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# COLUMBIA RIVER WETLAND MITIGATION BANK MITIGATION BANKING INSTRUMENT

**PORT OF VANCOUVER  
VANCOUVER, WASHINGTON**

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*Prepared By:*

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*and*

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Longview, Washington

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(Revised July 2014)



1 Three mature oak trees exist on an upland knoll in the southeastern portion of the site. The  
 2 existing wetland area has been degraded both structurally and functionally by the grazing, which  
 3 occurred on site for decades.

4  
 5 Generally the goal of the wetland mitigation bank is to plant the site in a mosaic of forested,  
 6 shrub and emergent wetland area, while preserving and protecting the functions associated with  
 7 waterfowl and heron usage of the existing palustrine aquatic bed habitat on site. In addition, the  
 8 active floodplain area, which is currently dominated by non-native pasture grasses, will be  
 9 planted to become active floodplain forest and shrub area interspersed with the existing wetland.  
 10 Newly created wetlands will be established by grading and planting to a willow-dominated  
 11 scrub-shrub community transitioning from the floodplain forest to the existing emergent  
 12 wetlands. Ecologic performance standards related to hydrology, vegetation, invasive species  
 13 control, and habitat structure enhancement are addressed in Appendix C of this Instrument.  
 14 Table 1 includes a summary of management activities on the site, both in creditable and non-  
 15 creditable areas.

16  
 17 Anticipated functional lift post construction is discussed in detail in Appendix A of this  
 18 Instrument. Generally, all functions related to habitat, water quality, and water quantity are  
 19 expected to increase as a result of design implementation.

20  
 21 The primary ecological goals of the Columbia River Wetland Mitigation Bank are as follows:

- 22 • Create additional wetland area by excavating a portion of the site.
- 23 • Create and enhance a variety of habitat types interspersed throughout the site.
- 24 • Control invasive species such as reed canarygrass (*Phalaris arundinacea*), tansy ragwort  
 25 (*Senecio jacobea*), and Himalayan blackberry (*Rubus procerus*) on site.
- 26 • Create and enhance wildlife habitat structure and function of the site.

27  
 28  
 29 **Table 1 – Credit Generation**

<b>Bank Activity</b>	<b>Area (Acres) of Credit Generation</b>	<b>Credit Ratio (Activity Area: Universal Credit)</b>	<b>Anticipated Number of Credits</b>
Wetland Creation PSS/PFO	25.50	1:1	25.50
Wetland Creation PFO/PEM:	1.60	1:1	1.01*
Wetland enhancement ½ to PSS ½ to PFO	59.75**	3:1	19.92
Wetland enhancement PEM to PEM	9.72	4:1	2.43
Wetland enhancement PAB	9.04	4:1	2.26
Plant internal active floodplain to forest	17.80	5:1	3.56
<b>Total</b>	<b>123.41</b>	<b>Varies-See Above</b>	<b>54.68</b>

30 \*0.59 out of 1.60 wetland mitigation credits generated in this area by wetland creation and habitat improvement activities,  
 31 were used to compensate for the Port of Vancouver's Parcel 8 project impacts to water quality and water quantity wetland  
 32 functions. This credit was subtracted from the "Anticipated Number of Credits" available column of Table 1 at the

1 time of inclusion of this property via amendment to the bank instrument. This leaves 1.01 potential credits to be generated  
2 by the Bank in this habitat area.

3 \*\* This acreage includes existing PFO (6.03 acres) and existing PSS (1.91 acres).  
4

5 **E. Interagency Review Team.** Whereas, in consideration of the establishment and  
6 maintenance of the Bank, the Interagency Review Team (IRT) is willing to award credits in  
7 accordance with the procedures outlined in this Instrument, which will be made available to  
8 serve as compensatory mitigation pursuant to applicable Federal and Washington State laws and  
9 regulations. The IRT is the group of Federal, State, and local agencies that has reviewed and will  
10 apply the provisions of the Instrument, and consists of:

- 11
- 12 1. Co-Chair: U.S. Army Corps of Engineers, Seattle District (Corps)
- 13 2. Co-Chair: Washington Department of Ecology (Ecology)
- 14 3. U.S. Environmental Protection Agency, Region X (EPA)
- 15 4. City of Vancouver

16  
17 NOW, THEREFORE, the Parties agree to the following:  
18  
19

## 20 II. LEGAL AUTHORITIES

21  
22 **A. Authorities.** The establishment, use, operation, and maintenance of the Bank shall be  
23 carried out in accordance with the following principal authorities.  
24

- 25 1. Federal:
  - 26 a. Clean Water Act (33 USC §§ 1251 et seq.)
  - 27 b. Rivers and Harbors Act of 1899 (33 USC § 403)
  - 28 c. Regulatory Programs of the Corps of Engineers, Final Rule (33 CFR Parts 320 -332)
  - 29 d. Memorandum of Agreement between the Environmental Protection Agency and the  
30 Department of the Army concerning the Determination of Mitigation Under the Clean  
31 Water Act, Section 404(b)(1) Guidelines (February 6, 1990)
  - 32 e. U.S. Army Corps of Engineers Regulatory Guidance Letter 05-1, *Guidance on Use of*  
33 *Financial Assurances, and Suggested Language for Special Conditions for*  
34 *Department of the Army Permits Requiring Performance Bonds*, U.S. Army Corps of  
35 Engineers, February 14, 2005
  - 36 f. Guidelines for the Specification of Disposal Sites for Dredged and Fill Material  
37 (“404(b)(1) Guidelines,” 40 CFR Part 230)
  - 38 g. National Environmental Policy Act (42 USC §§ 4321 et seq.)
  - 39 h. Council on Environmental Quality Procedures for Implementing the National  
40 Environmental Policy Act (40 CFR Parts 1500-1508)
  - 41 i. Executive Order 11990 (Protection of Wetlands)
  - 42 j. Executive Order 11988 (Protection of Floodplains)
  - 43 k. Executive Order 13112 (Invasive Species)
  - 44 l. Fish and Wildlife Coordination Act (16 USC §§ 661 et seq.)
  - 45 m. Fish and Wildlife Service Mitigation Policy (46 FR 7644-7663, 1981)
  - 46 n. Endangered Species Act (16 USC §§ 1531 et seq.)

- 1       o.    Magnuson-Stevens Fishery Conservation and Management Act (16 USC §§ 1801 et  
2       seq.)
- 3       p.    National Historic Preservation Act, as amended (16 USC § 470)
- 4
- 5    2.    State of Washington:
- 6       a.    Washington Water Pollution Control Act, RCW 90.48 et seq.
- 7       b.    Washington State Alternative Mitigation Policy, developed by Ecology, Washington  
8       State Department of Transportation (WSDOT), Washington Department of Fish and  
9       Wildlife (WDFW), and the Office of Community Development (OCD), 2000
- 10      c.    Washington State’s Pilot Rule on Wetland Mitigation Banking (WAC 173-700,  
11      Compensatory Wetland Mitigation Banking)
- 12      d.    State of Washington Wetlands Mitigation Banking Statute (RCW 90-84)
- 13      e.    Washington State Environmental Policy Act (“SEPA” RCW 43.21C and WAC 197-  
14      11)
- 15      f.    Growth Management Act (RCW 36.70A) and Critical Areas Regulations “Best  
16      Available Science” compliance WAC 365-195-900 to 925)
- 17      g.    Washington State Hydraulic Code (RCW 77.55 Hydraulic Project Approval)
- 18      h.    Washington State Shoreline Management Act (RCW 90.58, WAC 173-200 as  
19      amended)
- 20      i.    Washington State Salmon Recovery Act (RCW 75.46)
- 21      j.    Washington State Aquatic Resources Act (RCW 79.90, RCW 90.74)
- 22
- 23

### 24    **III. ESTABLISHMENT OF THE BANK**

25

26    **A. Permits.** The Sponsor shall obtain all appropriate federal, state, and city environmental  
27    documentation, permits, and other authorizations needed to establish and maintain the Bank,  
28    prior to the award of any mitigation credits. Compliance with this Instrument does not fulfill the  
29    requirement, or substitute, for such authorization. Local authorizations and permits include, but  
30    are not limited to, City of Vancouver approvals, permits, and authorizations issued under the  
31    statutory and regulatory provisions listed in the Appendices of this Instrument.

32

33    **B. Bank Establishment.** The Sponsor agrees to establish the Bank as described in Appendix  
34    B. In recognition thereof, credits will be awarded to the Sponsor in accordance with the  
35    procedures and schedules prescribed in the Appendices, particularly in Appendices C and D. In  
36    establishing the Bank, deviations from the prescribed Bank development plan and design may  
37    only be made with the prior approval of the Corps and Ecology, following consultation with the  
38    other members of the IRT. In the event the Sponsor determines that modifications to the Bank  
39    development plan are necessary, the Sponsor shall submit a written request for such modification  
40    to the IRT, through the Co-Chairs, for approval. Documentation of implemented modifications  
41    shall be made consistent with Article VI.B.2. of this Instrument. The Establishment Period of the  
42    Bank is defined in Article IV.K.

43

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

46

1           1. The Sponsor shall furnish either a Letter of Credit or a Surety Bond to provide  
2 financial assurance underlying the establishment and initial functionality of the Bank. This Letter  
3 of Credit or Surety Bond must be initiated by the Sponsor, in a form and content approved by the  
4 Corps and Ecology, and shall conform to the requirements of Appendix H, before any  
5 construction or implementation activities may be conducted on-site during the establishment  
6 period of the Bank, as defined in Article IV.K. and prior to the award of any Bank credits. Any  
7 construction or implementation activities conducted on-site prior to the inception of the  
8 establishment period must cease as of the effective date of this Instrument pursuant to Article  
9 VI.B.1, until an approved Letter of Credit or Surety Bond is initiated. The initial award of credits  
10 in recognition of accomplishment of the performance standards under Objective 1, pursuant to  
11 Section D.1.2.A of Appendix D, will serve as the IRT's notification that construction and  
12 implementation activities are authorized to commence. The Corps and Ecology must specifically  
13 approve all terms and conditions of the Letter of Credit or Surety Bond, as well as the identity of  
14 the financial institution issuing and underwriting the Letter of Credit or Surety Bond. For Letters  
15 of Credit, only federally-insured institutions rated investment grade or higher may issue the  
16 Letter of Credit. The Sponsor shall provide the IRT with a credit rating that indicates the  
17 financial institution has the required rating as of the date of first issuance of the Letter of Credit.  
18 This credit rating shall be from a recognized commercial rating service as specified in Office of  
19 Federal Procurement Policy Pamphlet No. 7, available through the website of the Office of  
20 Management and Budget, Executive Office of the President. Provided any required credit rating  
21 is held, approval of the financial institution selected by the Sponsor shall not be unreasonably  
22 withheld.

23  
24           a. The Corps or Ecology, acting independently or in concert, may direct  
25 disbursement from the credit funds account on a Letter of Credit, or payment of the penal sum on  
26 a Surety Bond, as applicable, under the following circumstances: upon abandonment of Bank  
27 establishment efforts, or any failure stemming from any cause to achieve any of the Bank  
28 Objectives or Performance Standards as reflected in Section C.1.2 of Appendix C, including, but  
29 not limited to, deficient design, ineffective establishment, deterioration of functionality or  
30 performance, or financial limitations of the Sponsor. Ninety calendar days prior to accessing  
31 funds pursuant to a Letter of Credit, unless accessing the Letter of Credit funds pursuant to  
32 Section H.1.1.B. of Appendix H, or ninety calendar days prior to requiring payment of the penal  
33 sum on a Surety Bond, the Corps and Ecology shall provide specific and express written direction  
34 for corrective action to the Sponsor in accordance with Article IV.H. of this Instrument and  
35 Section F.1.4. of Appendix F. If, within 90 days of delivery of notice of the demand for  
36 corrective action, the Sponsor has initiated compliance efforts and the Corps and Ecology have  
37 determined, in their sole discretion, that substantial progress has been made toward completion of  
38 corrective action, the Corps and Ecology will defer accessing the Letter of Credit or requiring  
39 payment on the Surety Bond, as applicable.

40  
41           b. Following consultation with the IRT, the Corps and Ecology may access the  
42 funds guaranteed by the Letter of Credit, or require payment on the Surety Bond, as applicable, to  
43 accomplish any of the following objectives or features of the Bank: construction, establishment,  
44 monitoring, maintenance, or adaptive management activities reflected in, or directly supporting  
45 accomplishment of, the Objectives and Performance Standards reflected in Section C.1.2 of  
46 Appendix C. In lieu of accomplishing all Objectives and Performance Standards in Section C.1.2

1 of Appendix C, the Corps and Ecology, in their sole discretion, following consultation with the  
2 other members of the IRT, may accomplish only that component or those components of the  
3 Objectives and Performance Standards that are deemed reasonably necessary to achieve a project  
4 that is stable, self-sustaining, and provides a level of general benefit to the aquatic resources of  
5 the watershed that the Corps and Ecology deem appropriate under the circumstances. Corrective  
6 or remedial actions determined to be necessary will be accomplished through a Third Party  
7 Designee selected by the Corps and Ecology.  
8

9 c. Any Letter of Credit shall take the general form of an agreement on the part of  
10 the issuing financial institution to honor the engagement reflected therein. Any Surety Bond shall  
11 take the general form of an indemnity contract in a sum certain obliging the surety to pay the full  
12 face value of the bond to the beneficiaries in the event that the Corps and/or Ecology declare that  
13 the principal has failed to fulfill the obligations established in this Instrument. A Letter of Credit  
14 or Surety Bond, as applicable, shall be furnished to guarantee the establishment activities of the  
15 bank, in the following amount:

16 (i): \$166,328  
17  
18

19 d. Upon certification by the IRT that the following performance standards, as  
20 prescribed in Table D-3 of Appendix D have been achieved, the Corps and Ecology will  
21 authorize in writing that the required amount of the Letter of Credit, or the required penal sum of  
22 the Surety Bond, as applicable, be modified as follows:

23 (i) Following submission to, and approval by, the IRT of the as-built reflecting  
24 completion of planting for the site and before additional credits are released: a revised Letter of  
25 Credit or Surety Bond in the amount of \$209,790 must be established;  
26  
27

28 (ii) Following achievement of all Year 1 performance standards, the required  
29 Letter of Credit or Surety Bond amount will be \$166,328;  
30

31 (iii) Following achievement of all Year 3 performance standards, the required  
32 Letter of Credit or Surety Bond amount will be \$107,280;  
33

34 (iv) Following achievement of all Year 5 performance standards, the required  
35 Letter of Credit or Surety Bond amount will be \$64,800;  
36

37 (v) Following achievement of all Year 7 performance standards, the required  
38 Letter of Credit or Surety Bond amount will be \$42,000;  
39

40 e. Upon satisfaction of all Objectives and Performance Standards as required in  
41 Section C.1.1 of Appendix C for the bank, and upon a determination by the Corps and Ecology  
42 that the Sponsor has satisfied the remaining requirements reflected in Article IV.K. of this  
43 Instrument for termination of the establishment period of the Bank, the Corps and Ecology will  
44 waive their right to payment under, and authorize rescission or cancellation of, the financial  
45 assurance instrument applicable for the bank:  
46

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

3  
4 (ii) The Sponsor has been awarded all credits, or has permanently ceased  
5 banking activities.

