and absence of a high water table during the summer and fall months. Although soils begin to dry during summer months and the soil is not saturated throughout the wetland, soil moisture is present. The presence of wetland shrub and tree species in similar soils with similar hydroperiods downstream of the mitigation site indicate that forested and scrub-shrub wetlands would be supported at the Big Hanaford Creek site.

Most of the proposed bank is vegetated by pasture grasses and weeds. Reed canarygrass (*Phalaris arundinacea*), bentgrass (*Agrostis* spp.), meadow foxtail (*Alopecurus pratensis*), velvet grass (*Holcus lanatus*), and Himalayan blackberry (*Rubus armeniacus*) are among the dominant species throughout the broad floodplain.

Preservation areas proposed for the west and north units of the proposed bank are vegetated by mature Oregon ash (*Fraxinus latifolia*) forest with a predominantly native understory of Nootka rose (*Rosa nutkana*), twinberry (*Lonicera involucrata*), willow (*Salix*, spp.), slough sedge (*Carex obnupta*), and small-fruited bulrush (*Scirpus microcarpus*). This mature forest community extends beyond the boundary of the proposed bank onto existing mitigation properties and adjacent private properties.

The inactive sediment ponds in the northeast unit have not been maintained and pond berms are sloughing. However, these areas still affect surface water movement and create wetter habitat than in surrounding wetlands. These inactive ponds are dominated by cattails (*Typha latifolia*) and lesser amounts of other plant species tolerant of long-term inundation.

The Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2007) maps the greater portion of the Hanaford Creek floodplain as the very deep, poorly drained Godfrey and Reed series silty clay loams, both of which are hydric soils (Exhibit B, Sheet 3).

B.1.2 Site Construction

Grading at the Hanaford Valley site would restore typical floodplain topography by filling ditches, restoring seasonal and semi-permanent stream channel segments, and removing berms in the sediment pond areas (Exhibit B, Sheets 4 and 5). Grading will remove human-made features from the Big Hanaford Creek floodplain, improve hydrologic and water quality functions provided by the Hanaford Valley bank site, and provide a self-sustaining design by restoring typical floodplain conditions.

The remnant sediment ponds in the northeast unit are atypical floodplain features that impound surface floods behind the remnant pond berms and within shallow depressions in between the berms. The remnant ponds deflect surface flows, routing floodwaters towards the main channel of Big Hanaford Creek. The berms likely contribute to higher flood velocities by constricting flood flows and directing floodwaters back towards the main channel of Big Hanaford Creek.

In order to convey off-site flows from roadside ditches and offsite streams that are routed onto the site, stream reconnection channels will be constructed at three existing culvert outfalls (Exhibit B, Sheets 6-8). These stream reconnection channels have been designed using natural channel design principles in conjunction with hydrologic and hydraulic analyses, and with historic aeriels.

B.1.2.1 Construction Sequence

The following will be implemented, as necessary, for the Hanaford Valley site construction activities (as shown on Exhibit B, Sheet 9):

1. Install temporary construction entrances (CE).
2. Install stone check dams (CD) and silt fences (SF).
 - Upstream of check dams, ditches will act as sediment basins.
3. Grade and fill with direct supervision by engineer in the field. Site construction will:
 - Limit disturbances to areas that can be stabilized at the end of each work day.
 - Maintain a flow path to the floodplain at culverts.
 - Fill ditches from the upstream end.
4. Once grading and filling is complete, all areas of disturbance will be permanently stabilized as part of the planting plan shown on Exhibit B, Sheet 12.

5. Perimeter controls and construction entrances will be removed only when the site is determined to be stable. Check dams will remain in place.

The following is a general schedule of the stages of construction planned for the Hanaford Valley site.

Table B.1 Construction Implementation

Pre-Treatment 2011	Herbicide Application	Early July
	Disking	September
	Second Herbicide Application	September
Site Preparation 2011	Seed Application	Mid-September
Site Preparation 2012	Herbicide Application	June
	Disking	Late July
	Herbicide Application	Early August
	Native Seed Application	Late August
	Irrigation	Late August
Earthwork 2012	Filling ditches, restoring seasonal and semi-permanent stream channel segments, removal of remnant sediment pond berms, and installation of habitat features.	July-August
Plant Installation 2012-2013	Bare root plants installed	Nov-April
	Install Sedge Plugs	December - April
Cedar Installation 2015	Install Cedars	December - April

B.1.2.2 Site Preparation

B.1.2.2.1 Invasive Control

Invasive species will be controlled through a combination of herbicide application, disking, haying, and native vegetation management. The invasive species control approach used on the existing Big Hanaford Creek and Rail Upgrade mitigation sites has proven effective and is the basis for the Hanaford Valley Mitigation Bank site approach. Invasive species are to be treated over a 2-year basis and areas cleared by disking are seeded with native grasses and forbes. Seeded areas are then irrigated to initiate seed germination.

Existing reed canary grass, along with lesser amounts of Armenian and cut-leaf blackberry (*Rubus armeniacus* and *R. laciniatus*) and Canada thistle (*Cirsium arvense*) will be eradicated with multiple treatments of herbicide and

disking. Areas dominated by reed canarygrass were sprayed from a tractor-mounted herbicide applicator, using commercial herbicide approved for use in wetlands. The first spraying occurred prior to boot stage when the water levels receded, in June of 2011. The reed canarygrass was then mowed and disked using typical deep disking agricultural equipment approximately 1 month following the herbicide application. Following the disking and spray treatments, the treated areas were seeded with a seed mix of sterile wheat and red fescue to rapidly establish herbaceous cover to address erosion issues. A second year of treatment will be conducted prior to construction activities in 2012 to treat reed canarygrass re-growth. Following earthwork, another application will be conducted and the site will be disked to prepare a seedbed for a native seed mix application. After application of the native seed mix, seeded areas will be irrigated to aid germination and quickly establish a native herbaceous cover. Populations of Himalayan blackberry and cut-leaf blackberry will be mechanically removed and sprayed for during the 2011 and 2012 site preparation.

Yellow flag iris (*Iris pseudacorus*) occurs in the long duration inundation area and in adjoining ditches in the south unit. Yellow flag iris will be mechanically removed using an excavator and disposed of offsite during the 2012 construction. Areas infested with yellow flag iris will also be sprayed in early fall 2012 to remove smaller clumps and any re-growth.

Invasives species in the Oregon ash underplanting area will be treated with spring/summer and summer/fall herbicide applications similarly to the rehabilitation and enhancement areas. This area will not be disked because disking could damage roots of existing ash trees.

B.1.2.3 Grading

B.1.2.3.1 Ditch Filling and Grading

All existing ditches within the bank site will be filled to match the surrounding floodplain surface elevations. Segments of ditches will be modified in 4 locations to accommodate restoration of seasonal and semi-permanent stream segments (Exhibit B, Sheets 6-8). Restored stream channel segments are designed to flood on an approximate 1.2 year return interval, a similar frequency to overbank flood events on Big Hanaford Creek.

Staging Areas

Project construction will be staged at 2 locations (labeled as CE on Exhibit B, Sheet 9) for both earthwork and plant installation. These areas provide access to both the north and south side of Big Hanaford Creek, and were both used as staging during the construction of the Big Hanaford Creek mitigation site. The staging areas are filled berms that provide stable and safe locations for equipment and materials storage. An access bridge is located over Big Hanaford Creek at the approximately east-west midpoint of the Big Hanaford Creek mitigation site that will be used for foot traffic during site planting; equipment will not use the bridge during site construction.

Ditches

Site construction will include filling 8,050 linear feet of ditch to match surrounding floodplain elevations. The ditches will be filled with ditch spoils material located along the ditch edge or with suitable fill material brought to the site. Imported soil will be native to the Big Hanaford basin and will be of silty clay loam or similar texture.

Stream Segment Restoration

Constructed stream channel segments will be constructed to convey surface waters discharged from culverts underneath the existing rail spur to floodplain swales or Big Hanaford Creek. Restored stream segments that receive discharges from outfalls 1 & 2 (Exhibit B, Sheets 2, 6, and 7) will convey water from culvert outfalls through graded channels that discharge to existing floodplain swales, and finally to Big Hanaford Creek. Each channel is designed so that the creek will overbank flood at approximately the 1.2 year return interval. Riparian plantings will be established within a 50-foot wide corridor on each side of the restored stream channels, but will not be planted in the channel bottoms. Stream channel alignments were identified using aerial photos and then

ground located using GPS units to use existing floodplain swales to the greatest extent possible. Segments from outfall 3 (Exhibit B, Sheets 2 and 8) will receive water brought to the bank site through existing conveyance ditches into restored stream channels that will meander in the eastern portion of the bank before being routed to the Big Hanaford Creek at the existing ditch discharge location. Outfall 3 is semi-permanent and was therefore routed to a permanent connection with Big Hanaford Creek (existing ditch channel) that will be modified; the existing ditch channel is oversized and will therefore be backfilled and stabilized with log vanes to provide grade control. The restored channel will meander within the existing ditch confines for approximately the last 300 feet of channel length. Constructing the restored channel at outfall 3 will necessitate grading through existing ditch spoil berms that will be graded to match surrounding floodplain elevations. As with outfalls 1 & 2, outfall 3 will be planted with a 50 foot wide riparian corridor along each restored bank and is designed to flood at a 1.2 year return interval.

Abandoned Sediment Pond Areas

The berms in the abandoned sediment pond areas will be removed and spoils will be deposited to improve positive drainage to Big Hanaford Creek via an existing swale in the Big Hanaford Creek mitigation site (Exhibit B, Sheet 4). The remnant ponds and berms are currently atypical floodplain features; occurring as 3 upland berms oriented perpendicular to stream flows separated by shallow depressions. Pond berms will be leveled and the spoils placed near the roads in low areas within the sediment pond areas to improve positive drainage towards Big Hanaford Creek. The existing cattails within the pond cells were treated with herbicide in summer 2011 and will be treated again in 2012. Any areas of bareground will be seeded with native grasses to establish a diverse herbaceous layer. The pond rehabilitation area will then be planted with woody shrub vegetation.

B.1.2.4 Habitat Features

A total of 40 snag habitat structures and 6 in-channel rootwads will be installed on the site before the site has been seeded. All snag habitat features will be conifer trees, approximately 18-feet in length and 10-inches in diameter, installed as snag features with the bases buried below grade. Rootwads will be attached to 12” diameter conifer stems, installed in the semi-permanent stream reconnection channel.

B.1.2.5 Seeding and Planting

WCEI Chehalis MB, LLC will restore typical native plant communities to the restoration, rehabilitation, and enhancement areas (actively managed areas) of the Hanaford Valley mitigation bank site through eradicating existing populations of reed canarygrass and other non-native species, seeding with native grasses and forbs, and planting native trees, shrubs, and emergent species (Exhibit B, Sheets 12 and 13). Vegetation improvements will expand on the existing mitigation efforts already in place along Big Hanaford Creek and the existing mature Oregon ash forests that are included as preservation components of the existing mitigation projects and proposed Hanaford Valley bank site. Once re-vegetated, the Hanaford Valley will be dominated by native species across the valley floor, connecting with the surrounding uplands that are managed as commercial timber lands.

The rehabilitation and enhancement areas will be planted with woody vegetation and sedge plugs during late winter to early spring (approximately December-April) to allow for use of bare root stock and minimize planting exposure to flooding. Bare root trees and shrubs will be used so plant material can be transported on foot, protecting the native grass and forb cover. Woody material will be planted in sinuous rows to allow for maintenance access after planting. Sedge plugs will be planted in a grid pattern in emergent areas and will augment existing native plant communities.

Supplemental western redcedar (*Thuja plicata*) plantings will be installed in the forested units after the Year 3 monitoring is complete to provide diversity. Cedars plantings will be proportioned by treatment unit size and scattered throughout the forested wetland areas. The cedars will be located randomly in the forested wetlands where growing conditions appear to be most suitable, considering hydrologic conditions and presence of partial shade.