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

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

## 38 39 **2. Long-Term Management and Maintenance Endowment Fund**

40  
41 a. The Sponsor shall institute an endowment fund, established and maintained  
42 through an escrow account, to fund management and maintenance actions as defined in Article  
43 IV.M.1. of this Instrument and Section G.1.2. of Appendix G, following the termination of the  
44 establishment period of the Bank. This Long-Term Management and Maintenance Endowment  
45 Fund shall be incrementally funded throughout the establishment period of the Bank, with the  
46 funds disbursed to a Long-Term Steward upon the Sponsor's relinquishment of responsibility for

1 long-term maintenance and management of the Bank. The Sponsor agrees to continue to deposit  
2 funds in the Long-Term Management and Maintenance Endowment Fund escrow account,  
3 pursuant to Article III.C.2.b. of this Instrument, until the Long-Term Management and  
4 Maintenance Endowment Fund is fully funded in accordance with Article III.C.2.c. of this  
5 Instrument.

6  
7 b. The Long-Term Management and Maintenance Endowment Fund escrow  
8 account shall be funded throughout the establishment period of the Bank by depositing a  
9 designated sum corresponding to each sale, use, or transfer of mitigation credits. This designated  
10 sum shall be \$5,000 per credit sold, used, or transferred. The Corps and Ecology must  
11 specifically approve the identity of the institution, and form of account, in which the escrow  
12 account is established. Approval of the identity of the financial institution at which the escrow  
13 account is established, and the form of the investment account, shall not be unreasonably  
14 withheld.

15  
16 c. The Long-Term Management and Maintenance Fund shall be considered to be  
17 fully funded when the total value of the escrow account, including the principal amounts  
18 deposited and earnings, has accumulated to a total of \$133,333.

19  
20 d. The Sponsor shall enter into an escrow agreement with both the Corps and  
21 Ecology conforming to the requirements of Section H.1.3 of Appendix H. The escrow agreement  
22 for the Long-Term Management and Maintenance Endowment Fund shall be signed prior to the  
23 release of any credits from the Bank.

24  
25 e. Upon receipt of written instructions signed by the Sponsor, Corps, and Ecology,  
26 the Long-Term Management and Maintenance Endowment Fund escrow account shall be  
27 terminated and all funds disbursed pursuant to the instructions of the Corps and Ecology.

28  
29 **D. Real Estate Provisions.** All real property to be included within the Bank is presently  
30 owned in fee simple by the Port. The Sponsor is responsible for ensuring that the Port burden the  
31 title to the Bank real property through the grant of a conservation easement, pursuant to the  
32 provisions of Section G.1.1 of Appendix G. The conservation easement must be approved,  
33 initiated, and recorded pursuant to Section G.1.1 of Appendix G, prior to the award of any Bank  
34 credits and before any construction or implementation activities may be conducted on-site during  
35 the establishment period of the Bank, as defined in Article IV.K. Any construction or  
36 implementation activities conducted on-site prior to the inception of the establishment period  
37 must cease as of the effective date of this Instrument pursuant to Article VI.B.1, until an  
38 approved conservation easement is recorded. The initial award of credits in recognition of  
39 accomplishment of the performance standards under Objective 1, pursuant to Section D.1.2.A of  
40 Appendix D, will serve as the IRT's notification that construction and implementation activities  
41 are authorized to commence.

#### 1 **IV. OPERATION OF THE BANK**

2  
3 **A. Service Area.** The Bank is approved to provide compensatory mitigation for impacts to  
4 the Waters of the United States and Waters of the State, including wetlands, within the Service  
5 Area. The Service Area includes the historical floodplain of the Columbia River from the  
6 confluence of the Cowlitz River with the Columbia River upstream to Bonneville Dam, as well  
7 as those portions of the watersheds that immediately adjoin and influence the floodplain. The  
8 Service Area lies entirely on the north side of the Columbia River within Washington State. A  
9 more detailed description and maps of the Service Area are included in Appendix E.

10  
11 In exceptional situations, the Bank may be used to compensate for an impact that occurs outside  
12 of the Service Area if specifically approved by the regulatory agency(ies) having jurisdiction  
13 over that impact and by the IRT, pursuant to the procedures and criteria prescribed in Section  
14 E.1.1 of Appendix E. If the Corps and Ecology determine that the Sponsor has sold, used, or  
15 transferred credits at any time to provide compensatory mitigation for loss of aquatic resources  
16 outside of the Service Area without prior approval, the Corps and Ecology, in consultation with  
17 the other members of the IRT, may direct that the sale, use, or other transfer of credits  
18 immediately cease, and will determine, in consultation with the IRT, the Sponsor and the  
19 appropriate regulatory authority, what remedial actions are necessary to correct the situation and  
20 will direct their performance prior to the award of any additional mitigation credits.  
21 Notwithstanding the fact that ceasing sale, use, or other transfer of credits may have been  
22 required, unless this Instrument is terminated pursuant to Article IV.J. or VI.B., the Sponsor shall  
23 remain responsible for the timely and effective achievement of all the Objectives and  
24 Performance Standards mandated in Section C.1.2 of Appendix C.

25  
26 **B. Access to the Bank Site.** The Sponsor will provide for access to the Bank site by members  
27 of the IRT or their agents or designees, as reasonably necessary, with 24 hour notice to the Port,  
28 for the purpose of inspection, compliance monitoring, and remediation consistent with the terms  
29 and conditions of this Instrument and the Appendices, throughout the periods of Bank  
30 establishment, operation, and long-term management and maintenance. Inspecting parties shall  
31 provide the Sponsor at least 48 hours prior notice of a scheduled inspection, and shall not  
32 unreasonably disrupt or disturb activities on the property.

#### 33 34 **C. Availability of Mitigation Credits.**

35  
36 **1. Availability and Debiting of Credits.** Subject to the documentation and scheduling  
37 provisions of Section D.1. of Appendix D, the Sponsor may submit to the IRT written evidence  
38 that particular performance standards have been achieved. If the Corps and Ecology, after  
39 consulting with the other members of the IRT and the Sponsor, concur that certain performance  
40 standards have been achieved in full, the IRT will respond in writing to the Sponsor that the  
41 credits associated with those performance standards are available for marketing or use by the  
42 Sponsor. Each instance of sale or any other transfer of credits to a third party shall be reflected  
43 in a transfer agreement. Each such transfer agreement must indicate the permit number of the  
44 impacting project, the number of universal credits transferred, and must expressly specify that  
45 the Sponsor, its successors and assigns assumes responsibility for accomplishment and

1 maintenance of the transferee's compensatory mitigation requirements associated with the  
2 impacting project, upon completion of the credit transfer.

3  
4 **2. Availability of Credits in the Event Financial Assurances are Accessed.** In the  
5 event the Corps or Ecology, acting pursuant to Articles III.C.1.a. and III.C.1.b. of this  
6 Instrument, accesses the Financial Assurances established pursuant to Article III.C.1. of this  
7 Instrument and accomplishes any objectives, performance standards, or features of the Bank, the  
8 Corps and Ecology, in consultation with the other members of the IRT, may award credits for  
9 sale, use, or transfer by the Sponsor, in a quantity reflecting the objectives and performance  
10 standards achieved as a result of such remedial action.

11  
12 **D. Credit Deficit or Fraudulent Transactions.** If the Corps and/or Ecology determine at any  
13 point that the Bank is operating without prior written approval at a deficit, or has engaged in  
14 fraudulent transactions in the sale, use, or other transfer of credits, the Corps and/or Ecology will  
15 direct the Sponsor to immediately cease award and sale, use, or other transfer of credits, and will  
16 determine, in consultation with the IRT and the Sponsor, what remedial actions are necessary to  
17 correct the situation and will direct their performance prior to the award of any additional  
18 mitigation credits.

19  
20 **E. Provisions for Use of the Mitigation Bank Area.** The Corps and/or Ecology may treat  
21 the Sponsor as being in material default of a provision of this Instrument and proceed  
22 accordingly under Article IV.J., should the Corps and/or Ecology, in consultation with the IRT,  
23 determine that either of the following have occurred:

24  
25 1. The grant of additional easements, rights of way, or any other property interest in the  
26 project areas without the written consent of the Corps and Ecology, in consultation with the IRT.

27  
28 2. The use or authorization of the use of any areas within the Bank for any purpose that  
29 is contrary to the provisions of this Instrument or the conservation easement, or which interferes  
30 with the conservation purposes of the Bank.

31  
32 **F. Maintenance Provisions.** Following achievement of the performance standards, the  
33 Sponsor agrees to perform all necessary work to maintain those standards as prescribed in  
34 Section B.1.2.4 of Appendix B and Section F.1.5 of Appendix F.

35  
36 **G. Monitoring Provisions.** The Sponsor agrees to perform all necessary work, pursuant to  
37 Section F.1.2 of Appendix F, to monitor the Bank during the establishment period to demonstrate  
38 compliance with the performance standards established in Appendix C.

39  
40 **H. Contingency Plans/Remedial Actions.** In the event the Bank fails to achieve by the  
41 specified date one or more of the performance standards delineated in Appendix C, the Sponsor  
42 shall develop necessary contingency plans and implement appropriate remedial and monitoring  
43 actions for the Bank as specified in Section F.1.4 of Appendix F, to attain those project  
44 objectives and performance standards. Prior to their execution, proposals for the contingency  
45 plans and remediation and monitoring activities must be approved by the Corps and Ecology, in  
46 consultation with the Sponsor and the IRT. In the event the Sponsor fails to implement

1 necessary remedial actions within the prescribed period, the Corps and/or Ecology, following  
2 consultation with the Sponsor and the IRT, will direct remedial, corrective, and/or sanctioning  
3 action in accordance with the procedures specified in Section F.1.4.A. of Appendix F.  
4 Alternatively, the Corps and Ecology may accomplish such remedial action directly, acting  
5 through a Third Party Designee, by accessing the financial assurance instrument pursuant to  
6 Articles III.C.1.a. and III.C.1.b. of this Instrument.  
7

8 **I. Force Majeure.** In the event of substantial damage caused by a natural or human-caused  
9 catastrophic event or a deliberate and unlawful act, that the Corps and Ecology, in consultation  
10 with the Sponsor and the IRT, determine has had a significant adverse impact on the quality of  
11 the aquatic functions, native vegetation, soils, or wildlife of the Bank and is beyond the control  
12 of the Sponsor, its agents, contractors, or consultants to prevent or mitigate: the Sponsor may  
13 request, pursuant to Article III.B. of this Agreement, and the Corps and Ecology, in consultation  
14 with the IRT, may approve changes to the construction, operation, project objectives,  
15 performance standards, or crediting formula of the Bank, pursuant to the standards and  
16 procedures specified in Section F.1.4 of Appendix F. A natural catastrophic event includes, but  
17 is not limited to, a flood equal to or greater in magnitude than the 100-year flood event, an  
18 earthquake of a force projected from an earthquake with a return period of 475 years, drought  
19 that is significantly longer than the periodic multi-year drought cycles that are typical of weather  
20 patterns in the Pacific Northwest, as well as debilitating disease, wildfire, depredation, regional  
21 pest infestation, or fluviogeomorphic change. A human-caused catastrophic event includes, but  
22 is not limited to, war, insurrection, riot or other civil disorders, spill of a hazardous or toxic  
23 substance, or fire. A deliberate and unlawful act includes, but is not limited to, the dumping of a  
24 hazardous or toxic substance, as well as significant acts of vandalism or arson. If any such act  
25 occurs, the IRT, in consultation with the Sponsor, will determine what changes to the Bank  
26 and/or this Instrument will be in the best interest of the Bank and the aquatic environment. The  
27 consequences of any events of force majeure recognized as such by the Corps and Ecology shall  
28 not affect the status of previously released credits, whether or not they have yet been sold, used  
29 or transferred.  
30

31 **J. Default.** Should the Corps and/or Ecology, in consultation with the IRT, determine that the  
32 Sponsor is in material default of any provision of this Instrument, the Corps and/or Ecology may  
33 cease award of mitigation credits, and may notify the Sponsor that the award, sale, use, and/or  
34 transfer of mitigation credits are suspended until the delineated deficiencies are rectified. Upon  
35 written notification of suspension, the Sponsor agrees to immediately cease any sale, use, or  
36 transfer transactions not yet finally completed, until informed by the Corps and/or Ecology that  
37 award, sale, use, or transfer of credits may be resumed. Should the Sponsor remain in default for  
38 a period of 90 days, the Corps and/or Ecology, following consultation with the IRT, may  
39 terminate this Instrument and any subsequent banking operations. In the event such termination  
40 action is commenced, the Sponsor agrees to fulfill its pre-existing obligations to perform all  
41 establishment, monitoring, maintenance, management, and remediation responsibilities that arise  
42 directly from credits that have already been awarded, sold, used, or transferred at the time of  
43 termination.  
44

45 **K. Establishment Period of the Bank.** The establishment period of the Bank will commence  
46 on the date the Instrument takes effect pursuant to Article VI.B.1. Prior to termination of the

1 establishment period of the Bank, the IRT will perform a final compliance inspection to evaluate  
2 whether all performance standards have been achieved. Upon the Corps and Ecology  
3 determining, in consultation with the other members of the IRT and the Sponsor, that:

- 4
- 5 (1) all applicable performance standards prescribed in Appendix C have been achieved;
- 6 (2) all available credits have been awarded, or the Sponsor has permanently ceased  
7 banking activities;
- 8 (3) the Sponsor has prepared a Long-Term Management and Maintenance Plan, that has  
9 been approved by the Corps and Ecology, pursuant to Section G.1.2. of Appendix G;
- 10 (4) the Sponsor has either:
  - 11 (i) assumed responsibilities for accomplishing the Long-Term Management and  
12 Maintenance Plan, in which case the Sponsor will fulfill the role of Long-Term  
13 Steward, or
  - 14 (ii) has assigned those responsibilities to another Long-Term Steward pursuant to  
15 Article IV.M.2. of this Instrument;
- 16 (5) the Long-Term Management and Maintenance Endowment Fund has been fully  
17 funded;
- 18 (6) the contents of the Long-Term Management and Maintenance Endowment Fund have  
19 been transferred to the Long-Term Steward; and
- 20 (7) the Bank has complied with the terms of this Instrument,

21 the establishment period for that phase of the Bank will terminate, and the period of long-term  
22 maintenance and management will commence.

23  
24 **L. Operational Life of the Bank.** The operational life of the Bank will commence on the  
25 date the Instrument takes effect pursuant to Article VI.B.1. Following the termination of the  
26 establishment period of the Bank, and (1) upon sale, use, or transfer of all credits, or (2) upon  
27 acceptance by the IRT of a written declaration by the Sponsor that it has permanently ceased  
28 banking activities, the operational life of the Bank will terminate.

29  
30 **M. Long-Term Management and Maintenance.**

31  
32 1. The Sponsor shall develop a Long-Term Management and Maintenance Plan  
33 consistent with the guidelines and objectives specified in Section G.1.2 of Appendix G, and  
34 submit the Plan for approval by the Corps and Ecology, in consultation with the other members  
35 of the IRT. The Sponsor is responsible for execution of the approved Long-Term Management  
36 and Maintenance Plan. The Sponsor may only deviate from the approved Plan upon written  
37 approval of the Corps and Ecology, following consultation with the Sponsor and the IRT.

38  
39 2. The Sponsor may assign its long-term management and maintenance responsibilities  
40 to a third party assignee, which will then serve as Long-Term Steward in place of the Sponsor.  
41 The identity of the assignee and the terms of the long-term management and maintenance  
42 agreement between the Sponsor and the assignee must be approved by the Corps and Ecology,  
43 following consultation with the IRT, in advance of assignment.

44  
45 3. Upon execution of a long-term management and maintenance assignment agreement  
46 and the transfer of the contents of the Long-Term Management and Maintenance Endowment

1 Fund, and upon satisfaction of the remaining requirements for termination of the establishment  
2 period of the Bank under Article IV.K. of this Instrument, the Sponsor shall be relieved of all  
3 further long-term management and maintenance responsibilities under this Instrument.  
4

5 **N. Accomplishment of Sponsorship Responsibilities; Transfer of Ownership of the Bank**  
6 **Site.** The Sponsor shall remain responsible for complying with the provisions of this Instrument  
7 throughout the operational life of the Bank, regardless of the ownership status of the underlying  
8 real property, unless those responsibilities have been assigned pursuant to the provisions of  
9 Article VI.C. of this Instrument. The Sponsor must provide written notice at least 60 days in  
10 advance that the Port of Vancouver USA, its successors or assigns, will transfer ownership of all  
11 or a portion of the Bank real property to another party.  
12

### 13 **V. RESPONSIBILITIES OF THE CORPS AND ECOLOGY**

14  
15 A. The Corps and Ecology agree to provide appropriate oversight in carrying out provisions of  
16 this Instrument.  
17

18 B. The Corps and Ecology agree to review and provide comments on project plans, monitoring  
19 reports, contingency and remediation proposals, and similar submittals from the Sponsor in a  
20 timely manner. As Co-Chairs, the Corps and Ecology will coordinate their review with the other  
21 members of the IRT.  
22

23 C. The Corps and Ecology agree to review requests to modify the terms of this Instrument,  
24 determine achievement of performance standards in order to evaluate the award of credits for the  
25 Bank, or approve the Long-Term Management and Maintenance Plan. As Co-Chairs, the Corps  
26 and Ecology will coordinate review with the members of the IRT so that a decision is rendered  
27 or comments detailing deficiencies are provided in a timely manner. The Corps and Ecology  
28 agree to not unreasonably withhold or delay decisions on such requests.  
29

30 D. The Corps and Ecology agree to act in good faith when rendering decisions about  
31 acceptability of financial assurances, requiring corrective or remedial actions, requiring long-  
32 term management and maintenance actions, awarding credits and making decisions on requests  
33 to modify wetland credit generation ratios or the credit award schedule. The Corps and Ecology  
34 will exercise good judgment in accessing financial assurances, and will utilize those monies only  
35 to the extent they reasonably and in good faith conclude that such remedial or corrective actions  
36 are an effective and efficient expenditure of resources. In implementing the process delineated  
37 in Article III.C.1 of this Instrument, the Corps and Ecology will act in good faith in determining  
38 the scope and nature of corrective actions to be undertaken; shall act in good faith in conducting  
39 monitoring, developing reports, and assessing compliance with performance standards; and will  
40 not unreasonably limit corrective action activities or otherwise apply their discretion so as to  
41 unduly prejudice the Sponsor as to the timing or number of credits awarded. Corps and Ecology  
42 approval of the identity of any assignee responsible for executing the Long-Term Management  
43 and Maintenance Plan, and approval of the terms of any long-term management and maintenance  
44 assignment agreement, will not be unreasonably withheld.  
45

1 E. The Corps and Ecology will periodically inspect the Bank site as necessary to evaluate, in  
2 consultation with the other members of the IRT, the achievement of performance standards, to  
3 assess the results of any corrective measures taken, to monitor implementation of the Long-Term  
4 Management and Maintenance Plan, and, in general, to verify the Sponsor's compliance with the  
5 provisions of this Instrument.  
6

7 F. Upon satisfaction of the requirements of Article IV.K. under this Instrument, the Corps and  
8 Ecology will certify, following consultation with the Sponsor and the other members of the IRT,  
9 that the establishment period of the Bank has terminated, and that the period of long-term  
10 management and maintenance has commenced. Upon satisfaction of the requirements of Article  
11 IV.L. of this Instrument, the Corps and Ecology, following consultation with the other members  
12 of the IRT, will jointly issue a letter certifying that the operational life of the Bank has  
13 terminated.  
14

## 15 **VI. GENERAL PROVISIONS**

16

17 **A. Decision Making by Consensus.** The Corps and Ecology will strive to achieve consensus  
18 regarding issues that arise pertaining to the establishment, operation, maintenance, and  
19 management of the Bank. As Chairs, the Corps and Ecology will coordinate the review and  
20 oversight activities of the IRT so as to best facilitate opportunity to reach the desired consensus.  
21 Review and oversight decisions will take into account the views of the Sponsor to the maximum  
22 extent practicable. Where consensus cannot otherwise be reached within a reasonable  
23 timeframe, following full consideration of the comments of the members of the IRT and  
24 following consultation with the Sponsor, the Corps holds the responsibility and authority under  
25 Section 404 of the Clean Water Act, and Ecology holds independent responsibility and authority  
26 under Section 401 of the Clean Water Act and RCW ch. 90.48, to make final decisions regarding  
27 the application of the terms of this Instrument.  
28

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

30

31 1. This Instrument, consisting of both this Basic Agreement and the Appendices, will  
32 enter into effect upon the signature by authorized representatives of each of the Corps, Ecology,  
33 and the Sponsor, as of the date of the last of these signatures.  
34

35 2. This Basic Agreement portion of the Instrument may be amended or modified only  
36 with the written approval of the Sponsor, the Program Manager for Shorelands and  
37 Environmental Assistance on behalf of Ecology, and the Seattle District Engineer on behalf of  
38 the Corps, or their designees. Any such modifications or amendments will take effect following  
39 consultation with the other members of the IRT. Amendment of the provisions of the  
40 Appendices may be effectuated through an exchange of letters signed by the Sponsor, the  
41 Mitigation Banking Specialist serving as Co-Chair on behalf of the Corps, and the Mitigation  
42 Banking Specialist serving as Co-Chair on behalf of Ecology, following consultation with the  
43 other members of the IRT, provided the exchange of letters expresses mutual agreement as to the  
44 exact language to be deleted or modified, and the exact language to be inserted.  
45

1           3. This Instrument may be terminated by the mutual agreement of the Sponsor, Corps,  
2 and Ecology, following consultation with the IRT, or may be terminated under the terms of  
3 Article IV.J. of this Instrument in the case of default by the Sponsor. In the event any  
4 termination action is commenced, the Sponsor agrees to fulfill its pre-existing obligations to  
5 perform all establishment, monitoring, maintenance, management, and remediation  
6 responsibilities that arise directly from credits that have already been awarded, sold, used, or  
7 transferred at the time of termination.  
8

9           4. Upon termination of the operational life of the Bank pursuant to Article IV.L., and  
10 certification to that effect pursuant to Article V.F., this Instrument shall terminate without further  
11 action by any Party. Thereafter, the Long-Term Management and Maintenance Plan developed,  
12 approved, and instituted in accordance with Article IV.M. shall govern the continuing  
13 obligations of the Sponsor, or its assignee as applicable.  
14

15 **C. Assignment of Obligations under this Instrument.** The Sponsor may be permitted to  
16 assign its obligations, responsibilities, and entitlements under this Instrument to a third party.  
17 The Corps and Ecology, following consultation with the IRT, must approve the identity of the  
18 assignee in order for any assignment to effectively relieve the Sponsor of those obligations. In  
19 evaluating a prospective assignee, the Corps and Ecology may consider characteristics such as  
20 environmental mitigation expertise, wetlands mitigation project or analogous experience, and  
21 financial strength and stability. Approval of the identity of the assignee will not be unreasonably  
22 withheld. The assignee must execute a mitigation banking instrument with the Corps and  
23 Ecology under terms identical, to the extent practicable, to the present Instrument. The  
24 applicable financial assurances established pursuant to Articles III.C.1. and III.C.2. of this  
25 Instrument must be initiated. The obligations, responsibilities, and entitlements under this  
26 Instrument may reside in only a single entity at any one time, and may not be severed or  
27 transferred piecemeal. However, the physical ownership of the Bank site real property and the  
28 obligations, responsibilities, and entitlements under this Instrument are separate and distinct;  
29 thus, ownership may be transferred independently of assignment of this Instrument. Once  
30 assignment has been properly accomplished, the Sponsor will be relieved of all its obligations  
31 and responsibilities under this Instrument. Specific additional provisions pertaining to the  
32 assignment of long-term management and maintenance obligations are described at Article  
33 IV.M.  
34

35 **D. Specific Language of this Basic Agreement Shall Be Controlling.** To the extent that  
36 specific provisions of this Basic Agreement portion of the Instrument are inconsistent with any  
37 terms and conditions contained in the Appendices, or inconsistent with other documents that are  
38 incorporated into this Instrument by reference and that are not legally binding, the specific  
39 language within this Basic Agreement shall be controlling.  
40

41 **E. Notice.** Any notice required or permitted hereunder shall be deemed to have been given  
42 either (i) when delivered by hand, or (ii) three (3) days following the date deposited in the United  
43 States mail, postage prepaid, by registered or certified mail, return receipt requested, or (iii)  
44 when sent by Federal Express or similar next-day nationwide delivery system, addressed as  
45 follows (or addressed in such other manner as the party being notified shall have requested by  
46 written notice to the other party):  
47

1           **Clark County Mitigation Partners**

2           PO Box 354  
3           Kirkland, WA 98033

4  
5           **U.S. Army Corps of Engineers, Seattle District**

6           Mitigation Banking Specialist/Co-chair of the IRT  
7           Regulatory Branch  
8           Seattle District, Corps of Engineers  
9           4735 E. Marginal Way South  
10          P.O. Box 3755  
11          Seattle, WA 98124-3755  
12          206-764-3495

13  
14          **Washington State Department of Ecology**

15          Mitigation Banking Specialist/ Co-chair of the IRT  
16          Shorelands and Environmental Assistance Program  
17          P.O. Box 47600  
18          300 Desmond Drive  
19          Olympia, WA 98504-7600  
20          360-407-6749

21  
22          Any other communications called for under this Instrument between the Co-Chairs and the other  
23          members of the IRT may be carried out through electronic mail, telephone communications, or  
24          regular mail addressed as indicated in the above sub-paragraph and as follows:

25  
26          **US Environmental Protection Agency**

27          Region 10  
28          Aquatic Resources Unit  
29          ETPA-083  
30          1200 Sixth Ave  
31          Seattle WA 98101

32  
33          **City of Vancouver**

34          Community Planning  
35          P.O. Box 1995  
36          Vancouver, WA 98668-1995

37  
38          **F. Entire Agreement.** This Instrument constitutes the entire agreement between the parties  
39          concerning the subject matter hereof.

40  
41          **G. Invalid Provisions.** In the event any one or more of the provisions contained in this  
42          Instrument are held to be invalid, illegal, or unenforceable in any respect, such invalidity,  
43          illegality, or unenforceability will not affect any other provisions hereof, and this Instrument shall  
44          be construed as if such invalid, illegal, or unenforceable provision had not been contained herein.  
45

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

11  
12 **I. Attorneys' Fees.** If any action at law or equity, including any action for declaratory relief,  
13 is brought to enforce or interpret the provisions of this Instrument, each party to the litigation  
14 shall bear its own attorneys' fees and costs of litigation.

15  
16 **J. Availability of Funds.** Implementation of this Instrument is subject to the requirements of  
17 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  
21 **K. Headings and Captions.** Any paragraph heading or caption contained in this Instrument  
22 shall be for convenience of reference only and shall not affect the construction or interpretation  
23 of any provision of this Instrument.

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

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

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

3  
4 **SPONSOR**

5   
6 \_\_\_\_\_

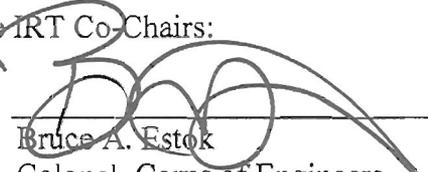
7 Victor Woodward  
8 Manager, Clark County Mitigation Partners  
9

7/7/14  
\_\_\_\_\_

Date

10 **INTERAGENCY REVIEW TEAM**

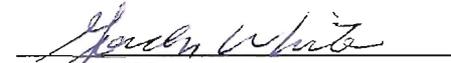
11  
12 By the IRT Co-Chairs:

13   
14 \_\_\_\_\_

15 Bruce A. Estok  
16 Colonel, Corps of Engineers  
17 Seattle District Engineer  
18

3 JUL 2014  
\_\_\_\_\_

Date

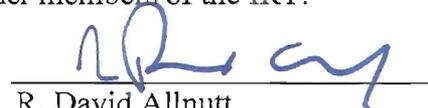
19   
20 \_\_\_\_\_

21 Gordon White  
22 Program Manager for Shorelands and Environmental Assistance Program  
23 Washington State Department of Ecology

7/14/14  
\_\_\_\_\_

Date

24 By other members of the IRT:

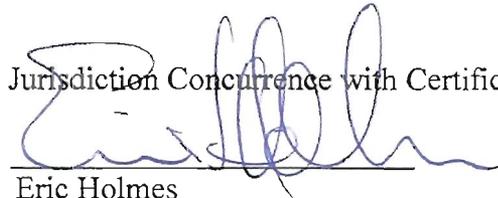
25   
26 \_\_\_\_\_

27 R. David Allnutt  
28 Director  
29 Office of Ecosystems, Tribal & Public Affairs  
30 U.S. Environmental Protection Agency, Region 10  
31

7/22/14  
\_\_\_\_\_

Date

32  
33 Local Jurisdiction Concurrence with Certification:

34   
35 \_\_\_\_\_

36 Eric Holmes  
37 City Manager  
38 City of Vancouver, WA  
39  
40

7.30.14  
\_\_\_\_\_

Date

# **COLUMBIA RIVER WETLAND MITIGATION BANK**

Appendices to the Mitigation Banking Instrument

Clark County Mitigation Partners, LLC  
15600 NE 173<sup>rd</sup> Street  
Woodinville, WA 98072

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## APPENDIX A GENERAL BANK INFORMATION

### APPENDIX A.1:

#### A.1.1. Business Purpose and Ecological Goals of the Bank

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 Port of Vancouver owns the property on which the Columbia River Wetland Mitigation Bank (Bank) site is to be located, and foresees utilizing credits available from the Bank to offset permitted impacts to wetlands resulting from its projects. In addition, credits available from the Columbia River Wetland Mitigation Bank will be available for use by other public and private entities within the service area, subject to approval of the regulatory agencies with jurisdiction over wetlands. Establishing the Columbia River Wetland Mitigation Bank will provide permit applicants greater flexibility in compensating for unavoidable adverse impacts to the aquatic ecosystem.