The Oregon ash underplanting area will be planted with clumps of western redcedar and shrubs (rose and snowberry) to aid in forest succession and provide diversity. The plantings will be arranged in clumps in locations with suitable growing conditions. Table B-1 shows the proposed planting schedule for the Hanaford Valley site.

Table B-2 Planting Schedule

Quantity	Botanical Name	Common Name	Specification	Indicator	Height	O.C. Spacing
Riparian Scrub-Shrub Wetland: 19.67 Acres						
Shrub Plant Palette						
4,760	<i>Cornus sericea</i>	Red-Osier Dogwood	Bare Root	FACW	12"-18" min.	6'
4,760	<i>Rosa nutkana</i>	Nootka Rose	Bare Root	FAC	12"-18" min.	6'
7,141	<i>Salix lucida spp. lasiandra</i>	Pacific Willow	Live Stake	FACW+	12"-18" min.	6'
7,140	<i>Salix sitchensis</i>	Sitka Willow	Live Stake	FACW	12"-18" min.	6'
Scrub-Shrub Wetland: 63.36 Acres						
Shrub Plant Palette						
8,625	<i>Cornus sericea</i>	Red-Osier Dogwood	Bare Root	FACW	12"-18" min.	8'
4,313	<i>Crataegus douglasii</i>	Douglas' Hawthorne	Bare Root	FAC	12"-18" min.	8'
4,312	<i>Malus fusca</i>	Crabapple	Bare Root	FAC+	12"-18" min.	8'
4,313	<i>Physocarpus capitatus</i>	Pacific Ninebark	Bare Root	FAC+	12"-18" min.	8'
12,938	<i>Rosa nutkana</i>	Nootka Rose	Bare Roots	FAC	12"-18" min.	8'
8,624	<i>Salix sitchensis</i>	Sitka Willow	Live Stake	FACW	12"-18" min.	8'

Quantity	Botanical Name	Common Name	Specification	Indicator	Height	O.C. Spacing
Utility Corridor Scrub-Shrub Wetland: 16.65 Acres						
Shrub Plant Palette						
2,242	<i>Cornus sericea</i>	Red-Osier Dogwood	Bare Root	FACW	12"-18" min.	8'
1,121	<i>Crataegus douglasii</i>	Douglas' Hawthorne	Bare Root	FAC	12"-18" min.	8'
1,121	<i>Malus fusca</i>	Crabapple	Bare Root	FAC+	12"-18" min.	8'
1,121	<i>Physocarpus capitatus</i>	Pacific Ninebark	Bare Root	FAC+	12"-18" min.	8'
3,363	<i>Rosa nutkana</i>	Nootka Rose	Bare Roots	FAC	12"-18" min.	8'
2,242	<i>Salix sitchensis</i>	Sitka Willow	Live Stake	FACW	12"-18" min.	8'
Emergent Swale Wetland: 4.89 Acres¹						
Herbaceous Plant Palette						
5,325	<i>Carex obnupta</i>	Slough Sedge	Plugs	OBL	-	2'
5,325	<i>Scirpus microcarpus</i>	Small-Fruited Bulrush	Plugs	OBL	-	2'

Quantity	Botanical Name	Common Name	Specification	Indicator	Height	O.C. Spacing
Forested Wetland: 41.32 Acres						
Shrub Plant Palette						
2,589	<i>Cornus sericea</i>	Red-Osier Dogwood	Bare Root	FACW	12"-18" min.	8'
2,589	<i>Crataegus douglasii</i>	Douglas' Hawthorne	Bare Root	FAC	12"-18" min.	8'
2,588	<i>Malus fusca</i>	Crabapple	Bare Root	FAC+	12"-18" min.	8'
5,334	<i>Rosa nutkana</i>	Nootka Rose	Bare Root	FAC	12"-18" min.	8'
2,589	<i>Salix sitchensis</i>	Sitka Willow	Live Stake	FACW	12"-18" min.	8'
Tree Plant Palette						
7,907	<i>Fraxinus latifolia</i>	Oregon Ash	Bare Root	FAC+	12"-18" min.	12'
1,883	<i>Populus trichocarpa</i>	Black Cottonwood	Bare Root	FAC+	12"-18" min.	12'
2,761	<i>Salix lucida spp. lasiandra</i>	Pacific Willow	Live Stake	FACW	12"-18" min.	12'
250	<i>Thuja plicata</i>	Western Redcedar	Bare Root	FAC	12"-18" min.	12'

Quantity	Botanical Name	Common Name	Specification	Indicator	Height	O.C. Spacing
Forest Understory: 7.31 Acres¹						
Shrub Plant Palette						
487	<i>Rosa nutkana</i>	Nootka Rose	Bare Root	FAC	12"-18" min.	8'
487	<i>Symphoricarpos albus</i>	Snowberry	Bare Root	FACU	12"-18" min.	8'
Tree Plant Palette						
351	<i>Thuja plicata</i>	Western Redcedar	Bare Root	FAC	12"-18" min.	12'
Upland Buffer: 3.08 Acres						
Shrub Plant Palette						
582	<i>Sambucus racemosa</i>	Red Elderberry	Bare Root	FACU	12"-18" min.	8'
582	<i>Symphoricarpos albus</i>	Snowberry	Bare Root	FACU	12"-18" min.	8'
Tree Plant Palette						
622	<i>Pseudotsuga menziesii</i>	Douglas-Fir	Bare Root	FACU	12"-18" min.	12'
310	<i>Thuja plicata</i>	Western Redcedar	Bare Root	FAC	12"-18" min.	12'

¹ Spot plant where needed.

Seed will be applied to the entire site after ground disturbing construction activities are complete to reduce erosion, limit invasive species colonization, to provide a native groundcover, and food for wildlife. The proposed seed mix for the seed application is in Table B-3.

Table B-3 Native Seed Mix for the Hanaford Valley Mitigation Bank

Common Name	Scientific Name	Mix Proportion
Spike bentgrass	<i>Agrostis exarata</i> (FACW)	30%
Tufted hairgrass	<i>Deschampsia cespitosa</i> (FACW)	20%
Red fescue	<i>Festuca rubra var. rubra</i> (FAC+)	20%
Meadow barley	<i>Hordeum brachyantherum</i> (FACW)	25%
Large leaf lupine	<i>Lupinus polyphyllus</i> (FAC+)	5%

B.1.3 Maintenance and Invasive Species Control

After bank construction, the sponsors will implement the site maintenance program. The maintenance program will include irrigation of site plantings, treatment of invasive species, and protection of the site from vandalism or herbivory using an adaptive management approach. All planted vegetation will be irrigated for 1-2 years post installation using aerial sprinklers. Water will be supplied from TransAlta Centralia Mining sediment pond system, using water that meets discharge standards. Irrigation will begin as natural precipitation decreases, approximately June-July 2012. Plants will be irrigated with approximately 2” of water every 2 weeks, or less if plants appear healthy. Irrigation will continue until early September. Irrigation efforts will be repeated during Year 2 if deemed necessary by the bank sponsor and the IRT based on Year 1 monitoring results.

Invasive species will be treated with herbicide applied by backpack sprayer or from small off road vehicle. Invasive species will be treated similarly as with the existing Big Hanaford Creek mitigation site, which has proven to be a successful approach. Invasive species will be treated at 3 different times during summer months: late June, early August, and mid-September to effectively treat invasive species occurring in various hydrologic regimes.

The site is protected by security personal employed by TransAlta Centralia Mining, and protected by gates. Any dumping, vandalism, or trespassing will be rectified and prosecuted. Herbivory control will be implemented as needed, no herbivory control was needed for establishing plants at the existing mitigation sites.

B.1.4 Erosion Control and Stormwater Protection

A copy of the Stormwater Pollution Prevention Plan (SWPPP) was prepared in compliance with NPDES permit requirements, and is provided in the Resource Folder. This SWPPP was prepared by Cascade Environmental Group and will be submitted to Lewis County as a part of the grading permit application required to implement the Hanaford Valley Site of the Chehalis Mitigation Bank. The purpose of the SWPPP is to describe the proposed construction activities and all temporary and

permanent erosion and sediment control (TESC) measures, pollution prevention measures, inspection/monitoring activities, and recordkeeping that will be implemented during the proposed construction project (Exhibit B, Sheets 10 and 11).

B.1.4.1 Inspection and Monitoring

All BMPs outlined in the Hanaford Valley Design Plan and SWPPP shall be inspected, maintained, and repaired as needed to assure continued performance of their intended function. Site inspections shall be conducted by a person who is knowledgeable in the principles and practices of erosion and sediment control. This person has the necessary skills to assess the site conditions and construction activities that could impact the quality of stormwater, and assess the effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges.

- A Certified Erosion and Sediment Control Lead shall be onsite or on-call at all times.
- Whenever inspection and/or monitoring reveals that the BMPs identified in the SWPPP are inadequate, due to the actual discharge of or potential to discharge a significant amount of any pollutant, appropriate BMPs or design changes shall be implemented as soon as possible.

References

LeDuc, Tim. Transalta Centralia Mine Senior Environmental Specialist. Multiple emails to Tammy Stout to update site flood conditions.

Jones & Stokes. 2007. Mitigation Bank Prospectus. Hanaford Valley Mitigation Bank. September. (J&S 00405.07.) Portland, OR. Prepared for TransAlta Centralia Mining, LLC.

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Jones & Stokes. 2005. Kopiah Project Habitat Mitigation and Monitoring Plan. November. J&S 004456.04. Prepared for TransAlta Centralia Mining, LLC.

WEG 2011. Hydrology Report and Drainage Analysis, Chehalis Basin Mitigation Bank-Hanaford Valley Site. September. CEG 004. Prepared for WCEI Chehalis MB, LLC.

Exhibit B, Sheets 1-16

Hanford Valley Bank Site Design Plan

Appendix C – Bank Objectives and Performance Standards

Appendix C.1

C.1.1 Application of the Bank Objectives and Performance Standards

A. Implementation of the Hanaford Valley site of the Chehalis Basin Mitigation Bank is anticipated to result in substantial gains in aquatic ecosystem functions, as compared to those now present, or those that would likely accrue on the site if the Bank were not constructed. The Sponsor must be able to demonstrate tangible aquatic ecosystem gains before Bank credits can be awarded for sale, use, other transfer, because these functional gains will be used to offset comparable losses to other components of the aquatic environment in the Bank service area. The Bank's success will be measured by the enumerated objectives, each of which is subdivided into specific performance standards. The prescribed performance standards each provide a gauge for measuring the success of the ecological restoration and enhancement efforts at the Bank.

B. Unless otherwise noted, all documentation required for demonstrating attainment of performance standards will be submitted to the IRT for review and approval as a condition of credit award. Documentation can typically be included in required monitoring reports. IRT award of credits will be reflected in a letter issued using a joint letterhead and signed by the Co-Chairs.

C. Recreational, educational, and scientific activities that do not conflict with the use limitations or other provisions of the conservation easement, do not interfere with the delineated purposes and goals of the Bank, and do not adversely affect the ecological viability and functionality of the Bank may take place on the Bank site. Specifically, the site may be used by the owners and guests for walking, bird watching and other passive recreation including hunting and fishing.

D. All performance standards apply to the entire bank site including the buffer area.

C.1.2 Bank Objectives and Performance Standards

Bank objectives identify necessary activities to provide and protect the functions provided at the mitigation bank site; bank performance standards provide specific objective measures that demonstrate the objective was achieved. The protection mechanisms and bank instrument finalization provide assurances and protections that the approved MBI is implemented according to plan. The objectives and performance standards addressing site hydrologic and vegetation conditions provide measurable assurances that the functional improvements that were anticipated based on site design, are being provided. Measures of site hydrologic conditions will demonstrate that the site includes intended wetland area of the appropriate HGM class. Achieving vegetation performance standards will demonstrate the intended vegetation communities have been established. Achieving intended hydrologic and vegetative conditions, at an IRT-approved site location, demonstrates that site functions have been restored as intended.

As stated in Appendix A, Section A.1.1 the ecological goals of the proposed mitigation bank at the Hanaford Valley site are to:

- Improve hydrologic, water quality, and habitat functions in the mitigation bank site; and
- Provide a self-sustaining wetland and stream complex that will not require maintenance.

Objective 1: Protect Aquatic Ecosystems at the Bank

Permanently protect aquatic ecosystem functions at the Bank by instituting the Instrument and implementing a conservation easement with permanent funding for site stewardship. Each of the performance standards associated with this objective must be met before any Bank credits may be awarded, and before any construction or other implementation activities may be initiated pursuant to this Instrument. Any construction or implementation activities conducted on-site prior to the inception of the establishment period must cease as of the effective date of this Instrument pursuant to Article VI.B.1, until the Objective 1 performance standards have been accomplished. The initial award of credits in recognition of accomplishment of these performance standards will serve as the IRT’s notification that construction and implementation activities are authorized to commence.

Performance Standard	Documentation
1A. Complete the development of an appropriate Mitigation Banking Instrument and Appendices.	Mitigation Banking Instrument has been signed by the Sponsor and the applicable regulatory agencies. An original signed Instrument must be provided to each of the signatories.
1B. Protect ecosystem function by placing IRT-approved conservation easements on the property.	Provide the IRT copies of the signed, IRT-Approved conservation easements and evidence that they have been recorded with Lewis County and placed on the property title.
1C. Provide financial assurance by establishing an IRT-accepted financial assurance mechanism pursuant to the requirements established in Article III.C.1. of the Instrument.	Demonstrate to the IRT that a compliant and acceptable financial assurance mechanism has been established to provide financial assurance for the establishment period.
1D. Establish a Long-Term Management and Maintenance Endowment Fund escrow account and develop an escrow agreement, all pursuant to the requirements established in Article III.C.2 of the Instrument.	Demonstrate to the IRT that a Long-Term Management and Maintenance Endowment Fund has been initiated through establishment of a compliant and acceptable escrow account. Enter into an escrow agreement with the Corps and Ecology.

Objective 2: Hydrology

Restore site hydrologic conditions by removing floodplain alterations. Remove sediment pond berms, fill ditches, regrade ditch spoils, and reconnect tributary streams.

Performance Standard	Documentation
2A. Fill ditches on site. Redirect surface flows of stream tributaries on to the site and grading of the site stream reconnection channel completed according to IRT approved plans.	As-built drawings and photographs showing completed grading and stream reconnection areas and key elevations are approved by the IRT. This grading As-Built report can be submitted before site planting is complete.
2B. A minimum of 161.1 acres of wetland will be present on the site at years 5 and 10 following approval of As-built grading report.	To demonstrate wetland hydrology, soil will be saturated to the surface, or there will be free water in soil pits or shallow water wells at 12 inches or less below the soil surface for at least 10% of the growing season, where the growing season is defined as April 1 through October 31.

	<p>A monitoring report showing the data from wells and/or soil pits sufficient to document the extent of wetland hydrology on the site is approved by the IRT.</p> <p>The wetlands on site will be delineated according to the 1987 Corps of Engineers Delineation Manual and the Regional Supplement; Western Mountains, Valleys, and Coast Region (V2.0). Wetland delineation report is approved by the IRT.</p>
2C. Stream reconnection channels will convey water onto the site as designed and will not cause excessive soil erosion in Years 1 and 3.	Inspect reconnection channels for soil erosion and remediate using rock structures at outfalls, or supplemental planting/seeding as necessary.

Objective 3: Vegetation

Re-establish typical native vegetation communities appropriate to the hydrologic regimes present at the Bank site.

Performance Standards for All Areas of the site

Performance Standard	Documentation
3A. Planting of bank site is complete according to IRT-approved plans. Provide a modified financial assurance that conforms to the required amount for a letter of credit, or the required penal sum for a surety bond, as specified in Article III.C.1.d.(i) of the Instrument.	As-built planting plan showing completed planting, approved by the IRT. The As-built planting plan will include plant density, species, seeding rate and planted areas for each community type shown on the approved planting plan. Demonstrate to the IRT that a compliant and acceptable modified financial assurance has been established.
3B. Within each habitat type (PEM, PSS, PFO, RSS), Armenian blackberry, reed canarygrass, Canada Thistle, and yellow-flag iris will not collectively exceed 25% aerial cover in years 3, 5, 7, and 10.	Monitoring reports documenting invasive species presence and percent cover approved by IRT. Document the percent cover of invasive species in each habitat type in years 3, 5, 7, and 10.
3C. Over the entire site, zero tolerance of Japanese knotweed (and related hybrids), and purple loosestrife colonization is maintained. Map any specimens and eradicate during the growing season of the same year. Additional species may be added to this list based on site conditions, as negotiated between the Sponsor and IRT.	Monitoring reports documenting the identification and eradication approved by IRT. Inventory annually and include in monitoring reports 1, 3, 5, 7, and 10.

Performance Standards for the Palustrine Emergent Wetland Area

Performance Standard	Documentation
3D. In the Palustrine Emergent wetland area, native plant cover will exceed 80% in years 3, 5, 7, and 10.	Monitoring reports documenting native plant cover are approved by IRT. Provide photos from established photo points.
3E. A minimum of 4.50 acres of Palustrine Emergent wetland will be present within the bank at years 3, 5, 7, 10.	Wetland habitat areas will be mapped by a qualified biologist in years 3, 5, 7, and 10 using sub-meter GPS equipment and mapping software.

Performance Standards for Palustrine Scrub-shrub Wetland Area

Performance Standard	Documentation
3F. Native woody plant species in the Palustrine Scrub-Shrub wetland will have a stem density of 510 native stems per acre (75% survival). In Years 1 and 3 following as-built approval.	Monitoring reports documenting shrub stem density approved by the IRT. Stem density for shrubs within PSS plots will be recorded in Years 1 and 3.
3G. Native woody plant species in the Palustrine Scrub-Shrub wetland will have a minimum aerial cover of 40% at Year 5, 50% cover at Year 7, and 60% cover at Year 10.	Monitoring reports documenting cover of native woody plants are approved by IRT.

Performance Standards for Palustrine Forested Wetland Area

Performance Standard	Documentation
3H. Native tree plant species in the Palustrine Forested wetland will have a stem density of 225 native stems per acre. In Year 1 and 200 native tree stems per acre in Year 3 following as-built approval.	Monitoring reports documenting tree stem density approved by the IRT. Stem density for trees within PFO plots will be recorded in Years 1 and 3.
3I. Native woody plant species in the Palustrine Forested wetland will have a minimum aerial cover of 40% at Year 5, 50% cover at Year 7, and 60% cover at Year 10.	Monitoring reports documenting cover of native woody plants are approved by IRT.

Performance Standards for Upland Buffer Area

Performance Standard	Documentation
3J. Native tree plant species in the Upland Buffer Area will have a stem density of 200 native stems per acre (65% survival) in Year 1 and 185 native tree stems per acre (~60% survival) in Year 3 following as-built approval.	Monitoring reports documenting tree stem density approved by the IRT. Stem density for trees within Upland Buffer plots will be recorded in Years 1 and 3.
3K. Native shrub species in the Upland Buffer Area will have a stem density of 310 (82 % survival) native shrub stems per acre in Year 1 and in Year 3 following as-built approval.	Monitoring reports documenting tree stem density approved by the IRT. Stem density for trees within Upland Buffer plots will be recorded in Years 1 and 3

Performance Standards for Riparian Scrub-shrub Wetland Area

Performance Standard	Documentation
3L. Native woody plant species in the Riparian Scrub-Shrub wetland will have a stem density of 906 native stems per acre. In Years 1 and 3 following as-built approval.	Monitoring reports documenting shrub stem density approved by the IRT. Stem density for shrubs within RSS plots will be recorded in Years 1 and 3.
3M. Native woody plant species in the Riparian Scrub-Shrub wetland will have a minimum aerial cover of 40% at Year 5, 50% cover at Year 7, and 60% cover at Year 10.	Monitoring reports documenting cover of native woody plants are approved by IRT.

Objective 4: Wildlife

Improve wildlife habitat by installing habitat features.

Performance Standard	Documentation
4A. As-built plans will demonstrate the installation of 20 wooden snags, as indicated on IRT – approved project plans.	As-built plan set showing location of installed snag structures.
4B. Wooden snags will be retained throughout the monitoring period, as shown on IRT-approved project plans.	Monitoring reports documenting presence of wooden snags are approved by IRT.

Appendix D – Credit Generation and Award Schedule

Appendix D.1

D.1.1 Generation of Credits

A. Credits will be established and awarded to the Bank upon the Sponsor’s demonstration that the performance standards listed in Appendix C have been met.

B. A credit is defined as a unit of measure representing the increase in the ecological value of the bank site. A credit for this Bank represents the increase in functions, values, and areal extent of the wetland systems on the project site. This increase in function results from the re-establishment and enhancement of wetlands on the Bank site. The anticipated credits reflected in Table D-1 are determined based on the anticipation that the Bank will rate as a high functioning system at maturity. Total acreages based on the mitigation types and actions are depicted in Figure D-1 (Mitigation Types). The wetland systems anticipated at the Bank include areas that would be classified as both depressional wetlands under the HGM classification system and palustrine wetlands under Cowardin classification system. A credit is also based on the water quality, water quantity and habitat functions the Bank will provide as performance standards are met.

C. The precise number of credits actually generated by the Bank cannot be determined until the project is constructed and the success of restoration and enhancement activities is assessed by the IRT. The final number of credits will be determined by the IRT and will be based on achievement of the performance standards set forth in Appendix C of this instrument.

D. Credits generated by the Bank will be calculated as shown in the table below:

Table D.1 Wetland Credit Generation by Bank Development Activity

Bank Activity	Mitigation Actions	Affected Area (acres)	Credit Ratio (Activity Area: Universal Credit)	Anticipated Number of Credits
Restoration	Grade artificial uplands to wetland elevations, restore vegetation	0.72	1:1	0.72
Sediment Pond Rehabilitation	Depressions graded to typical floodplain topography, restore vegetation	10.52	2:1	5.26
Wetland Rehabilitation	Re-route ditched streams into geomorphically appropriate channels; restore native vegetation.	8.44	2:1	4.22

Bank Activity	Mitigation Actions	Affected Area (acres)	Credit Ratio (Activity Area: Universal Credit)	Anticipated Number of Credits
Floodplain Rehabilitation	Fill ditches to complete floodplain rehab started with BHC, restore vegetation	46.02	2.5:1	18.41
Enhancement	Restore vegetation in rehabilitated floodplain	66.08	3:1	22.03
Emergent Enhancement	Selectively restore vegetation and protect existing native species	4.89	4:1	1.22
Wetland Preservation	Preserve existing forested wetland and compliment with rehabilitation	16.11	5:1	3.22
Upland Preservation	Preserve existing forested uplands as part of wetland/upland mosaic	1.65	5:1	0.33
Upland Buffer	Restore upland buffer vegetation	3.08	10:1	0.31
Utility Corridor	Restore native vegetation	16.78	N/A	0.00
Roads/Railroads	Occurring within mitigation bank	2.68	N/A	0.00
Total				55.72

D.1.2 Credit Award Schedule

A. Credits will be awarded to the Bank for sale, use, or other transfer as the performance standards associated with those credits are met, with the following exceptions: (1) no credits may be awarded prior to meeting all of the performance standards associated with Objective 1.