The primary ecological goals of the Columbia River Wetland Mitigation Bank are as follows:

- Create additional wetland area by excavating a portion of the site.
- Create and enhance a variety of habitat types interspersed throughout the site.
- Control invasive species such as reed canarygrass (*Phalaris arundinacea*), tansy ragwort (*Senecio jacobea*) and Himalayan blackberry (*Rubus procerus*) on site.
- Create and enhance wildlife habitat structure and function of the site.

Relevant documentation supporting the technical information 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 includes the wetland delineation report, wetland function assessment results, vegetation survey, hydrologic monitoring and modeling, and other technical information that was used to establish baseline conditions at the bank and support the design for the site.

#### A.1.2. Bank Location and Legal Description

The Bank is located in a portion of Section 17, and a portion of Section 20, Township 2 North, Range 1 East, Willamette Meridian, City of Vancouver, Clark County, Washington. The property is owned by the Port of Vancouver (**Figure A-1**, Vicinity Map). The site encompasses approximately 155.46 acres (**Figure A-2**, Survey of Bank Boundaries). The legal description of the bank site is provided in Exhibit A at the end of Appendix A. The site is located within Water Resource Inventory Area (WRIA) 28. Clark County maps the Vancouver Lake/Lake River sub-basin within the Salmon Creek Watershed. The site is bounded on the southwest by State Route 501 (Lower River Road). It is bounded to the southeast and northeast by Port-owned property,

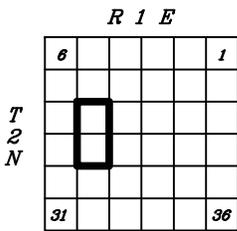
8/7/2013 1:56 PM S:\Clark-WA\County-Projects\1209-Habitat Banc NW\1209.03-Columbia River Wetland Mitigation Bank Site\1209.03-Figures\Master Drawings\1209.03-Vicinity Map.dwg Jennifer

WASHINGTON



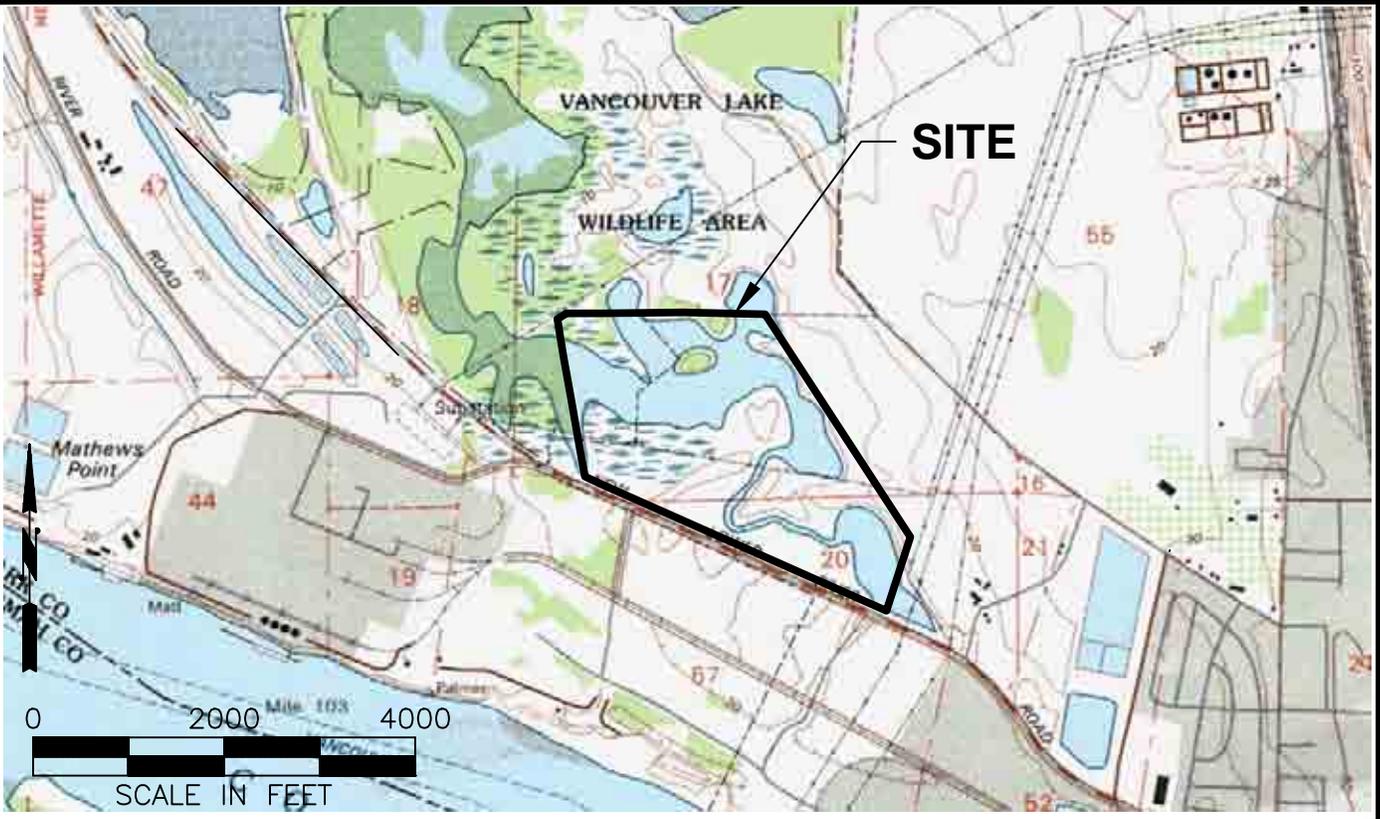
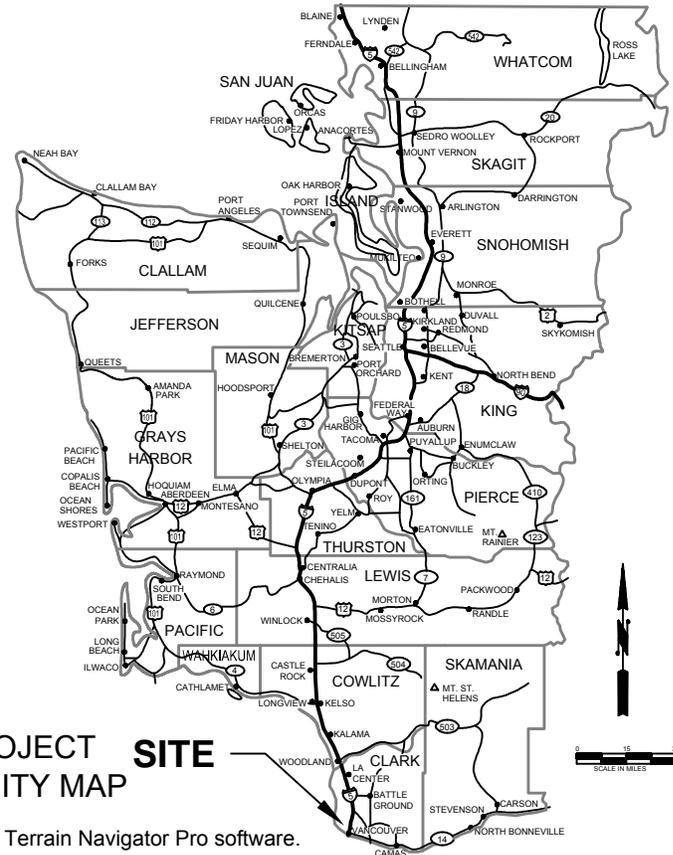
Latitude 45° 39' 4" North  
 Longitude 122° 42' 43" West

LOCATION MAP



PROJECT SITE VICINITY MAP

**NOTE:**  
 USGS topographic quadrangle map reproduced using MAPTECH Inc., Terrain Navigator Pro software.



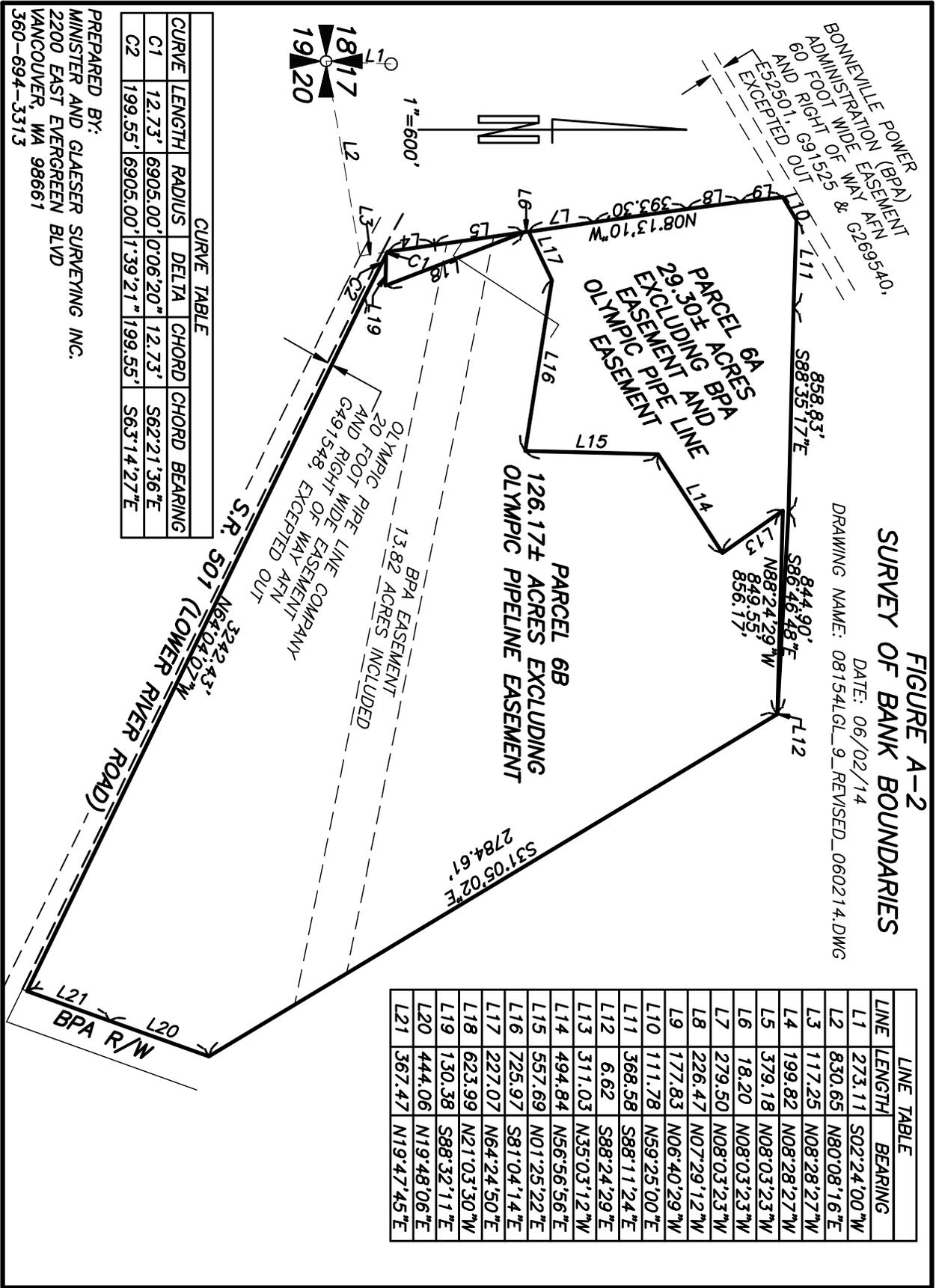
**ECOLOGICAL LAND SERVICES, INC.**  
 1157 3rd Ave., Suite 220 Longview, WA 98632  
 (360) 578-1371 Fax: (360) 414-9305

DATE: 7/26/13  
 DWN: MMM  
 REQ. BY: JT  
 PRJ. MGR: MMM  
 CHK:  
 APPR:  
 PROJ.#: 1209.03

**Figure A-1  
 VICINITY MAP**  
 Columbia River Wetland Mitigation Bank  
 Clark County Mitigation Partners, LLC  
 City of Vancouver, Clark County, Washington  
 Sections 17 & 20, Township 2N, Range 1E, W.M.

# FIGURE A-2 SURVEY OF BANK BOUNDARIES

DATE: 06/02/14  
DRAWING NAME: 08154LGL\_9\_REVISED\_060214.DWG



CURVE TABLE				
CURVE	LENGTH	RADIUS	DELTA	CHORD BEARING
C1	12.73'	6905.00'	0°06'20"	12.73' S62°21'36"E
C2	199.55'	6905.00'	1°39'21"	199.55' S63°14'27"E

LINE TABLE	
LINE	BEARING
L1	S02°24'00"W
L2	N80°08'16"E
L3	N08°28'27"W
L4	N08°28'27"W
L5	N08°03'23"W
L6	N08°03'23"W
L7	N08°03'23"W
L8	N07°29'12"W
L9	N06°40'29"W
L10	N59°25'00"E
L11	S88°11'24"E
L12	S88°24'29"E
L13	N35°03'12"W
L14	N56°56'56"E
L15	N01°25'22"E
L16	S81°04'14"E
L17	N64°24'50"E
L18	N21°03'30"W
L19	S88°32'11"E
L20	N19°48'06"E
L21	N19°47'45"E

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which is zoned light industrial and is scheduled to be developed under separate permit application. The site is bounded to the north and west by the Vancouver Lake Wildlife Area, a Washington Department of Fish and Wildlife property, which lies immediately adjacent to the Bank site. The area between the Bank site and Vancouver Lake is a mix of scrub-shrub, ash forest, and emergent wetland to the lake fringe. The bank site totals 155.46 acres, of which 13.82 acres lie within Bonneville Power Administration (BPA) easements that bisect the Bank from east to west (**Figure A-3**, Existing Conditions). The BPA easement area will be planted to provide habitat connectivity through the site. The Bank Sponsor will manage and maintain the BPA easement to control noxious weeds. Because the BPA area is subject to an easement, by application of IRT policy establishment and management activities in the area are not creditable. Buffer area on the bank site totals 18.23 acres.

A 1.60 acre Port of Vancouver (Port) permittee-responsible mitigation site<sup>1</sup>, located in the southeast corner of the bank site was included in the bank project on October 4, 2012. The area was initially excluded from the Bank because a Port development project required a separate permitting timeline and mitigation implementation before the bank site was approved. The Port mitigation area currently consists of created emergent and forested wetland habitat types that are homogeneous with the rest of the habitat types in the bank project.

Due to high maintenance and monitoring cost of the mitigation site, the Port submitted to Ecology a proposal for an alternative to the traditional continued maintenance and monitoring at the site and requested the ability to purchase bank credits to transfer the responsibility of the mitigation to the bank sponsor.<sup>2</sup> Ecology determined that the mitigation site met the requirements for water quality and hydrologic functions. However, because of repeated flooding, and poor plant establishment, the habitat function requirements were not being met.

The Port was required to purchase 0.29 credits at the Columbia River Wetland Mitigation Bank to compensate for habitat functions. To reach this number Ecology calculated how many credits the Port would have had to purchase to mitigate for the impact using the recommended ratios found in the Bank's MBI. This number was evenly divided among the three different functions the mitigation site was intended to provide (water quality, water quantity, and habitat). Once bank credits were purchased, the mitigation site was released from further monitoring and maintenance requirements by the Port.

This provided the Sponsor the opportunity to include the Port's mitigation area into the Bank site. The Sponsor will implement adaptive management actions to increase habitat functions by removing invasive plant species and re-planting. In addition, the Sponsor will include the area into the monitoring and maintenance schedule. To ensure that mitigation credit was not used twice, Ecology subtracted the amount of mitigation credit already used by the Port to mitigate for water quality and quantity and added the remaining credit to the Bank's credit release schedule. See Appendix D for more information on how the Port's mitigation site was incorporated into the crediting of the bank.

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<sup>1</sup> Refer to Department of Ecology Administrative Order #5091 for more information on the Parcel 8 development project and mitigation site

<sup>2</sup> For more details regarding the Port's proposal for transferring the mitigation site to the bank refer to the *Mitigation Bank Use Plan and Wetland Mitigation Site Closeout Report*, dated July 2012, located in the Resource Folder

Existing Plant Communities	Credible Area (acres)	Area in Setback (acres)	Area in BPA Easement (acres)	Mitigation Bank Site Total (acres)
<b>UPLAND</b>				
Active Floodplain	44.90	13.60	9.25	67.75
<b>WETLAND</b>				
Palustrine Forested Wetland	6.03	0.13	0.03	6.16
Palustrine Scrub-Shrub Wetland	1.91			1.94
Palustrine Emergent Wetland	61.53	3.20	4.54	69.27
Palustrine Aquatic Bed Wetland	9.04	1.30		10.34
Total Existing Wetland	78.51	4.63	4.57	87.71
<b>TOTALS</b>				
Total Bank Site Area	123.41	18.23	13.82	155.46



**LEGEND:**

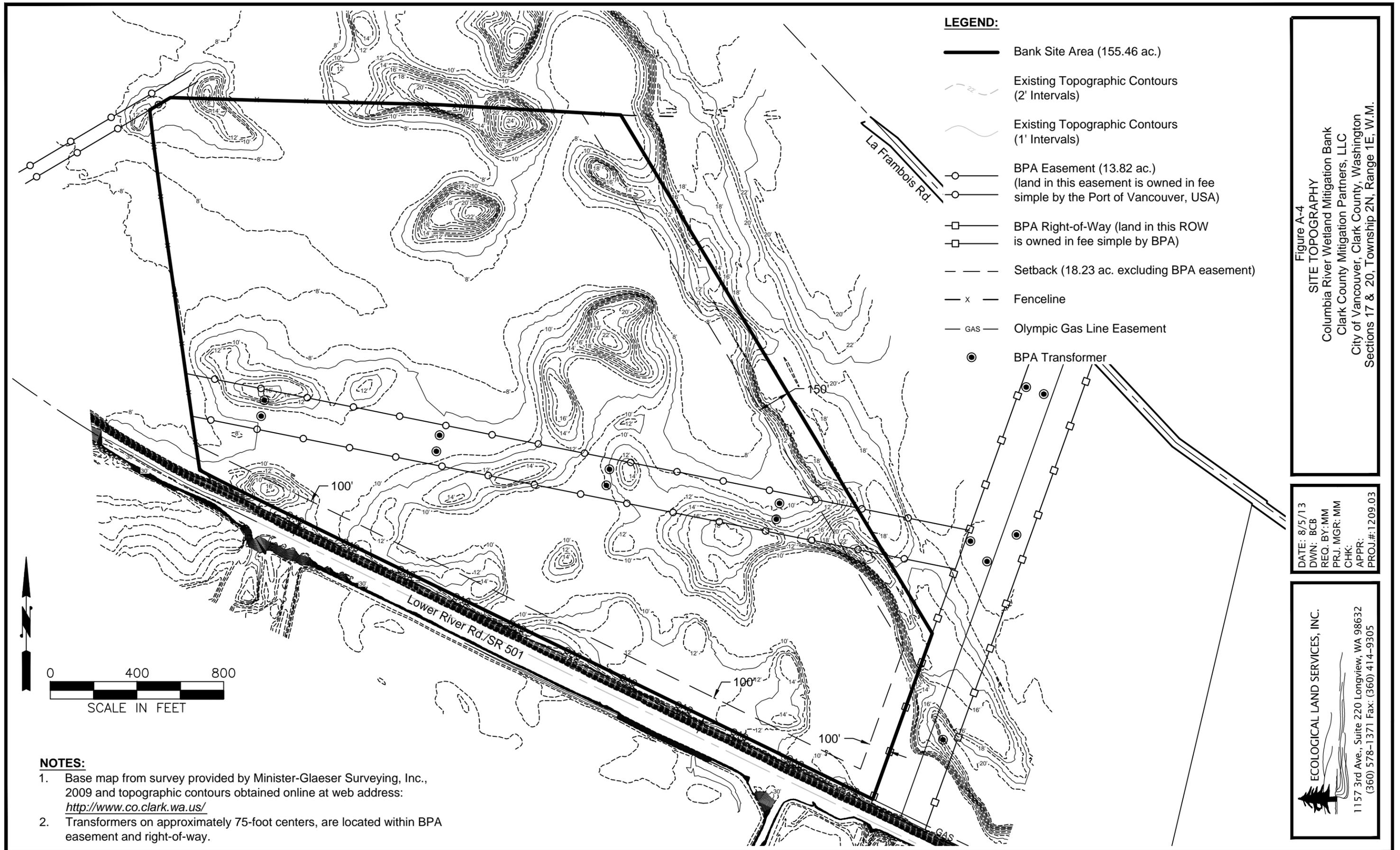
- Bank Site Area (155.46 ac.)
- Active Floodplain (67.75 ac.)
- Palustrine Forested Wetland (6.16 ac.)
- Palustrine Scrub-Shrub Wetland (1.94 ac.)
- Palustrine Emergent Wetland (69.27 ac.)
- Palustrine Aquatic Bed Wetland (Seasonal) (6.03 ac.)
- Palustrine Aquatic Bed Wetland (Permanent) (4.31 ac.)
- Setback (18.23 ac. excluding BPA easement)
- BPA Easement (13.82 ac.) (land in this easement is owned in fee simple by the Port of Vancouver, USA)
- BPA Right-of-Way (land in this ROW is owned in fee simple by BPA)
- Fenceline
- Delineated Wetland Boundary
- Olympic Gas Line Easement

- NOTES:**
1. Base map from Minister-Glaeser Surveying, Inc., 2009.
  2. 2005 aerial photographs from Clark County GIS Department, 2005.
  3. The wetland delineation was conducted by JD White, August, 2006.
  4. The wetland boundaries received a jurisdictional determination from the U.S. Army Corps of Engineers, September, 2007.
  5. Transformers on approximately 75-foot centers, are located within BPA easement and right-of-way.

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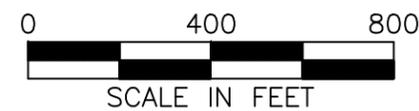
DATE: 7/26/13  
 DWN: BCB  
 REQ. BY: MM  
 PRJ. MGR: MM  
 CHK: MMM  
 APPR:  
 PROJ.#: 1209.03

**Figure A-3**  
**EXISTING CONDITIONS**  
 Columbia River Wetland Mitigation Bank  
 Clark County Mitigation Partners, LLC  
 City of Vancouver, Clark County, Washington  
 Sections 17 & 20, Township 2N, Range 1E, W.M.



**LEGEND:**

- Bank Site Area (155.46 ac.)
- Existing Topographic Contours (2' Intervals)
- Existing Topographic Contours (1' Intervals)
- BPA Easement (13.82 ac.)  
(land in this easement is owned in fee simple by the Port of Vancouver, USA)
- BPA Right-of-Way (land in this ROW is owned in fee simple by BPA)
- Setback (18.23 ac. excluding BPA easement)
- Fenceline
- Olympic Gas Line Easement
- BPA Transformer



- NOTES:**
1. Base map from survey provided by Minister-Glaeser Surveying, Inc., 2009 and topographic contours obtained online at web address: <http://www.co.clark.wa.us/>
  2. Transformers on approximately 75-foot centers, are located within BPA easement and right-of-way.

Figure A-4  
**SITE TOPOGRAPHY**  
 Columbia River Wetland Mitigation Bank  
 Clark County Mitigation Partners, LLC  
 City of Vancouver, Clark County, Washington  
 Sections 17 & 20, Township 2N, Range 1E, W.M.

DATE: 8/5/13  
 DWN: BCB  
 REQ. BY: MM  
 PRJ. MGR: MM  
 CHK:  
 APPR:  
 PROJ.#: 1209.03

**ECOLOGICAL LAND SERVICES, INC.**  
  
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All real property to be included within the Bank site, as more completely described in the legal description attached as **Exhibit A** to this Instrument, is owned in fee simple by the Port of Vancouver, and has been pledged for use in the Bank in a manner consistent with this Instrument. The inclusion of the aforementioned property in the Bank and the granting of a conservation easement restricting future land uses for the benefit of the Bank shall not convey or establish any property interest on the part of any party to this Instrument, nor convey or establish any interest in Bank credits. The Instrument does not authorize, nor shall it be construed to permit, the establishment of any lien, encumbrance, or other claim with respect to the property, with the sole exception of the right on the part of the Corps and Ecology to require the Sponsor to implement elements of this Instrument, including recording the conservation easement.

### **A.1.3. Site Description and Baseline Conditions**

#### **A.1.3.1 Site Description**

A wetland delineation report was prepared by the J.D. White Company for the Port of Vancouver. The original report was prepared during August of 2005. The report was amended in August 2006. The report addresses three parcels owned by the Port of Vancouver, (Parcels 6, 7, and 8). The Columbia River Wetland Mitigation Bank is located on Parcel 6. A jurisdictional determination of wetland area on Parcel 6 was completed on May 25, 2007. Final confirmation of the jurisdictional determination was mailed out on September 13, 2007, and is included in **Attachment 1** of the project Resource Folder, along with a copy of the final delineation report.

The wetland delineation report describes the following conditions on site:

*“The study area is located on rolling terrain...the parcels are bisected by a [Bonneville Power Administration] power line easement. Elevations at the site range between approximately 18 feet to less than 10 feet. [See Figure A-4, Site Topography]. The western portion of the study area [Columbia River Wetland Mitigation Bank area] is contiguous with the Vancouver Wildlife Area. The wildlife area forms the northwestern boundary of the study area. The wildlife area lies immediately south of Vancouver Lake, and is owned by the Washington Department of Fish and Wildlife (WDFW). The study area is open pastureland with scattered islands of trees. The pastureland is actively used for cattle grazing.” (J.D. White, 2006).*

The area to the northeast of the Columbia River Wetland Mitigation Bank site is currently cultivated in raspberries. An abandoned single-family residence and farm buildings associated with a former dairy operation remain on Parcel 7, to the east of the proposed Bank site. The Port of Vancouver is in the process of permitting development of these adjacent lands for industrial uses related to Port development. Dugan Regional Park (Vancouver-Clark Parks & Recreation property) is located immediately north of the northeastern portion of the study area and La Frambois Road.

Most of the site is palustrine emergent wetland 69.27 acres, with approximately 10.34 acres of palustrine aquatic bed, approximately 1.94 acres total of existing scrub-shrub, and approximately 6.16 acres of palustrine forested wetland area. (**Figure A-3**).

The hydrogeomorphic classification is not straightforward given the land use changes in the surrounding area, which have resulted in rip-rap and fill along the Columbia River (cutting the site off from over bank flow), construction of a flushing channel to ameliorate water quality conditions in Vancouver Lake, and groundwater influences on site. Despite these changes, the site is likely predominantly influenced both by the Columbia River, as well as by Vancouver Lake hydrology, in addition to groundwater levels. The Columbia River in this region is tidally influenced. The site most closely meets the definition of depressional outflow, though it has characteristics of other hydrogeomorphic classes as well, including lacustrine fringe, as well as riverine in that site hydrology is primarily driven by Columbia River flows.

The site is designated an Urban Conservancy Shoreline Environment by the City of Vancouver's Shoreline Management Master Program. Shoreline designation and mapping is included as **Attachment 2** in the Resource Folder.

### **A.1.3.2 Baseline Conditions**

Baseline conditions for the Columbia River Mitigation Bank include pre project conditions for the entire bank property, including the 1.60 acre Port of Vancouver mitigation site that was originally excluded from the bank project but then included on October 4, 2012. Technical documentation of baseline conditions including the bank's wetland delineation report, wetland functional assessment and other observations about habitat viability and functionality included the Port's mitigation area.

The J.D. White delineation report lists the primary source of hydrology on site as being seasonal flooding from Vancouver Lake, groundwater, direct precipitation, and run-off from SR 501.

Soils on site are mapped by the NRCS as McBee silt loam, Sauvie silty clay loam, and Sauvie silt loam. Soils maps are included in the wetland delineation report in **Attachment 1** of the Resource Folder.