B. The IRT will typically approve the award of credits according to the schedule in Table D.2, below. Credits may not be awarded sooner than specified in Table D.2, except where otherwise noted or in extraordinary situations with the written approval of the Corps and Ecology, in consultation with the other members of the IRT. If the Bank is not able to meet a particular performance standard by the year indicated in Table D.2, the Sponsor may submit documentation of successful satisfaction of that

performance standard during a subsequent year, and the IRT will give full consideration to the award of appropriate credits for sale, use, or transfer without reduction or other penalty.

C. The Corps and Ecology may, at their discretion following consultation with the IRT, award partial credit for partial accomplishment of a performance standard. In the event a specific performance standard is not met, but the IRT feels that the site is progressing satisfactorily, the Corps and Ecology may at their discretion following consultation with the IRT award credits.

D. Once a credit is awarded, the Bank may sell, use, or otherwise transfer that credit at any time, subject to the provisions of this Instrument.

E. If the institution of an adaptive management or remedial action plan as described in Section F.1.4 of Appendix F causes delay in the achievement of a performance standard, the timeline for achievement of each subsequent milestone for that performance standard will be deferred for a like interval, unless otherwise specifically approved by the Corps and Ecology, following consultation with the IRT. The Corps and Ecology, following consultation with the IRT and with the Sponsor, will determine what remedial actions are necessary to correct the situation, pursuant to Article IV.H. and Section F.1.4, and direct their performance prior to the award of any additional mitigation credits.

Table D.2 Credit Release Schedule

Potential Credits to be released: 55.72								
	Pre-Construction Credits	Year 0 Credits	Year 1 Credits	Year 3 Credits	Year 5 Credits	Year 7 Credits	Year 10 Credits	Total credits
1A. MBI Signature.	1.95							1.95
1B. CE recorded	1.95							1.95
1C. Financial assurance complete	1.95							1.95
1D. Long-Term M&M Fund created	1.95							1.95
2A. Grading complete		3.71						3.71
2B. Wetland area					2.50		1.00	3.50
2C. Stream reconnection channels			1.75	0.50				2.25
3A. Planting plan as-built complete		3.71						3.71
3B. Invasive spp cover				0.65	0.70	1.00	0.50	2.85
3C. Zero tolerance invasives			0.16	0.25	0.50	0.65	0.50	2.06

Potential Credits to be released: 55.72								
	Pre-Construction Credits	Year 0 Credits	Year 1 Credits	Year 3 Credits	Year 5 Credits	Year 7 Credits	Year 10 Credits	Total credits
3D. PEM Native plant cover.				0.50	0.75	1.25	0.50	3.00
3E. PEM area				0.50	0.75	1.18	0.25	2.68
3F. PSS stem density			1.26	1.00				2.26
3G. PSS aerial cover					2.22	2.53	0.97	5.72
3H. PFO stem density			1.26	1.00				2.26
3I. PFO aerial cover					2.22	2.53	0.97	5.72
3J. Upland buffer stem density			0.50	0.50				1.00
3K. Upland buffer aerial cover					0.50	0.50	0.20	1.20
3L. RSS stem density			0.65	0.67				1.32
3M. RSS aerial cover					1.00	1.50	0.50	3.00
4A. As-built snag count		1.50						1.50
4B. Snag retention							0.18	0.18
Total Credits in the Period	7.80	8.92	5.58	5.57	11.14	11.14	5.57	55.72

Figures

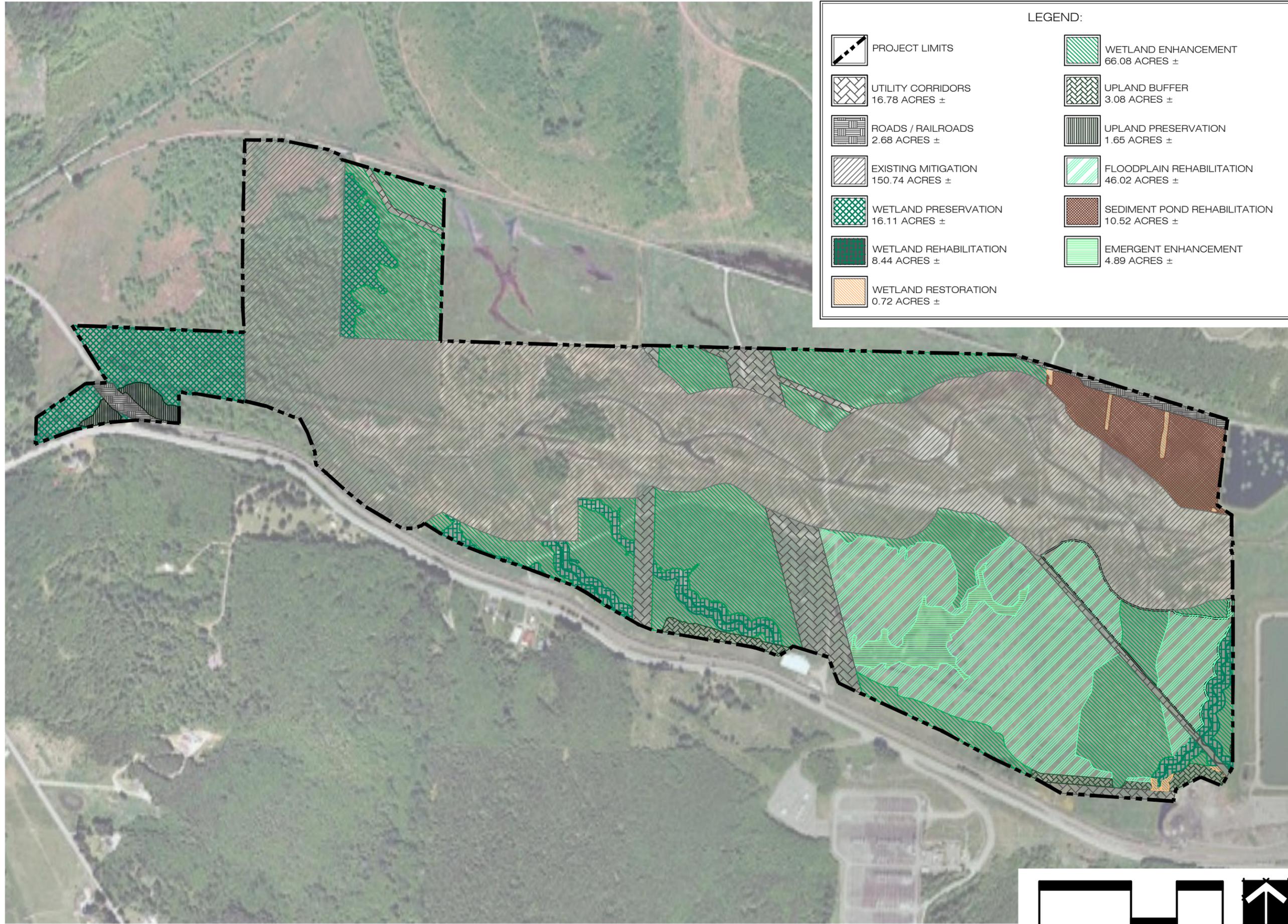


FIGURE D-1 MITIGATION TYPES
HANAFORD VALLEY SITE
 LEWIS COUNTY, WASHINGTON

Appendix E – Procedures for Use of Mitigation Bank Credits and Debit Use

Appendix E.1

E.1.1 Service Area

The Service Area for the Chehalis Basin Mitigation Bank extends to the limits of the Water Resources Inventory Area (WRIA) 23.

The following sub-watersheds are included in the service area (and WRIA 23):

- Independence Creek – Chehalis River
- Skookumchuck River
- Black River – Chehalis River
- Newaukum River
- South Fork Chehalis River – Chehalis River

A. The delineation of the entire service area is depicted in Figure E-1. The justification for use of this service area is included in the Chehalis Basin Mitigation Bank – Hanaford Valley Site, Proposed Service Area and Watershed Assessment Results Memorandum in the Resource Folder.

B. The Bank may be used to compensate for permitted impacts outside of the approved service area if specifically approved by the appropriate agencies requiring mitigation and the Corps and Ecology, following consultation with the IRT, provided that such mitigation would be practicable and environmentally preferable to other mitigation alternatives. As such, out-of-service-area impacts will only be allowed in special circumstances, which will be evaluated on a case-by-case basis (e.g., projects that span multiple basins such as transportation and utility corridors and pipelines, and settlement of enforcement actions).

E.1.2 Credit-Debit Ratios

A. Bank credits may be used, subject to the approval of the regulatory agencies with jurisdiction over the impact, to compensate for authorized permanent or temporary impacts, as well as to resolve enforcement or permit compliance actions such as replacing previously implemented project-specific mitigation that has partially or completely failed.

B. Each credit transaction agreement that is associated with a permit must indicate the permit number of the impacting project, the number of universal credits transacted, and must expressly specify that the Sponsor, its successors and assigns assumes responsibility for accomplishment and maintenance of the permittee's compensatory mitigation requirements associated with the impacting project, upon completion of the credit transfer.

C. Table E.1 depicts the approximate number of Bank credits typically required by the IRT agencies to compensate for each unit of permanent loss of listed aquatic resource type and functional level. The actual number of Bank credits required to compensate for an adverse impact to aquatic resources in any particular situation depends on many factors (e.g., whether the impact is permanent or temporary) and will be determined on a case-by-case basis by the regulatory agency(ies) authorizing the impact. The wetland functional categories are based on the Washington State Wetland Rating System for Western Washington, revised (Hruby 2004). Units of loss are measured in acres for wetland and buffer impacts and may be measured in either acres or linear feet for stream impacts.

Due to the variety and typically high level of functioning of both streams and Category I wetland, compensation for impacts to these resources by Bank credits will be determined by the regulatory agencies on a case-by-case basis.

Table E.1 Typical Credit-Debit Ratios

Resource Impact	Bank Credits: Impact Acreage
Category I Wetland	Case-by-Case
Category II Wetland	1.2:1
Category III Wetland	1:1
Category IV	0.85:1
Critical Area Buffer	Case-by-Case

E.1.3 Procedures for Use of Mitigation Bank Credits

A. Use of Mitigation Bank Credits: Public and private proponents of activities regulated under Sections 401 and 404 of the Clean Water Act (33 U.S. Code §§ 1341, 1344), Section 10 of the Rivers and Harbors Act of 1899 (33 U.S. Code § 403), Washington State Water Pollution Control Act (Chapter 90.48, RCW), Shoreline Management Act (RCW 90.58), Growth Management Act (RCW 36.70A), Hydraulic Code (RCW 75.20), and other Federal, State, and local authorities may be eligible to use the Bank as mitigation for unavoidable impacts. The Bank will be eligible to serve public and private end users by providing advance compensatory mitigation for authorized impacts to regulated areas that require mitigation to settle enforcement claims. The Bank is intended to provide replacement of lost functions and values including: wetlands, endangered species habitat, riparian habitat, and upland/buffer habitat.

B. An applicant seeking a permit for a project with adverse impacts to the aquatic environment within the service area must generally obtain the approval of each regulatory agency with jurisdiction over that project, in order to use the Bank as a source of compensatory mitigation. To receive approval to use the Bank, the applicant must demonstrate to the satisfaction of the pertinent regulatory agencies that the project complies with all applicable requirements pertaining to alternatives and mitigation sequencing and that purchasing credits from the Bank for compensatory mitigation would be environmentally preferable. Specifically, a permit applicant must generally be able to demonstrate to the satisfaction of the involved regulatory agencies that:

1. There is no practicable alternative to adversely impacting the water body, critical area, buffer, or other regulated area; and
2. Appropriate and practicable measures to minimize adverse impacts to the aquatic ecosystem have been considered and included in the project.

It is solely the determination of the agency(ies) permitting the project with adverse impacts as to whether a proposed use of Bank credits within the service area is environmentally preferable and appropriate to other mitigation alternatives.

C. Local jurisdictions may establish policies where the best management practices for small impacts to low value, isolated wetlands are for the permittee to go directly to the Bank for credit. Upon receiving permission to utilize credits from the Bank the permittee must contact the Sponsor to ensure that credits are available. Upon completion of the transaction, the Sponsor will inform the permitting agencies of each completed transaction, via email or letter with an attached copy of the accounting ledger.

D. Other types of credit users may include, but are not necessarily limited to, purchases made that will not be associated with a particular project or impact (i.e., “good will” purchase), purchases made by natural resource stewards resulting from expenditures from in-lieu-fees (or similar type funds), and other conservation purposes.

E. The Sponsor may use the Bank site to provide compensatory mitigation to offset impacts to environmental elements other than aquatic resources. Such use shall result in no physical changes to the Bank site unless approved by the IRT. The Sponsor must obtain approval from the Corps and Ecology, following consultation with the IRT, prior to establishing currencies other than the wetland mitigation credits that are established by Appendix D of this Instrument.

The agencies that regulate those specific environmental elements are responsible for establishing the value of the currency and release schedules, and determining the appropriateness of using the Bank as compensatory mitigation for impacts to those elements. The IRT will determine how withdrawal of those currencies will affect the amount of potential wetland mitigation credits remaining. The Sponsor shall record the award and use of all currencies on the Bank ledger and otherwise follow the procedures as outlined in Appendix E.1.4. Use of the Bank for compensatory mitigation for other environmental elements shall not conflict with the provisions of this Instrument.

E.1.4 Accounting Procedures

A. The Sponsor shall establish and maintain for inspection and reporting purposes a ledger of all credits that are awarded through the achievement of specified performance standards, as well as credits that are sold, used, or transferred. The Sponsor will record each credit withdrawal transaction that receives a permit with the Lewis County Auditor, and submit a copy of the recorded transaction to the IRT within 30 days from stamped registration date.

B. The ledger must follow the current ledger template approved by the Corps and Ecology.

The following information, at a minimum, will be recorded in the ledger for each transaction:

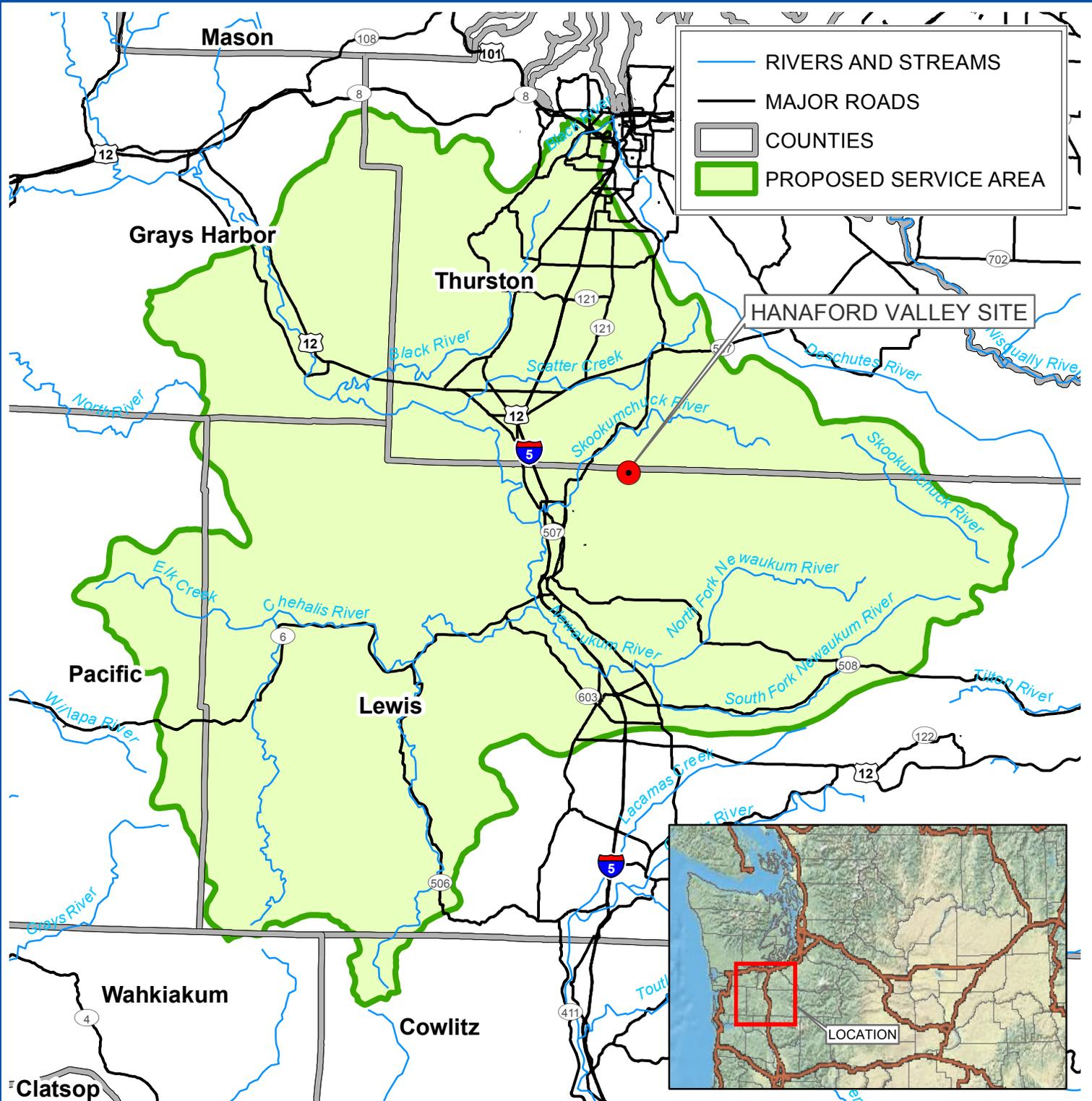
1. Date of transaction.
2. Number of credits transacted.
3. For credits awarded, reference the performance standard(s) to which the awarded credits correspond.
4. For credit sales/use/transfers, include the name, address, and telephone number of purchaser/user/transferee; and include all of the following information that applies: permit number(s), permit issuance date, and name of the regulatory agency(ies) issuing permits; location of the project for which the credits are being purchased/used/transferred; the size of the impacts; and a brief description of the project impacts requiring compensatory mitigation (e.g., nature and quality of aquatic resources affected).
5. For credits withdrawn from the ledger for reasons other than credit sale/use/transfer, include the specific reason for withdrawal.
6. Bank credit balance after the award or transaction.

C. The Sponsor will provide an updated Bank ledger to the IRT each time credits are awarded, sold, used, transferred, or otherwise withdrawn. This must be provided within 30 days of any credit transaction. The Sponsor will also submit an annual ledger by February 1 of each year. The annual ledger must show a cumulative tabulation of all credit transactions at the Bank through December 31. This ledger will be submitted in conjunction with the monitoring reports until (1) all credits have been awarded and sold, used, or otherwise transferred; or (2) until the IRT has accepted the Sponsor's written certification that it has terminated all banking activity.

References

Hruby, T. 2004. Wetland Rating System for Western Washington (Revised). Washington State Department of Ecology. Publication #04-06-025. Olympia, Washington

Figure E-1 Chehalis Basin Mitigation Bank Service Area Map



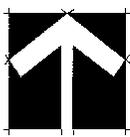
- RIVERS AND STREAMS
- MAJOR ROADS
- COUNTIES
- PROPOSED SERVICE AREA

HANAFORD VALLEY SITE



SCALE: 1 INCH = 40,000 FEET

 LATITUDE: 46° 45' 42.50" N, LONGITUDE: 122° 53' 02.00" W



CASCADE
ENVIRONMENTAL GROUP



FIGURE E1
HANAFORD VALLEY SITE SERVICE AREA
CHEHALIS BASIN MITIGATION BANK

E.1.1. SERVICE AREA
 A. The Service Area for the Bank extends to the limits of WRIA 23, the Upper Chehalis Basin, including the full extent of the following sub basins: Black River-Chehalis River, South Fork Chehalis River-Chehalis River, Newaukum River, Skookumchuck River, Independence Creek-Chehalis River.

SOURCE: USGS HUC, ESRI

CENTRALIA, WASHINGTON

SEPTEMBER 2011

Appendix F – Establishment Period Monitoring, Reporting, Maintenance, and Remedial Action

Appendix F.1

The bank sponsor will monitor the bank site to document site development with reference to project performance standards. Monitoring results will guide the project's adaptive management process and determine credit release. The bank sponsor will work collaboratively with the IRT to assure that the bank site is developing as indicated in bank goals, objectives, and performance standards.

F.1.1 As-Built Reports

As-built reports will provide documentation of site construction, including grading, topography, habitat structure documentation, site seeding and planting preparation, and plant installation. This may be one report that describes all construction, or it may be separated into two reports that are submitted at different times, one following grading and related construction, the other following completion of planting.

At a minimum, the following components should be included in one or both (as appropriate) of the as-built reports:

- Name and contact information for the parties responsible for the Bank construction site including the Bank Sponsor, biologists, engineers, and wetland professionals on site during construction
- Ecology, Corps, and Local permit numbers
- Dates when activities began and ended such as grading, removal of invasive plants, installing plants, and installing habitat features
- Construction Narrative; Includes a discussion of construction process, effectiveness of BMP's, photographs from site photo points, descriptions of problems and resolutions, and justification for any modifications to site plans.
- Photographs of the site at as-built conditions taken from photo stations (panoramic photos are recommended)
- Description of any problems encountered and solutions implemented (with reasons for changes) during construction of the Bank site
- List of any follow-up actions needed with a schedule
- 11x17 maps of the Bank site showing:
 - Topography with one-foot contours surveyed by a licensed surveyor. Include relevant elevations of rock weir and outfall structure. Include a description of how elevations were determined
 - Installed planting scheme, including quantities, densities, sizes, approximate locations, and the sources of plant material
 - Locations of monitoring wells, and staff gauges that remain after construction
 - Locations of habitat features
 - Locations of permanent photo stations
 - Date when the maps were produced and, if applicable, when information was collected

As-built reports will be submitted to each member of the IRT within 90 days of completing construction of the Bank, and must demonstrate compliance with Appendix B and any modifications to the Bank development plan and design, approved by the Corps and Ecology

prior to their construction or implementation, following consultation with the other members of the IRT. Permanent photo points will be established in Year 0 to document the progression of each habitat type. Photo point locations will be documented in the as-built report. A Hanaford Valley Site Mitigation Bank construction manager will document Year 0 post-construction conditions in the as-built report for grading, plantings, large woody debris and other habitat features; and will include photographs and as-built drawings.

Planned grading elevations as well as existing contours of the site, will be surveyed by a licensed surveyor to 1-foot contours to ensure establishment of desired contours. Relevant elevations of the outfall areas will also be surveyed.

F. 1.2. Site Monitoring

Site monitoring will directly address site performance standards, provide a qualitative assessment of site development, and guide the adaptive management process. Site monitoring will include measures of site hydrologic conditions, development of the planted and seeded vegetation, and monitor stability of installed habitat features.

A performance monitoring program will be implemented to determine the degree of success of the mitigation effort during the establishment period. Monitoring will include periodic surveys and site evaluations to establish the foundation on which the Bank can demonstrate to the IRT that pertinent performance standards have been achieved and continue to be maintained. Monitoring will include measurements and observations of site stabilization, wetland hydrology, vegetative cover, plant survival, vegetation structure, as well as species composition, functional values, and noxious weed invasion.

F.1.2.1 Overview of Monitoring Requirements

As-built and subsequent monitoring efforts specific to each performance standard (Section C1.2 of Appendix C) are below.