Vegetation on site is typical of disturbed pasture areas and is described in the J.D. White report as follows:

*“Most of the study area is dominated by non-native and weedy species common to disturbed areas.....The pastureland [which comprises the Columbia River Wetland Mitigation Bank site] is a network of interconnected seasonally wet areas interspersed with slightly higher upland knolls. The vegetation was heavily trampled and grazed by cattle, and, after the field visits, the upland areas were mowed to help control weeds. The upland areas are dominated by Himalayan blackberry [Rubus discolor, FACU] and herbaceous species including tansy ragwort (Senecio jacobaea, FACU), creeping thistle (Cirsium arvense, FACU+), bull thistle (Cirsium vulgare, FACU), white clover (Trifolium repens, FAC), reed canarygrass (Phalaris arundinacea, FACW), brome six-weeks grass (Vulpia bromoides, NI), and red fescue (Festuca rubra, FAC+), lady's thumb (Polygonum persicaria, FACW), and English plantain (Plantago lanceolata, FAC). California blackberry (Rubus ursinus, FACU) is a dominant upland species in the southwest corner of the site. Other common upland species include teasel (Dipsacus sylvestris, FAC) and mayweed (Anthemis cotula, FACU)....*

*Most of the seasonally wet areas in the western bottomland are dominated by reed canarygrass, marshpepper smartweed (*Polygonum hydropiper*, OBL), creeping Jennie (*Lysimachia nummularia*, FACW), soft rush (*Juncus effusus*, FACW), white clover (*Trifolium repens*, FAC), thick-headed sedge (*Carex pachystachya*, FAC), toad rush (*Juncus bufonius*, FACW), spotted cat's ear (*Hypochaeris radicata*, FACU), California blackberry, bull thistle, quackgrass (*Agropyron repens*, FAC-), swamp smartweed (*Polygonum hydropiperoides*, OBL), and meadow foxtail (*Alopecurus pratensis*, FACW).*

*The saturated zones around the edges of the two inundated depressional areas along the eastern edge of the western bottomland are dominated by reed canarygrass, lady's thumb, marshpepper smartweed (*Polygonum hydropiper*, OBL) joint paspalum (*Paspalum distichum*, OBL) spreading bentgrass (*Agrostis stolonifera*, FAC) creeping spikerush (*Eleocharis palustris*, OBL) and creeping Jennie. Slender rush (*Juncus tenuis*, FACW-) is a dominant in seasonally very wet areas in the southwest corner of the site in association with silverweed (*Potentilla anserina*, OBL).*

*The forested areas located in the northwestern portion of the property are dominated by Oregon ash (*Fraxinus latifolia*, FACW) and black cottonwood (*Populus balsamifera* [*P.trichocarpa*], FAC). These forested areas are contiguous with extensive forested and scrub-shrub wetlands northwest of the study area boundary. Oregon ash is located in small patches near the center of the site in association with Scouler's willow (*Salix scouleriana*, FAC). River willow (*Salix fluviatilis*, OBL) dominates the SR 501 fill slope along the southern edge of the study area.” (J.D. White, 2006).*

A wetland function assessment in accordance with the Washington State Method for Assessing Wetland Functions (WAFAM): Volumes I and II (Hruby et al, 1999) was performed and is included in the Resource Folder as **Attachment 3**. The following description is excerpted from the WAFAM report. Table A-1 summarizes functional values and opportunity currently existing on the Bank site and anticipated changes post-bank construction.

The area of the contributing basin is approximately 5,157 acres (2,087 hectares). A sub-watershed of the Columbia River Hydrogeomorphic Unit was used to calculate the area of the contributing basin. The Columbia River Hydrogeomorphic unit encompasses the proposed Columbia River Wetland Mitigation Bank Site and spans approximately 18,441 acres (7,463 hectares). The areal calculations were derived from Clark County GIS data.

**Table A-1. Function assessment summary.**

Function		Depressional Outflow Wetland		
		Index Potential <sup>1</sup>	Existing Opportunity	Anticipated Change in Function Post-Bank Construction
Water Quality	Sediment Removal	5	Moderately High	Increase
	Nutrient Removal	4	Moderately High	Increase
	Metals & Toxic Organics Removal	5	Moderately High	Increase
Water Quantity	Peak Flow Reduction	4	Moderate	Increase
	Downstream Erosion Reduction	5	Moderate	Increase
	Groundwater Recharge <sup>2</sup>	3	High	Increase
Habitat	General Habitat Suitability	7	Moderate	Increase
	Invertebrate Habitat	7	Moderate	Increase
	Amphibian Habitat	5	Moderate	Increase
	Anadromous Fish Habitat	4	--	--
	Resident Fish Habitat	5	--	--
	Wetland-Associated Bird Habitat	7	Moderate	Decrease <sup>3</sup>
	Wetland-Associated Mammal Habitat	4	Moderate	Increase
	Native Plant Richness	7	Moderate	Increase
	Primary Production and Export	8	High	Increase

<sup>1</sup> Index ranges from 1 (low) to 10 (high).

<sup>2</sup> Assumed high for all western Washington wetlands (Hruby *et al.* 1999).

<sup>3</sup> Please see discussion under Anticipated Functional Lift – Habitat Related Functions.

### Water Quality

The Assessment Unit (AU) has moderately high opportunities for removing sediments, nutrients, heavy metals, and toxic organics. The upstream watershed is largely undeveloped, and thus limits the potential for sediments, nutrients, metals, and toxins to enter into the AU. The potential for nutrient and sediment removal is slightly higher for the on-site AU because of the active grazing and largely emergent vegetative cover within and in its immediate vicinity.

## **Water Quantity**

The AU has a moderate opportunity for reducing peak flows because the majority of the upstream watershed is undeveloped and currently tempers peak flows. Likewise, the AU has a moderate opportunity for decreasing downstream erosion because development and sources of erosion comprise a small portion of the upstream watershed. All wetlands in western Washington are assumed to have a link to ground water and, therefore, have a high potential for recharging ground water (Hruby *et al.* 1999). In this case, the large size of the AU is likely to provide substantial ground water recharge.

## **Habitat**

The overall habitat suitability for fauna in the AU is moderate. The Bank site scores higher for bird habitat than for mammal habitat because of its proximity to Vancouver Lake and because large portions of seasonally flooded areas occur within the AU. No streams are present and anadromous fish habitat is non-existent. The AU abuts Vancouver Lake and has a vegetated corridor connecting with undeveloped areas to the northwest along the shores of the lake. Intensively-farmed raspberry fields and Lower River Road limit wildlife movement to the east and south, respectively. Overall, the AU has five different vegetation strata ranging from aquatic bed to forested classes. Habitat suitability, however, is more limited within the on-site AU due to the extensively degraded emergent wetland, active grazing, lack of habitat features such as downed logs or snags, and highly disturbed surrounding buffers. Most of the emergent areas on-site are dominated by non-native grasses and forbs, possibly introduced to the site through hay for cattle. The scattered on-site forested areas are a monoculture of approximately 10-year-old black cottonwood, with almost no understory due to the dense canopy. The scrub-shrub areas are typically widely spaced willows with an emergent understory of reed canarygrass.

Wildlife habitat appears to be higher quality off-site to the north and west, because of more diverse strata and species, greater interspersion among strata, less disturbance from grazing, and proximity to Vancouver Lake. The off-site area to the north and west is also within the Vancouver Lake Wildlife Area.

Approximately 50 percent of the buffers surrounding the AU are disturbed by agricultural and industrial land uses; the remaining buffers are undisturbed. The disturbances within the buffers are concentrated around the on-site AU.

In summary, the Bank site performs at a moderate level for sediment trapping and nutrient removal. Its landscape position in the Vancouver Lowlands results in its high groundwater recharge potential. Existing habitat is moderate for invertebrates and amphibians, not present for anadromous fish, and moderate for bird and mammal habitat due to lack of existing habitat structure and degradation associated with active cattle grazing on site. However, the potential for these functions post Bank construction is relatively high.

## **Anticipated Functional Lift**

### **Water Quality-related functions**

As a result of implementing the Bank, the vegetative roughness on the site will increase significantly over existing conditions. Functions related to water quality, such as sediment removal, nutrient removal, and removing toxics and organics can therefore be anticipated to

increase post construction, both because of increased vegetated species roughness and structure, and because of the additional vegetated wetland area added that will be flooded and remain aerobic. These types of areas are thought to contribute to the removal of toxic organic compounds (*Hruby et al*, 1999).

Excavating to create 27.10 acres of new wetland area will increase floodwater storage available on site, and will therefore contribute to reducing peak flows within the immediate vicinity of the Bank. The Bank site is a part of the Vancouver Lake Lowlands, and as such is in a landscape position to receive and retain floodwaters from the Vancouver Lake sub-basin and the Lake River sub-basin before the waters draw down and exit to Vancouver Lake, Lake River and the Columbia River. As Vancouver Lake fills, it backwaters into the Bank site. Sediments in floodwaters may settle out and be absorbed by emergent vegetation on site (see water-quality function discussion above). The Bank will also provide additional peak flow storage, but since the floodwaters entering the site are backwater from Vancouver Lake, as well as hyporheic flow from the Columbia River, construction of the Bank site is not likely to decrease downstream erosion.

The Bank site's hydrology is directly correlated to Columbia River flows. As such, it contributes to, and is directly affected by maintaining seasonal flow associated with the Columbia River. Excavation to create new wetland area will increase the site's capacity to store surface water, and may therefore provide additional baseflow support, as well as contribute to groundwater recharge.

### **Habitat Related Functions**

In general, because of the increase in vegetative structure and function, and the increase in habitat interspersion, functions associated with general habitat will increase on site as a result of Bank establishment.

The WAFAM uses guilds of wetland dependent birds as the basis for building the assessment model for the Wetland-dependent Birds function (*Hruby et al*, 1999). Those guilds include waterfowl, shorebirds, and herons. These guilds forage in wetland habitats, dominated by grassy areas, and open water, such as currently exists at the site, and in the general vicinity. The model includes a 'reducer' for canopy closure, and therefore, because the primary action being taken at this site is planting, the model for Wetland-dependent birds is likely to record a decrease in this habitat function over time, as the trees on site mature, and establish a higher level of canopy closure than currently exists on site.

Though sandhill cranes (*Grus canadensis*) do not nest in the site vicinity, there is a great blue heron (*Ardea herodias*) rookery on site within the mature cottonwood trees on the northern portion of the site. Sandhill cranes breed in open marshes or bogs, and in wet grasslands and meadows and feed in marshes and grain fields. Herons require mature trees, often cottonwoods, in which to establish rookeries. Though Sandhill cranes do not nest in the vicinity, they do forage in marshes and grain fields in the general area, but according to Brian Caulkins, Washington Department of Fish and Wildlife (WDFW) Manager of Shillapoo and Vancouver Lake Wildlife Areas, they do not appear to use the area south of Vancouver Lake for the majority of their foraging. (Brian Caulkins, personal communication 10/27/08). As a result the decrease in open

habitat is not expected to adversely affect foraging for Sandhill cranes in the vicinity. Mr. Caulkins also stated that the planting of the site with cottonwoods is anticipated to be of benefit to the herons because eventually the trees planted on site will be able to be used for additional nesting areas. In addition, herons are sensitive to noise and light intrusion, and the planting will protect them from these stressors. Finally, the increase in wetland area resulting from the bank site will increase forage area for the herons, and cover and structure for habitat generally.

Open rolling grassy areas interspersed with open water will decrease on site as a result of the proposed Bank site design, which is anticipated to restore the site to a riparian forested floodplain wetland over time. The existing grazed fields will gradually convert to a forested scrub-shrub wetland complex, interspersed with the existing emergent and aquatic bed habitats on site. The aquatic bed habitat is to remain on the bank site, and 27.10 additional acres of wetland area are to be created. Approximately 89.11 acres of the site will be planted to a mix of shrub and forested wetland interspersed with existing emergent wetland, and the existing 31.40 acres of upland area will be planted to forest. It is anticipated that within 50 to 80 years the site will be a cottonwood forest typical of historic conditions within the Columbia River floodplain.

The Bank site is immediately adjacent to the Vancouver Lake Wildlife Area, and Shillapoo Wildlife Refuge and the Ridgefield National Wildlife Refuge are in the vicinity of the site. The area between Ridgefield National Wildlife Refuge and Shillapoo includes approximately 1550 acres of pasture/grassland, forest, riparian areas and wetlands in the Vancouver Lake Lowlands. In total over 12,000 acres of publicly owned land is within the Vancouver Lake Lowlands. According to the WDFW, ‘The primary wildlife communities using these areas are water or wetland-related species. Waterfowl are abundant and diverse, as are shorebirds and marsh birds. The interspersed grasslands and emergent wetland vegetation provides good nesting and brood-rearing habitat for waterfowl and other ground-nesting species’ ([www.wdfw.wa.gov/lands/r5shill.htm](http://www.wdfw.wa.gov/lands/r5shill.htm)). In addition to the areas at Shillapoo and Vancouver Lake Wildlife areas, the Port of Vancouver manages 543 acres in the vicinity of the Bank site for Sandhill crane habitat. Though they are a state-listed endangered species, Sandhill cranes are known to use the area during winter migrations, and prefer the open grassy areas and grain fields for foraging (list of state and federal threatened and endangered species, see <http://www.nmfs.noaa.gov/pr/laws/esa> and <http://wdfw.wa.gov/wlm/diversty/soc/concern>, see also [Vanlake\\_fedstatespecies.pdf](#) posted on the Vancouver Lake Watershed Partnership website). Areas immediately surrounding the Bank site are intensively managed as waterfowl and Sandhill crane habitat. Conversion of areas of open habitat on the Bank site to later successional stages will mimic natural ecological processes, and is not anticipated to significantly adversely impact waterfowl, shorebird, heron, and crane populations in the area because of the proximity of lands managed to favor habitat for these guilds in the immediate vicinity of the bank site.

The forested riparian floodplain which is anticipated to establish at the bank site is the type of habitat that was likely present historically on the Bank site, and is favored by passerine bird species, which are in decline nationally (see [Common Birds In Decline at www.audubon.org](http://www.audubon.org)). In addition to increasing habitat for passerine bird species on site, the Bank site will install Purple Martin (*Progne subis*) nest boxes to encourage the use of the site by this bird species throughout the active life of the Bank. Habitat for furbearing mammals that use the area such as beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), river otter (*Lutra canadensis*), and mink (*Mustela vison*), is anticipated to increase as a result of Bank implementation because of the

increase in cover (planted vegetation) and seasonal ponded water. Re-vegetating the site to a riparian forest will establish potential future nesting sites for herons, and contiguous habitat corridors for mammals from the Bank site to adjacent habitats to the north and west of the site.

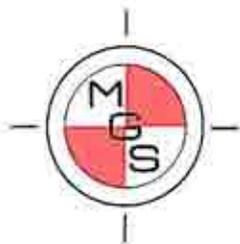
Overall general habitat suitability at the Bank site is anticipated to increase as a result of Bank establishment, which will result in more wetlands on site, a much higher degree of wetland structure, habitat interspersion, and native species richness, and higher function than existing conditions. Implementing the Bank will also remove existing stressors on wetland function – the grazing cattle will be removed, and the site will be managed much more intensively to remove existing invasive species, and to favor native plant establishment.

A botanical survey for the Bank site was completed during June and July of 2007, and is in the Resource Folder as **Attachment 4**.