Ecologic Goal #1: Improve hydrologic, water quality, and habitat functions in the mitigation bank site.

Ecologic Goal #2: Provide a self-sustaining wetland and stream complex that will not require maintenance.

- Performance Standard 2A. Fill ditches on site. Redirect surface flows of stream tributaries On to the site and grading of the site stream reconnection channel completed according to IRT approved plans.
- Performance Standard 2B. A minimum of 161.1 acres of wetland will be present on the site at years 5 and 10 following approval of As-built grading report.
- Performance Standard 2C. Stream reconnection channels will convey water on to the site as designed and will not cause excessive soil erosion.
- Performance Standard 3B. Within each habitat type (PEM, PSS, PFO, RSS), Armenian blackberry, reed canarygrass, Canada Thistle, and yellow-flag iris will not collectively exceed 25% aerial cover.

- Performance Standard 3C. Over the entire site, zero tolerance of Japanese knotweed (and related hybrids), and purple loosestrife colonization is maintained. Map any specimens and eradicate during the growing season of the same year. Additional species may be added to this list based on site conditions, as negotiated between the Sponsor and IRT.
- Performance Standard 3D. In the Palustrine Emergent Wetland area, native plant cover will exceed 80% in years 3, 5, 7, and 10.
- Performance Standard 3E. A minimum of 4.50 acres of Palustrine Emergent Wetland will be present within the bank at years 3, 5, 7, 10.
- Performance Standard 3F. Native woody plant species in the Palustrine Scrub-Shrub Wetland will have a stem density of 510 native stems per acre. In Years 1 and 3 following as-built approval.
- Performance Standard 3G. Native woody plant species in the Palustrine Scrub-Shrub Wetland will have a minimum aerial cover of 40% at Year 5, 50% cover at Year 7, and 60% cover at Year 10.
- Performance Standard 3H. Native tree plant species in the Palustrine Forested Wetland will have a stem density of 225 native stems per acre. In Year 1 and 200 native tree stems per acre in Year 3 following as-built approval.
- Performance Standard 3I. Native woody plant species in the Palustrine Forested Wetland will have a minimum aerial cover of 40% at Year 5, 50% cover at Year 7, and 60% cover at Year 10.
- Performance Standard 3J. Native tree plant species in the Upland Buffer Area will have a stem density of 200 native stems per acre in Year 1 and 185 native tree stems per acre in Year 3 following as-built approval.
- Performance Standard 3K. Native shrub species in the Upland Buffer Area will have a stem density of 310 native shrub stems per acre in Year 1 and in Year 3 following as-built approval.
- Performance Standard 3L. Native woody plant species in the Riparian Scrub-Shrub Wetland will have a stem density of 906 native stems per acre. In Years 1 and 3 following as-built approval.
- Performance Standard 3M. Native woody plant species in the Riparian Scrub-Shrub Wetland will have a minimum aerial cover of 40% at Year 5, 50% cover at Year 7, and 60% cover at Year 10.
- Performance Standard 4A. As-built plans will demonstrate the installation of 40 wooden snags, as indicated on IRT – approved project plans.
- Performance Standard 4B. Wooden snags will be retained throughout the monitoring period, as shown on IRT-approved project plans.

F.1.2.2 Monitoring Protocol

The monitoring methods assess site conditions with reference to site objectives and performance standards. Monitoring will be conducted by qualified biologists and the collected data will be used to determine if the objectives and performance standards are being met. Results from monitoring will be reported to permitting agencies to assess permit compliance and guide adaptive management and site maintenance. Achieving performance standards as established in the MBI will typically indicate that the site is developing as intended and bank goals are being met. Failure to meet performance standards will trigger agency consultation or adaptive management.

The Hanaford Valley mitigation bank performance standards include benchmarks for hydrology, vegetation, site protection, and retention of installed habitat features. For vegetation, statistical analysis will be applied to samples to ensure that they are of adequate size to provide the desired precision. Monitoring data for hydrologic, site protection, and habitat feature performance standards do not require statistical analysis and monitoring will be performed as described in the in the following sections.

F.1.2.3 Vegetation

Vegetation monitoring assessed the vegetation community development by sampling vegetation at the mitigation site, extrapolating sampling results to estimate the site conditions, and comparing these estimated site conditions to the site performance standards described in the MBI. The sampling protocol includes all planting zones that are identified in the specific performance standard, and data were collected and reported separately for each of the planting zones.

Each performance standard describes a threshold to be achieved (stem density or aerial cover), an area to be sampled (specific planting zone), a timeframe for sampling (Year 1 through Year 10), and a subject of the monitoring effort (specific species, all woody species, invasive species, etc.) to guide monitoring efforts.

Over the 10-year monitoring period of the mitigation site, multiple approaches to vegetation monitoring will be used. These approaches are summarized in Table F-1.

Table F-1. Summary of Monitoring Methods

Year	PFO	PSS	RSS	PEM	Invasives
1	Stem density/ stem count	Stem density/ stem count	Stem density/ stem count	Qualitative	Aerial cover / line intercept
2	Qualitative	Qualitative	Qualitative	Qualitative	Qualitative
3	Stem density / stem count	Stem density / stem count	Stem density/ stem count	Aerial cover/ line intercept	Aerial cover / line intercept
4	Qualitative	Qualitative	Qualitative	Qualitative	Qualitative
5	Aerial cover / line intercept	Aerial cover / line intercept	Aerial cover / line intercept	Aerial cover / line intercept	Aerial cover / line intercept
6	Qualitative	Qualitative	Qualitative	Qualitative	Qualitative
7	Aerial cover/line intercept	Aerial cover/ line intercept	Aerial cover/ line intercept	Aerial cover/ line intercept	Aerial cover / line intercept
8	Qualitative	Qualitative	Qualitative	Qualitative	Qualitative
9	Qualitative	Qualitative	Qualitative	Qualitative	Qualitative
10	Aerial cover/ line intercept	Aerial cover/ line intercept	Aerial cover/ line intercept	Aerial cover/ line intercept	Aerial cover/ line intercept

Permanent photopoints will be established throughout the site (Figure F-1). Photographs will be taken from these photopoints during vegetation monitoring to provide a visual record of site and plant community development.

F.1.2.3.1 Sampling Strategy

Transects will be established from transects already established at the Big Hanaford Creek mitigation site (Figure F-1). The endpoints to the existing transects are established along baselines that run along both the northern and southern exterior boundaries of the Big Hanaford Creek mitigation site. The baseline curves along the mitigation site boundary, which generally follows the realigned Big Hanaford Creek.

A total of 68 transects are currently installed in a north-to-south orientation, generally perpendicular to the baseline. Transects were originally located systematically, starting in the northwest corner of the mitigation site. The location of the first transect was determined by using a random numbers table to select a random distance from the western end of the northern baseline. After the first transect was installed, all subsequent transects were installed a distance of 200 feet to the east of the prior transect. Transects established along the southern baseline were aligned with transects along the northern baseline and given new numbers. All endpoints have GPS locations, rebar, and identification tags on them. For each year of sampling, a subset of transects will be randomly selected to conduct vegetation monitoring.

F.1.2.3.2 Forested and Scrub-Shrub Zone Transects

North-south permanent transects cross through the forested and scrub-shrub zones and will be used to sample the following planting zones as described in the MBI:

- Palustrine forested wetland (PFO)
- Palustrine scrub-shrub complex (PSS)
- Upland buffer
- Utility corridor palustrine scrub-shrub wetland complex (UCPSS)

A subset of transects will be randomly selected from the total number of north-south transects during the monitoring fieldwork. The number of transects sampled will be based on statistical analysis using the standard deviation of the mean of the stem count or cover.

F.1.2.3.3 Riparian Scrub-Shrub and Palustrine Emergent Zone Transects

The MBI also includes performance standards for riparian scrub-shrub zones and palustrine emergent zones, which are generally oriented perpendicular to the north-south permanent sampling transects used for the PFO and PSS vegetation sampling. Separate riparian scrub-shrub and palustrine emergent transects, situated roughly perpendicular to the permanent north-south transects (Figure F-2), will be established to sample the following planting zones identified in the Hanaford Valley MBI:

- Riparian Scrub-Shrub (RSS)
- Palustrine Emergent (PEM)

These transects will be 50 feet long, starting at the north-south permanent transect line, and extending east and west.

A subset of transects will be randomly selected from the total number of the riparian scrub-shrub transects during the monitoring fieldwork. The number of transects will be based on statistical analysis using the standard deviation of the mean of the stem count or cover.

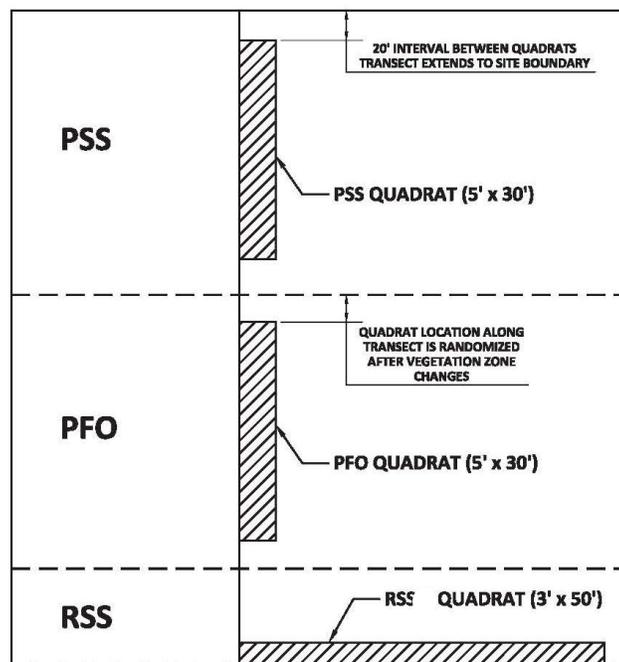
Tree and shrub stem density in the palustrine forested and palustrine scrub-shrub zones will be sampled using rectangular quadrats measuring 5 feet by 30 feet. Quadrats are to be situated along one side of transect, with the long axis of the quadrat established by the transect tape (Figure F-2). Quadrat placement will be systematic with a random start as described in *Measuring and Monitoring Plant Populations* (Elzinga et al. 1998). The transect tape is used to measure quadrat length and quadrat width will be measured by holding a 5-foot dowel along the transect tape. For stem density (Year 1 and 3) assessments all plants within 5 feet of the transect tape are to be recorded as alive or dead on the data sheets. Quadrats are spaced 20 feet apart from one another until a full quadrat could not

entirely fit within the remaining transect length in the sampled vegetation zone. Cover assessments (Year 5, 7, 10) will be conducted using the line intercept method (Elzinga et al. 1998).

For stem density assessment in the riparian scrub-shrub (Year 1 and 3) zone, sampling will be conducted using quadrats positioned along the 50-foot-long transects. These quadrats are to be 3 feet by 50 feet and are intentionally narrower to minimize sampling error since these plots are narrow in some areas of the mitigation bank site. Cover assessments in the riparian scrub-shrub (Years 5, 7, 10) and palustrine emergent zones (Years 3, 5, 7, and 10) will be conducted using the line intercept method.

Additionally, in Years 3, 5, 7, and 10, the total area of palustrine emergent areas will be mapped using a GPS.

Figure F-2 Quadrat Configuration



F.1.2.3.4 Invasive Species

For cover of invasive species (Performance Standards 3B and 3C), assessments will be completed on all selected transects within the quadrats length using the line intercept method (WSDOT 2008 and Elzinga 1998). This will be conducted in all years of formal, qualitative monitoring.

F.1.2.3.5 Statistical Methods

Using the methods published by the Washington State Department of Transportation (WSDOT) (WSDOT 2008) and other statistical guidance found in Elzinga et al. (1998), four statistical topics were taken into consideration for the monitoring strategy at the mitigation bank site.

Random Distribution of Sample Units

The importance of random sampling is addressed by these methods for this large and complex site. First, although permanent transects are used on the site, their locations were randomized. The first transect was located using a number selected from a random numbers table; the randomly selected number was converted to a distance to be measured eastward of the project's western boundary.

Second, randomized sampling will be incorporated during the vegetation sampling effort. A subset of transects across the site will be selected each monitoring year, and a new subset will be selected for each year of qualitative sampling in future monitoring years. The sampling strategy was designed to ensure interspersed on both the vegetation plot and across the entire site.

Lastly, quadrat placement is to be randomized along each of the sampled transects.

Quadrat Placement and Size

Long and narrow quadrats have been shown to have an advantage over other shapes in most ecological sampling (Elzinga et al. 1998) because they tend to average out empty space and clumping patterns. A quadrat with the dimensions of 5 feet by 30 feet was selected for the survival and density monitoring because the spacing of installed plants varies. Although natural regeneration is expected, individual stem counts using quadrats only occur in Year 1 and Year 3, reducing concerns that the site will regenerate to the extent that a wide quadrat will become too unwieldy for individual stem counts.

Quadrat placement is to be determined using a systematic approach with a randomized start. Plots are situated at least 20 feet apart to ensure independence between samples. Quadrat sizes will not be shortened at the end of a transect or within planting zones to keep the sample sizes consistent. Long, narrow quadrats placed along transects also facilitate ease of rapid, accurate sampling that can be repeated by teams in the field crew.

Power and Confidence Level

The sampling objectives were developed to address concerns regarding the reliability of the vegetation data to determine if the site is meeting the performance standards. The proposed target confidence level, or power, for the sampling effort at the mitigation site is to be 80% certain that the reported mean is within 20% of the true value ($CI_{80\%} = \pm 20\%$). These targets meet the rigor that WSDOT applies in their monitoring program and will give precision in reporting a population mean for the mitigation site.

Statistical Analysis

One of the primary sampling objectives is to precisely estimate the sample mean. Sample size analyses are conducted to determine how much sampling is needed to meet the desired confidence level. Sample size equations are predicated on two assumptions: first, that sample units are randomly positioned, which has been addressed with the systematic sampling with the random start approach and the random placement of transects across the site. And second, we assume the means of the dataset have a normal distribution.

Sample size analysis will be conducted after data were collected on a subset of transects. Each planting zone will be analyzed separately and the following equation to be applied to determine the uncorrected sample size estimate¹:

$$n = \frac{(Z_{\alpha})^2(s)^2}{(B)^2}$$

Sample size corrections were applied to address both the “point-in-time” parameter estimate and the “finite population correction” factor. The first correction is a one-sample tolerance correction that was developed after research into sample size formulas found that some formulas underestimated the number needed, particularly for small sample situations (Blackwood 1991; Kupper and Hafner 1989). This correction is applied by looking up the uncorrected value in a sample size correction table for single parameter estimates (Elzinga et al. 1998; Kupper and Hafner 1989).

Data analysis in the monitoring years will be performed to conduct sample size analyses, or to estimate a population mean for the purpose of determining compliance with the performance standards in the MBI.

F.1.2.4 Hydrology

Wetland area will be assessed using standard wetland delineation methods found in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Environmental Laboratory 2010). Wetland indicators, such as hydrophytic vegetation, hydric soils, and observable wetland hydrology, will be assessed in Years 5 and 10.

Biologists will conduct walk throughs in all years to assess stream reconnection channels for conveyance and erosion.

F.1.2.5 Habitat Features

All woody habitat structures will be counted during monitoring years throughout the monitoring period of Year 1 to Year 10.

F.1.3 Reporting

Monitoring reports will include all data necessary to document compliance with mitigation conditions and performance criteria found in the MBI. Beyond general introductory and background information, monitoring reports will include:

- A brief list of the monitoring goals, objectives and success criteria;
- An overview of all significant wetland mitigation activities for each year;
- A description of the monitoring methods taken at each mitigation site;

¹ Where n = the uncorrected sample size estimate; Z_{α} = the standard normal coefficient (1.28 for 80% confidence level); s = standard deviation; and, B = the desired precision level expressed as half of the maximum acceptable confidence interval width multiplied by the sample mean.

- A discussion of the vegetation and hydrology conditions;
- A discussion of problems, recommendations, and contingency measures taken; and
- A photographic summary taken at the photo points.

Each monitoring report will focus on data for that year. To the extent that trends in biological conditions become apparent or problems persist from one year to the next, these also will be described. Monitoring reports will be submitted for each monitoring year. Monitoring years will consider the growing season and the following rain season (i.e., generally from July of one year through July of the following year). Monitoring reports will be submitted by the end of the monitoring year.

F.1.4 Remedial Action during the Establishment Period of the Bank

In the event that one or more components of the Bank do not achieve performance standards or comply with any other requirement of this Instrument, the following sequence of remedial actions will be taken.

A. If the monitoring reports, or inspection by representatives of the IRT agencies, indicate persistent failure to achieve and maintain the prescribed performance standards, the Sponsor will propose adaptive management actions to correct the shortcomings. The Corps and Ecology, following consultation with the IRT and the sponsor may also direct adaptive management actions if the Corps and Ecology identify a need for corrective action and no adaptive management plan acceptable to the IRT has been submitted within a reasonable period of time. The adaptive management plan shall specify the nature of further examination of areas for potential causes of failure and/or corrective action to be conducted, the schedule of completion for those activities, and a monitoring plan for assessing the effectiveness of the corrective action. The objective of the adaptive management plan shall be to attain the originally prescribed project objectives, either through achieving the original performance standards or through new standards subsequently developed based on evaluation of the site as it matures and is assessed. The Sponsor shall also implement all mitigation that the Corps and Ecology, following consultation with the IRT determines is reasonably necessary to compensate for those authorized impacts to the aquatic environment that have not been successfully redressed by the Bank pursuant to the requirements of this Instrument. If modified or replacement performance standards are proposed, the Sponsor may not initiate activities designed to achieve those replacement standards until those performance standards are approved by the IRT. During the period that a specific component of the Bank is out of compliance, the Corps and Ecology, following consultation with the IRT may direct that credits generated by that Bank component may not be sold, used, or otherwise transferred.

B. If remedial actions taken by the Sponsor under the provisions of the preceding paragraph do not bring that performance standard of the Bank into compliance with the requirements of this Instrument, including any approved changes to the Instrument; the Sponsor may request approval to discontinue efforts to achieve one or more performance standards for the Bank. If the Corps and Ecology, following consultation with the IRT approves of the proposal to discontinue efforts to achieve one or more performance standards, they need not be accomplished but no additional credits may be awarded for those performance standard(s). At the discretion of the Corps of Ecology, following consultation with the IRT, the Sponsor may also be released from future maintenance and monitoring obligations for those performance standard(s), provided that releasing the Sponsor

from those obligations does not adversely affect the remainder of the Bank, or affect credits already sold, used, or transferred to date.

C. If the Corps and/or Ecology, following consultation with the IRT, determine that the failure of one or more performance standards of the Bank to comply with the requirements of this Instrument adversely affects the ability of the Bank to achieve its goals or objectives, or if the Sponsor does not make a reasonable effort to bring the Bank into compliance with this Instrument, the Corps and Ecology, following consultation with the IRT, may terminate this Instrument and the operation of the Bank pursuant to Article IV.J.

D. If the Corps and Ecology, following consultation with the IRT, direct remedial or adaptive management action pursuant to Section F.1.4.A. and compliance with the performance standards is not restored within a further reasonable period of time, and the Sponsor does not obtain approval of any request to discontinue efforts pursuant to Section F.1.4.B, the Corps and Ecology may alternatively implement remedial action on its own initiative, acting through a Third Party Designee, by accessing the financial assurance instrument pursuant to Article III.C.1. and Section H.1.1 of Appendix H to this Instrument.

F.1.5 Maintenance during the Establishment Period of the Bank

General maintenance will be performed throughout the year to address conditions that may limit the success of the Bank and attainment of performance standards and objectives. The Sponsor is responsible for all site maintenance activities throughout the establishment period of the Bank. Maintenance activities will include, but are not limited to, vegetative maintenance (including replanting, repair of any areas subject to erosion, weed control around plantings, mowing, control of invasive species, control and discouragement of voles, beaver and deer foraging on plants) and general maintenance (including fence repair, cleaning and repair of nesting boxes, road and trail maintenance as necessary, and clean-up of trash) also per section B.1.2.4.

References

Blackwood, L.G. 1991. Assurance levels of standard sample size formulas. *Environmental Science and Technology*. 25(8):1366-1367.

Elzinga, Caryl L., Salzer, Daniel W., Willoughby, John W. 1998. *Measuring and Monitoring Plant Populations*. Bureau of Land Management Technical Reference 1730-1, BLM/RS/ST-98/005+ 1730. National Business Center, Denver, CO.

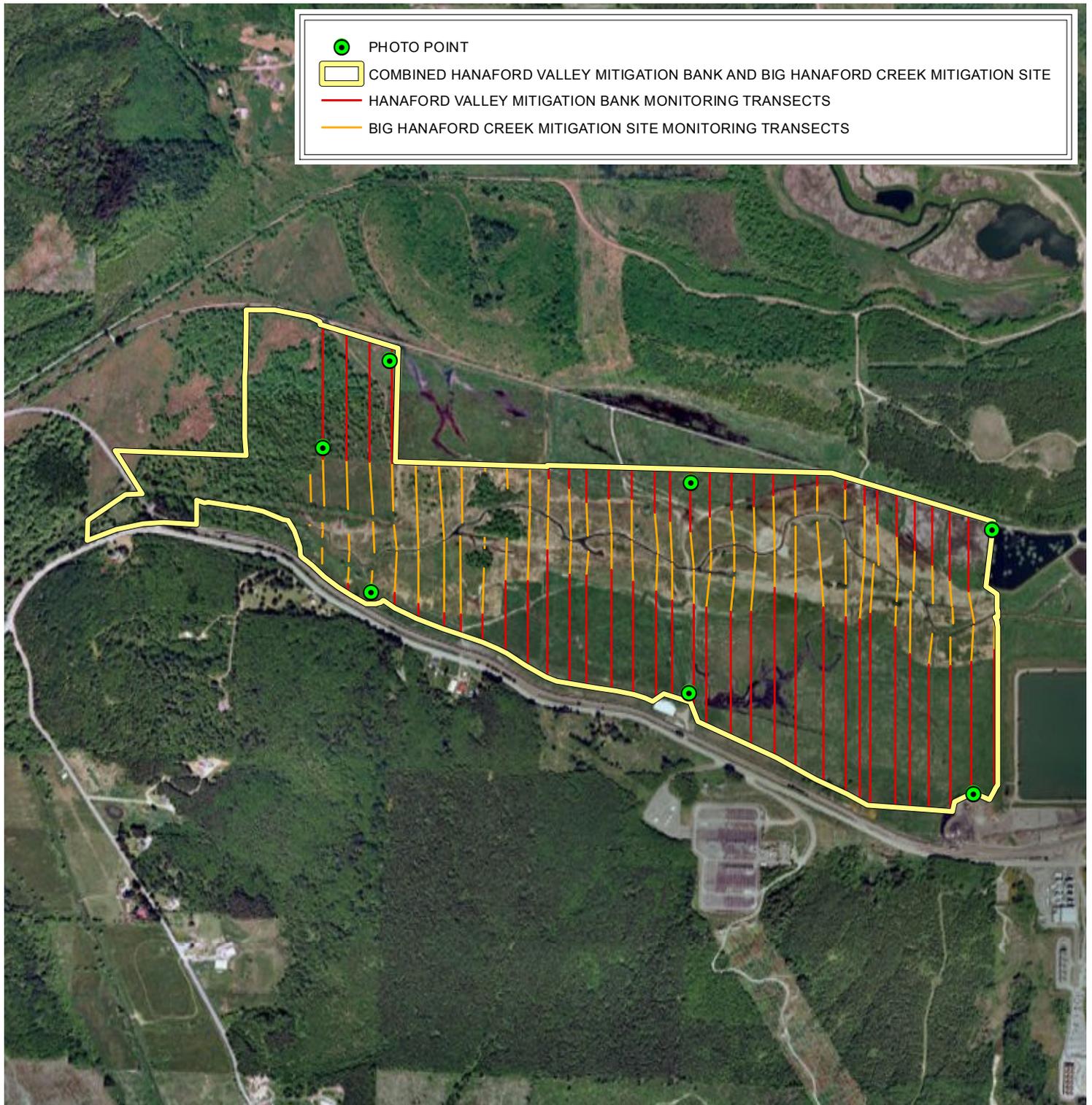
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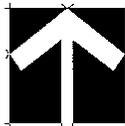
Washington State Department of Transportation (WSDOT). 2008. *WSDOT Wetland Mitigation Site Monitoring Methods*. Olympia, WA.