### **References**

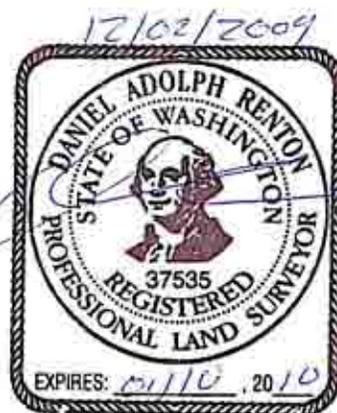
Hruby, T., T. Granger, K. Brunner, S. Cooke, K. Dublanica, R. Gersib, L. Reinelt, K. Richter, D. Sheldon, E. Teachout, A. Wald, and F. Weinmann. July 1999. Methods for Assessing Wetland Functions. Volume I: Riverine and Depressional Wetlands in the Lowlands of Western Washington. Washington State Department of Ecology Publications #99-115 and #99-116. Olympia, Washington.

# EXHIBIT A



**MINISTER-GLAESER**  
**SURVEYING INC.**

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DECEMBER 2, 2009

**EXHIBIT "A-1"**

**PARCEL 6A**

**NORTHERLY PORTION**

A parcel of land located in the Francis La Frambois Donation Land Claim and in a portion of the Southwest Quarter of Section 17, Township 1 North, Range 2 East, Willamette Meridian, Clark County, Washington, more particularly describe as follows:

**COMMENCING** at the Southwest corner of said Section 17, from which a 1-1/2" iron pipe (as shown on that survey recorded in Book 29 of Surveys at Page 161, records of said county, said 1-1/2" iron pipe has subsequently been destroyed) bears North 02°24'00" East, for a distance of 273.11 feet;

Thence North 80°08'16" East, for a distance of 830.65 feet to the intersection of the centerline of State Route 501 with the Southerly extension of the West line of a Parcel of Land described in Exhibit "A" of the **"Superior Court of Washington For Clark County, Judgment Number 04-2-03753-4, Stipulation and Agreed Order Quieting Title and Dismissing Suit"** and recorded under Auditors File Number 4510180 Order, records of said county;

Thence North 08°28'27" West, along the Southerly extension of said West line, for a distance of 92.50 feet to the Northerly Right of Way line of said State Route 501;

Thence leaving said Northerly Right of Way line and continuing along said West line, North 08°28'27" West, for a distance of 224.58 feet;

Thence continuing along said West line, North 08°03'23" West, for a distance of 397.38 feet to the **TRUE POINT OF BEGINNING**;

Thence continuing along said West line the following courses and distances;

North 08°03'23" West, 279.50 feet;

North 08°13'10" West, 393.30 feet;

North 07°29'12" West, 226.47 feet;

Thence continuing along said West line, North 06°40'29" West, for a distance of 238.38 feet to the Northwest corner of said Parcel of Land described in Exhibit "A" of the **"Superior Court of Washington For Clark County, Judgment Number 04-2-03753-4, Stipulation and Agreed Order Quieting Title and Dismissing Suit"** and recorded under Auditors File Number 4510180 Order, records of said county;

Thence leaving said West line, South 88°11'24" East, along the North line of said Parcel of Land described in Exhibit "A" of the **"Superior Court of Washington For Clark County, Judgment Number 04-2-03753-4, Stipulation and Agreed Order Quieting Title and Dismissing Suit"** and recorded under Auditors File Number 4510180 Order, records of said county, for a distance of 471.90 feet;

Thence continuing along said North line, South 88°35'17" East, for a distance of 858.83 feet;

Thence continuing along said North line, South 86°46'48" East, for a distance of 844.90 feet to the line labeled "9" as shown in the **"Washington Department of Wildlife Survey"** recorded in Book 30 of Survey, at Page 28, records of said county;

Thence leaving said North line, North 88°24'29" West, along said line "9", for a distance of 849.55 feet to a 1-1/8 inch iron pipe with an aluminum cap stamped **"Wildlife Dept"**;

Thence leaving said line "9", South 35°03'12" East, along line labeled "8" as shown in said **"Washington Department of Wildlife Survey"**, for a distance of 311.03 feet to a bent 1-1/4 inch iron pipe;

Thence leaving said line "8", South 56°56'56" West, along line labeled "7" as shown in said "**Washington Department of Wildlife Survey**", for a distance of 494.84 feet to a 1-1/4 inch iron pipe;

Thence leaving said line "7", South 01°25'22" West, along line labeled "6" as shown in said "**Washington Department of Wildlife Survey**", for a distance of 557.69 feet to a bent 1-1/4 inch iron pipe;

Thence leaving said line "6", North 81°04'14" West, along line labeled "5" as shown in said "**Washington Department of Wildlife Survey**", for a distance of 725.97 feet to a bent 1-1/4 inch iron pipe;

Thence leaving said line "5", South 64°24'50" West, along line labeled "4" as shown in said "**Washington Department of Wildlife Survey**", for a distance of 227.07 feet to said West line of a Parcel of Land described in Exhibit "A" of the "**Superior Court of Washington For Clark County, Judgment Number 04-2-03753-4, Stipulation and Agreed Order Quieting Title and Dismissing Suit**" and recorded under Auditors File Number 4510180 Order, records of said county, said point being the **TRUE POINT OF BEGINNING**;

Together with and subject to easements, reservations, covenants and restrictions apparent or of record.

**EXCEPTING THE AREA DESCRIBED BY THE FOLLOWING EASEMENTS:**

1. **Auditors File Number:** E52501  
**Grantor:** John Henry Huber, Jr. and Hilda Huber  
**Grantee:** United States of America  
**Date:** August 26, 1941
2. **Auditors File Number:** G91525  
**Grantor:** Aluminum Company of America  
**Grantee:** United States of America  
**Date:** December 6, 1951
3. **Auditors File Number:** G269540  
**Grantor:** State of Washington, Department of Natural Resources  
**Grantee:** United States of America, Department of the Interior, acting by and through the Bonneville Power Administration  
**Date:** August 25, 1959

## SOUTHERLY PORTION

A parcel of land located in the Francis La Frambois Donation Land Claim and in a portion of the Southwest Quarter of Section 17, Township 1 North, Range 2 East, Willamette Meridian, Clark County, Washington, more particularly describe as follows:

**COMMENCING** at the Southwest corner of said Section 17, from which a 1-1/2" iron pipe (as shown on that survey recorded in Book 29 of Surveys at Page 161, records of said county, said 1-1/2" iron pipe has subsequently been destroyed) bears North 02°24'00" East, for a distance of 273.11 feet;

Thence North 80°08'16" East, for a distance of 830.65 feet to the intersection of the centerline of State Route 501 with the Southerly extension of the West line of a Parcel of Land described in Exhibit "A" of the **"Superior Court of Washington For Clark County, Judgment Number 04-2-03753-4, Stipulation and Agreed Order Quieting Title and Dismissing Suit"** and recorded under Auditors File Number 4510180 Order, records of said county;

Thence North 08°28'27" West, along the Southerly extension of said West line, for a distance of 92.50 feet to the Northerly Right of Way line of said State Route 501;

Thence leaving said Northerly Right of Way line and continuing along said West line, North 08°28'27" West, for a distance of 19.05 feet to the intersection of said West line and the line labeled "25" as shown in the **"Washington Department of Wildlife Survey"** recorded in Book 30 of Survey, at Page 28, records of said county, said point being the **TRUE POINT OF BEGINNING**;

Thence continuing along said West line, North 08°28'27" West, for a distance of 205.53;

Thence continuing along said West line, North 08°03'23" West, for a distance of 379.18 feet to the intersection of said West line and the line labeled "3" as shown said **"Washington Department of Wildlife Survey"**;

Thence leaving said West line, South 21°03'30" East, for a distance of 623.99 feet to a bent 1-1/4 inch iron pipe at the East end of said line "25"

Thence leaving said line "3", North 88°32'11" West, along said line "25", for a distance of 140.83 feet to said West line of a Parcel of Land described in Exhibit "A" of the **"Superior Court of Washington For Clark County, Judgment Number 04-2-03753-4, Stipulation and Agreed Order Quieting Title and Dismissing Suit"** and recorded under Auditors File Number 4510180 Order, records of said county, said point being the **TRUE POINT OF BEGINNING**;

Together with and subject to easements, reservations, covenants and restrictions apparent or of record.

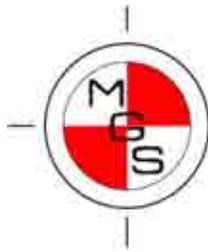
**EXCEPT THE FOLLOWING EASEMENT:**

1. **Auditors File Number:** G491548  
**Grantor:** Elmer Rufener and Wife, Marie Rufener  
**Grantee:** Olympic Pipeline Company  
**Date:** June 19, 1967

**TOTAL AREA PARCEL 6A AFTER THE EXCEPTIONS:**

29.30 acres, more or less

**BASIS OF BEARING:** NAD 83/91, Washington State Plane Coordinate System, South Zone, US-Feet. Divide Grid Distances by a Combined Scale Factor of 1.00004917 to obtain Ground Distances.



**MINISTER-GLAESER  
SURVEYING INC.**

*Vancouver Office - 3200 E. Evergreen Blvd., Vancouver, Washington 98661  
(360) 694-3213 (360) 694-8410 FAX  
Pasco Office - 6302 Burden Blvd. Suite E, Pasco, Washington 99301  
(509) 544-7802 (509) 544-7862 FAX*

**JUNE 2, 2014**

**EXHIBIT "A-2"**

**PARCEL 6B**

A parcel of land located in the Francis La Frambois Donation Land Claim and in a portion of the Southwest Quarter and Southeast Quarter of Section 17 and in a portion of the Northwest Quarter and Northeast Quarter of Section 20, Township 1 North, Range 2 East, Willamette Meridian, Clark County, Washington, more particularly describe as follows:

**COMMENCING** at the Southwest corner of said Section 17, from which a 1-1/2" iron pipe (as shown on that survey recorded in Book 29 of Surveys at Page 161, records of said county, said 1-1/2" iron pipe has subsequently been destroyed) bears North 02°24'00" East, for a distance of 273.11 feet;

Thence North 80°08'16" East, for a distance of 830.65 feet to the intersection of the centerline of State Route 501 with the Southerly extension of the West line of a Parcel of Land described in Exhibit "A" of the **"Superior Court of Washington For Clark County, Judgment Number 04-2-03753-4, Stipulation and Agreed Order Quieting Title and Dismissing Suit"** and recorded under Auditors File Number 4510180 Order, records of said county;

Thence North 08°28'27" West, along the Southerly extension of said West line, for a distance of 92.50 feet to the Northerly Right of Way line of said State Route 501 and the **TRUE POINT OF BEGINNING**;

Thence leaving said Northerly Right of Way line and continuing along said West line, North 08°28'27" West, for a distance of 19.05 feet to the intersection of said West line and the line labeled **"25"** as shown in the **"Washington Department of Wildlife Survey"** recorded in Book 30 of Survey, at Page 28, records of said county;

Thence leaving said West line, South 88°32'11" East, along said line **"25"**, for a distance of 140.83 feet to a bent 1-1/4 inch iron pipe;

Thence leaving said line “**25**”, North 21°03'30" West, along the line labeled “**3**” as shown in said “**Washington Department of Wildlife Survey**”, for a distance of 623.99 feet to said West line;

Thence leaving said line “**3**”, North 08°03'23" West, along said West line, for a distance of 18.20 feet to the intersection of said West line and the line labeled “**4**” as shown in said “**Washington Department of Wildlife Survey**”;

Thence leaving said West line, North 64°24'50" East, along said line “**4**”, for a distance of 227.07 feet to a bent 1-1/4 inch iron pipe;

Thence leaving said line “**4**”, South 81°04'14" East, along the line labeled “**5**” as shown in said “**Washington Department of Wildlife Survey**”, for a distance of 725.97 feet to a bent 1-1/4 inch iron pipe;

Thence leaving said line “**5**”, North 01°25'22" East, along the line labeled “**6**” as shown in said “**Washington Department of Wildlife Survey**”, for a distance of 557.69 feet to a 1-1/4 inch iron pipe;

Thence leaving said line “**6**”, North 56°56'56" East, along the line labeled “**7**” as shown in said “**Washington Department of Wildlife Survey**”, for a distance of 494.84 feet to a bent 1-1/4 inch iron pipe;

Thence leaving said line “**7**”, North 35°03'12" West, along the line labeled “**8**” as shown in said “**Washington Department of Wildlife Survey**”, for a distance of 311.03 feet to a 1-1/8 inch iron pipe with an aluminum cap stamped “**Wildlife Dept**”;

Thence leaving said line “**8**”, South 88°24'29" East, along the line labeled “**9**” as shown in said “**Washington Department of Wildlife Survey**”, for a distance of 856.17 feet;

Thence leaving said line “**9**”, South 31°05'02" East, for a distance of 2784.61 feet to the Bonneville Power Administration (BPA) Westerly Right of Way Line (Fee Ownership) as recorded on February 9<sup>th</sup>, 1939 in Book 3 of Judgments at Page 276; Auditors File Number E-1359, records of said county;

Thence along said BPA Westerly Right of Way line, South 19°48'06" West, for a distance of 444.06 feet;

Thence continuing along said BPA Westerly Right of Way line, South 19°47'45" West, for a distance of 387.59 feet to the Northerly Right of Way line of State Route 501;

Thence leaving said BPA Westerly Right of Way line and along said Northerly Right of Way line of State Route 501, North 64°04'07" West, for a distance of 3244.58 feet to the beginning of a 6925.00 foot radius tangent curve to the right;

Thence continuing along said Northerly Right of Way line, along the arc of a 6925.00 foot radius tangent curve to the right, for an arc distance of 198.29 feet, through a central angle of 01°38'26", the radius of which bears North 25°55'53" East, the long chord of which bears North 63°14'54" West, for a chord distance of 198.28 feet to the West line of a Parcel of Land described in Exhibit "A" of the **"Superior Court of Washington For Clark County, Judgment Number 04-2-03753-4, Stipulation and Agreed Order Quieting Title and Dismissing Suit"** and recorded under Auditors File Number 4510180 Order, records of said county, said point being the **TRUE POINT OF BEGINNING;**

Together with and subject to easements, reservations, covenants and restrictions apparent or of record.

**EXCEPTING THE AREA DESCRIBED BY THE FOLLOWING EASEMENTS:**

1. **Auditors File Number:** G491548  
**Grantor:** Elmer Rufener and Wife, Marie Rufener  
**Grantee:** Olympic Pipeline Company  
**Date:** June 19, 1967

**TOTAL AREA OF PARCEL 6B AFTER THE EXCEPTIONS:**  
126.17 acres land, more or less

**BASIS OF BEARING:** NAD 83/91, Washington State Plane Coordinate System, South Zone, US-Feet. Divide Grid Distances by a Combined Scale Factor of 1.00004917 to obtain Ground Distances.