Figures

-  PHOTO POINT
-  COMBINED HANAFORD VALLEY MITIGATION BANK AND BIG HANAFORD CREEK MITIGATION SITE
-  HANAFORD VALLEY MITIGATION BANK MONITORING TRANSECTS
-  BIG HANAFORD CREEK MITIGATION SITE MONITORING TRANSECTS



SCALE: 1 INCH = 1,200 FEET



LATITUDE: 46° 45' 42.50" N
 LONGITUDE: 122° 53' 02.00" W

SOURCE: AERIALS EXPRESS, 2009

CASCADE
 ENVIRONMENTAL GROUP



FIGURE F-1
**MONITORING TRANSECTS
 AND PHOTO POINT LOCATIONS**
 CHEHALIS BASIN MITIGATION BANK -
 HANAFORD VALLEY SITE

CENTRALIA, WA

SEPTEMBER 2011

Appendix G – Long Term Protection and Management

Appendix G.1

G.1.1 Conservation Easements

A. The Sponsor will ensure, pursuant to Article III.D of this Instrument, that an appropriate conservation easement is granted from each landowner and recorded dedicating in perpetuity the property constituting the Bank that is to be created, restored, or enhanced for credit. This conservation easement must be approved by the Corps and Ecology, following consultation with the IRT, and shall be recorded with Lewis County. A copy of the recorded easement shall be provided to all members of the IRT. The conservation easement shall reflect that they may not be removed, modified, or transferred without written approval of the Corps and Ecology, following consultation with the IRT. Conveyance of any interest in the property shall be subject to these conservation easements. The Corps and Ecology may consider any alteration or rescission of the conservation easement a default of the Sponsor's obligations under this Instrument and may institute appropriate action pursuant to Article IV.J. The Sponsor shall provide written notice to the IRT of any transfer of fee title or any portion of the ownership interest in the Bank real property to another party within 60 days from time of transfer. Use prohibitions reflected in the easement will preclude the site from being used for activities that would be incompatible with the establishment and operation of the Bank. All restrictions shall be granted in perpetuity without encumbrances or other reservations, except those encumbrances or reservations (e.g., retention of recreation and privileges by the landowners and their guests) approved by the Corps and Ecology and not adversely affecting the ecological viability of the Bank. Any portion of the site not encumbered by the conservation easement will not be credited for use in the Bank.

B. The conservation easement shall provide that all structures, facilities, and improvements within the Bank, including roads, trails, and fences that are merely incidental to the functionality of the mitigation site but are necessary to the Bank management and maintenance activities, shall be maintained by the Sponsor or its assignee for as long as it is necessary to serve the needs of long term management and maintenance. All structures, facilities, and improvements that directly and substantially contribute to the functionality of the mitigation site will be included within the responsibilities delineated in the LTMMP.

G.1.2 Long-Term Management and Maintenance Plan

A. The Sponsor is responsible for ensuring that a LTMMP is developed and implemented to protect and maintain in perpetuity the aquatic functions and values of the Bank site. This plan must be approved by the Corps and Ecology, following consultation with the IRT, prior to the termination of the establishment period of the Bank. Once the establishment period of the Bank has terminated pursuant to Article IV.K of this Instrument, the Sponsor will assume responsibility for implementing that Plan, as provided in Article IV.M of this Instrument, unless the Sponsor assigns this responsibility pursuant to the provisions of Article IV.M and Section G.1.2.E of this Appendix.

B. To gain IRT approval, the LTMMP will consist of enumerated objectives. The Bank will document that it is achieving each objective by submitting status reports to the IRT on a schedule approved by the IRT. A primary goal of the Bank is to create a self-sustaining natural aquatic system that achieves the intended level of aquatic ecosystem functionality with minimal human intervention, including long term site maintenance. As such, natural changes to the vegetative

community, other than changes caused by noxious weeds, that occur after all Bank performance standards have been met are not expected to require remediation.

C. The LTMMP will include those elements necessary to provide long term protection for the aquatic ecosystem and habitat resources of the Bank site. The specific elements of the Plan must be tailored to meet the specific protection needs of the site. At minimum, the IRT will likely find the following core elements to be necessary for inclusion in the LTMMP. The particular characteristics of the Bank site at the end of the establishment period may necessitate including other elements not specified below, that are needed to protect the ecosystem resources present at the Bank.

(1) Periodically patrol the Bank site for signs of trespass and vandalism. Maintenance will include reasonable actions to deter trespass and repair vandalized Bank features.

(2) Monitor the condition of structural elements and facilities of the Bank site such as signage fencing, roads, and trails. The LTMMP will include provisions to maintain and repair these improvements as necessary to achieve the objectives and functional performance goals of the Bank and comply with the provisions of the conservation easement. Improvements that are no longer needed to facilitate or protect the ecological function of the Bank site may be removed or abandoned if consistent with the terms and conditions of the conservation easement.

(3) Inspect the site annually to locate and control noxious weeds. Noxious weed control measures may include mechanical vegetation control, herbicide treatments, and temporary plantings

D. If the Sponsor elects to request the approval of the IRT to assign long term management and maintenance to a Steward pursuant to Article IV.M.2., the long term management and maintenance assignment agreement will reflect that the assignee has assumed the obligation, owed to the IRT, of accomplishing the LTMMP. The Corps and Ecology will also execute this assignment agreement. In exchange for the assignee's promise to achieve the LTMMP, contemporaneously with the assignment of long term management and maintenance responsibilities the Corps and Ecology will direct disbursement of the "full funding" amount specified in Article III.C.2.c of this Instrument from the Long-Term Management and Maintenance Endowment Fund escrow account, pursuant to Article III.C.2.e of this Instrument. In the event the responsibility for executing the LTMMP is not assigned to a third-party assignee, at the termination of the establishment period of the Bank the "full funding" amount specified in Article III.C.2.c of this Instrument will be disbursed from the Fund escrow account to the Sponsor.

Appendix H – Financial Assurances

Appendix H.1

The Sponsor will institute and maintain financial assurances in accordance with the subsections immediately below. The Sponsor will provide a Surety Bond or Casualty Insurance to provide financial assurance underlying the establishment and initial functionality of the Bank.

H.1.1 Surety Bond or Casualty Insurance

A. Each Surety Bond or Casualty Insurance policy will extend for an indefinite period and may not be withdrawn or canceled by the issuing financial institution prior to the termination of the period of establishment of the Bank as specified in Article IV.K, at which point it may be discharged. If the Surety Bond or Casualty Insurance policy applicable to the Bank shall expire by its own terms prior to the termination of the establishment period of the Bank as specified in Article IV.K of this Instrument, the Sponsor must reinitiate an acceptable financial assurance instrument so that there is no interval in which there is no financial assurance instrument in effect. No further credits will be awarded for the Bank while the Bank lacks an effective financial assurance instrument.

B. Each Surety Bond or Casualty Insurance policy will designate the Corps and Ecology as distinct and independent obligees. Upon the direction of either the Corps or Ecology, in writing on agency letterhead, the issuing financial institution shall pay from the penal sum the amount specified by the Corps and/or Ecology, up to the maximum cumulative sum of the penalty amount. Payment shall be made directly to the Third Party Designee identified by the Corps and/or Ecology. The Corps and/or Ecology shall be authorized to direct or make partial drawings, and multiple successive drawings, upon the penal sum. The Corps and/or Ecology shall have the exclusive authority to direct payment of the penal sum on the Surety Bond or Casualty Insurance policy and the direction of only one of these two agencies is required in order to accomplish a payment.

C. Upon request of the Sponsor, the Corps and/or Ecology may authorize reductions in the required penalty amounts of the Surety Bond or Casualty Insurance for the Bank when the Corps and/or Ecology have determined, in consultation with the other members of the IRT and the Sponsor, that the Bank objectives and performance standards reflected in Appendix C are being timely met.

D. The Sponsor is solely responsible for any costs, fees, or premiums associated with the issuance, modification, continuation in force, or termination of each Cash Escrow, Letter of Credit, a Surety Bond, or Casualty Insurance. Any such costs may not be deducted from the penalty amount.

E. The Surety Bond may be an independent bond or the Bank may fall under a bond already held by the Corps and Ecology, providing financial assurance for the adjacent sites that fall under Corps permit numbers 200600278 and 200400909.

H.1.2 Long Term Management and Maintenance Endowment Fund

A. In order to implement the Fund, prescribed in Article III.C.2 of this Instrument and underlying management and maintenance actions to be taken following completion of the establishment period of the Bank, the Sponsor will establish an escrow account in an accredited and Federally-insured

financial institution, as follows.

B. The Fund escrow account will be incrementally funded until it is fully funded, as prescribed in Articles III.C.2.b and III.C.2.c of this Instrument. Once the Long Term Management and Maintenance Endowment Fund is fully funded, the Sponsor will be released from any further obligation to deposit a designated sum corresponding to each sale, use, or transfer of credits. The Sponsor will be permitted to accelerate contributions to the Long-Term Management and Maintenance Endowment Fund, and by doing so, the Sponsor may defer subsequent contributions until the balance in the Endowment Fund no longer matches or exceeds the balance required by the computation in Article III.C.2.b. The Sponsor will provide to the IRT an annual account statement displaying a cumulative tabulation of all deposits into the Fund escrow account, with each deposit referencing the associated sale/use/transfer transaction, as well as the principal balance and total account balance, as of December 31 of the previous calendar year, by February 1 of each year. This statement will be submitted until (1) the Fund is fully funded or (2) until the IRT has accepted the Sponsor's written certification that it has terminated all banking activity.

C. The Fund escrow account may bear interest or other earnings. Any earnings generated by the escrow funds shall remain deposited with other escrow account funds. Earnings in excess of the full funding amount specified in Article III.C.2.c of this Instrument will be returned to the Sponsor at the time that the full funding amount is disbursed to the Steward. The Fund account contents may be invested only in the following: an interest-bearing savings or passbook account, savings certificate, or certificate of deposit, held in each case by an institution that is insured by the Federal Deposit Insurance Corporation; alternatively, the Fund principal and earnings may be invested in direct obligations of the Government of the United States of America, in obligations of agencies or insurers that are guaranteed by the Government of the United States of America, or in a money market mutual fund consisting solely of such obligations.

D. The Sponsor will be responsible for all escrow agency and associated account fees, including account termination and final reconciliation costs, which may not be paid out of escrow account funds, or out of the interest or earnings generated thereon.

E. The terms of the escrow instructions will permit regular recurring deposits to the escrow principal as sales, use, or transfers of credits are made and designated sums corresponding to those sales, use, or transfers are deposited to the escrow account.