## APPENDIX B BANK DEVELOPMENT PLAN AND DESIGN

### APPENDIX B.1

#### B.1.1 Development Plan – Overview<sup>1</sup>

Approximately 27.10 acres of new wetland will be created by grading activities at the bank project. This includes 1.60 acres of wetlands that were created via a Port of Vancouver permittee-responsible mitigation project. This area was added to the bank project via amendment to the banking instrument. The Port implemented their permittee-responsible mitigation site in 2008. The Port mitigation site was four years old when the bank sponsor assumed responsibility of the site on October 4, 2012.

Following grading, the entire bank site will be planted to develop into a mosaic of forested, shrub, emergent, and aquatic bed wetlands. In addition, the active floodplain areas (uplands), which are currently dominated by non-native pasture grasses, will be planted to become active floodplain forest and shrub area interspersed with the existing wetland. Newly created wetlands will be established by grading and will be planted to a willow-dominated scrub-shrub community transitioning from the floodplain forest to the existing emergent wetlands (**Figure B-1**).

The Sponsor proposes to cut and fill approximately 82,564 cubic yards of material from active floodplain areas (uplands) to construct approximately 25.5 acres of wetland area per the Grading Plan (**Figure B-2**). Together with the 1.60 acres of wetlands created and added to the bank via amendment to the banking instrument, created wetlands in the bank project will total 27.10 acres. The earthwork is anticipated to occur during the summer of 2010, pending permit approval. Upland areas will be cut from an elevation of approximately 12 feet along the edge of existing wetlands. Generally, uplands will be excavated 1 to 3 feet, down to a target elevation of 8 to 9 feet, matching existing wetland elevations on site. Slopes of the existing active floodplain forest may be graded 0 to 2 feet in select locations to maintain the gently rolling topography of the site. Cut areas will be graded to match contours adjacent to active floodplain forest areas of the site (**Figures B-3 and B-4**). Excavated areas will be graded back smoothly into upland areas, seeded with an herbaceous mix for cover following grading, and planted in an active floodplain forest community type consisting of black cottonwood, red alder, Oregon ash, black hawthorn, cascara, Nootka rose, red elderberry, and common snowberry (**Figure B-5**<sup>2</sup>). No grading will occur within existing wetlands, the boundaries of which shall be flagged in the field prior to grading activity. No cutting to create wetlands will occur in the area falling within the BPA easement. Approximately 87.71 acres (**Figure B-1**) of existing wetland, including the BPA easement will be enhanced with native tree, shrub, and emergent species.

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<sup>1</sup> As an obligation independent of this instrument, the City of Vancouver requires that activities on the bank site comply with its regulations, including but not limited to VMC 20.760, Shoreline Management Master Program; VMC 20.740, Critical Areas Protection; VMC 14.26, Water Resources Protection; VMC 20.710, Archaeological Resource Protection; VMC 20.450, Open Space Districts; VMC 20.790, SEPA; VMC 20.770, Tree Conservation; VMC 14.24, Erosion Control; and VMC 14.25, Stormwater Control.

<sup>2</sup> Planting details for the previously permitted Port mitigation site can be found in the project as-built report located in the resource folder.

## B.1.2 Design Elements

### B.1.2.1 Grading Specifications

The proposed construction includes grading and excavating soils in designated areas to the depth needed to establish wetland hydrology within the wetland creation areas. Datalogger readings (levelloggers) of groundwater data gathered onsite in 2008 show that site wetland hydrology is directly influenced and strongly driven by water levels in the Columbia River (**Attachment 5** of the Resource Folder includes groundwater data gathered during the 2008 growing season). **Figure B-6** shows Levellogger locations on site. **Figures B-6A, B-6B, B-6C** and **B-6D** graph groundwater levels at the levelloggers as compared to proposed grading elevations. Shapes of the graphs for water levels in the bank site mimic the graph for the USGS Columbia River gage data (**Figure B-7** – the gage is located underneath the Interstate-5 Bridge, a short distance from the bank site). There is about a 3-day lag between levels in the river and changes to water levels in the bank site. The peak in Columbia River flows in mid-May 2008 correlates with the onset of snowmelt. The average Columbia River levels, as measured at the USGS gage underneath the I-5 Bridge, from 1997-2007 for January through July are shown on **Figure B-8**. These mean river levels indicate that wetland hydrology likely existed at elevations 9 feet and lower on the wetland mitigation bank site during all years from 1997-2007. Wetland conditions generally exist on the site at elevations 9 feet and lower (**Figure B-6**). Therefore, upland areas excavated down to a target elevation of 8 to 9 feet are anticipated to create wetland areas on site.

Approximately 83,000 cubic yards of material will be excavated to create approximately 25.5 acres of additional wetland (**Figure B-2** – Grading Plan). Together with the 1.60 acres of wetlands created and added to the bank via amendment to the banking instrument, created wetlands in the bank project will total 27.10 acres. Excavated material will be deposited onto existing uplands and will be graded to blend in with the natural landscape (See **Figures B-3 and B-4** – Cross-sectional views of site post-grading).

Access to the site will be provided via La Frambois Road to the east (**Figure B-9**). Natural vegetation, silt fencing, and earthen berms will filter storm water at the project site. A 6-inch earthen berm will be created between existing and created wetlands in order to separate hydraulic flow and provide sediment retention within the created wetland area in case of a rain event (**Figure B-10**). This berm will provide enough storage capacity within the created wetland areas so that sediment ponds will not be required (See the Surface Water Pollution Prevention Plan or SWPPP, **Attachment 6** of the Resource Folder for a full discussion of this issue). There are no impervious surfaces associated with the project and there will be no increase of stormwater runoff. The created wetlands will increase flood storage capacity within the project site and provide water quality improvement for agricultural runoff and runoff associated with Lower River Road.

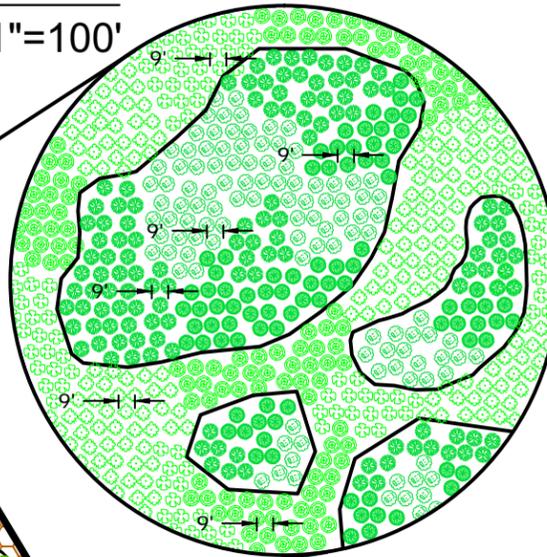
Construction activities will include cutting, filling, grading, and planting.

**NOTES:**

1. Base map from Minister-Glaeser Surveying, Inc., 2009.
2. Utility easement location and width was surveyed by Minister-Glaeser Surveying, Inc., 2009.
3. Densely plant the buffer along Lower River Road/SR 501.
4. The Active Floodplain area will be planted with trees and shrubs everywhere except within BPA easement, where only shrubs will be planted.
5. The wetland delineation was conducted by JD White, August, 2006.
6. The wetland boundaries received a jurisdictional determination from the U.S. Army Corps of Engineers, September, 2007.

# Detail A

Scale = 1"=100'



**DETAIL LEGEND:**

- Oregon ash
- Black cottonwood
- Pacific willow
- Pacific ninebark
- Red osier dogwood
- Nootka rose

**LEGEND:**

- Bank Site Area (155.46 ac.)
- Active Floodplain (Upland)
- Active Floodplain-Oregon White Oak Grove (Upland)
- Palustrine Forested & Scrub-Shrub Wetland Mosaic (including 25.50 ac. of wetland creation)
- Palustrine Emergent Wetland (PEM)
- Palustrine Aquatic Bed Wetland (PAB)
- Created Palustrine Forested/Scrub-shrub Wetland Mosaic (PFO/PSS) (25.5 ac.)
- Created Palustrine Forested/Emergent Wetland (PFO/PEM) (1.6 ac.)

- BPA Easement (13.82 ac.)  
(land in this easement is owned in fee simple by the Port of Vancouver, USA)
- BPA Right-of-Way (land in this right-of-way is owned in fee simple by BPA)
- Setback (18.23 ac.)

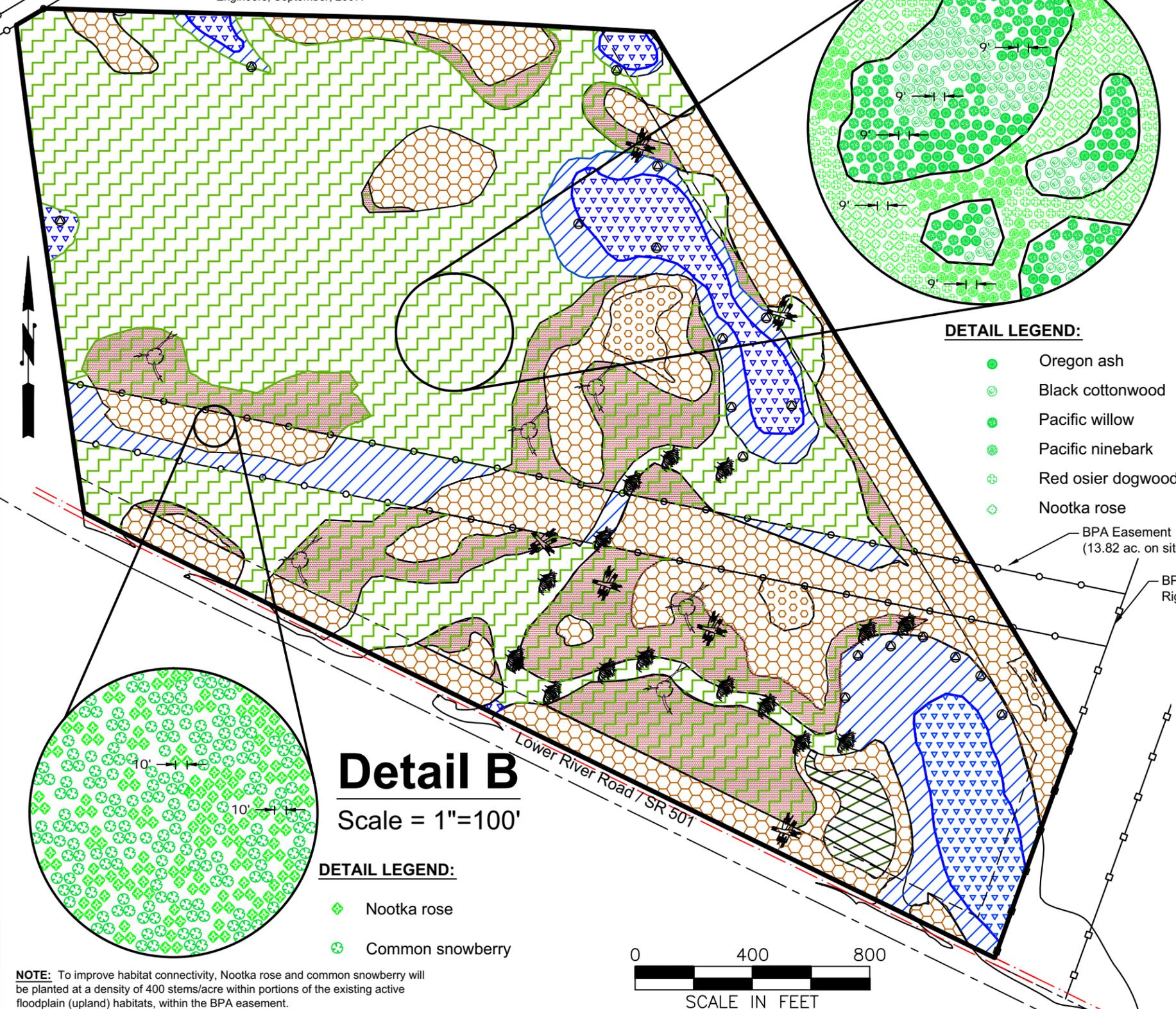
**HABITAT FEATURES**

- Brush Pile
- Root Wad
- Upright Snag
- Bird Nest Pole with 8 Nests
- Bird Enclosure (T-Post Wrapped in Chicken Wire)

Proposed Plant Communities	Creditable Area (acres)	Area In Setback (acres)	Area in BPA Easement (acres)	Mitigation Bank Site Total (acres)	Credit Ratio	Credits
<b>UPLAND</b>						
Active Floodplain Forest (Enhancement)	16.15	13.38	9.25	38.78	5:1	3.23
Active Floodplain Forest-Oregon White Oak (Enhancement)	1.65	0.22		1.87	5:1	0.33
<b>Total Upland Enhancement</b>	<b>17.80</b>	<b>13.60</b>	<b>9.25</b>	<b>40.65</b>		<b>3.56</b>
<b>WETLAND</b>						
<b>Creation</b>						
Palustrine Forested/Scrub-Shrub Mosaic	25.50			25.50	1:1	25.5
Palustrine Forested/Emergent Mosaic	1.60				1:1	1.01*
<b>Enhancement</b>						
Palustrine Forested/Scrub-Shrub Mosaic	59.75	2.76		62.51	3:1	19.92
Palustrine Emergent Wetland	9.72	0.87	4.57	15.16	4:1	2.43
Palustrine Aquatic Bed Wetland	9.04	1.00		10.04	4:1	2.26
<b>Total Wetland Enhancement</b>	<b>78.51</b>	<b>4.63</b>	<b>4.57</b>	<b>87.71</b>		<b>24.61</b>
<b>Total Wetland Creation and Enhancement</b>	<b>105.61</b>	<b>4.63</b>	<b>4.57</b>	<b>114.81</b>		<b>51.12</b>
<b>TOTALS</b>						
<b>Total Bank Site Area</b>	<b>123.41</b>	<b>18.23</b>	<b>13.82</b>	<b>155.46</b>		<b>54.68</b>

\* A portion of these credits were already used for a previously permitted Port project

BPA Easement and Right-of-Way



# Detail B

Scale = 1"=100'

**DETAIL LEGEND:**

- Nootka rose
- Common snowberry

**NOTE:** To improve habitat connectivity, Nootka rose and common snowberry will be planted at a density of 400 stems/acre within portions of the existing active floodplain (upland) habitats, within the BPA easement.



**Figure B-1**  
**BANK SITE DESIGN**  
 Columbia River Wetland Mitigation Bank  
 Clark County Mitigation Partners, LLC  
 City of Vancouver, Clark County, Washington  
 Sections 17 & 20, Township 2N, Range 1E, W.M.

DATE: 8/7/13  
 DWN: MMM  
 REQ. BY: MM  
 PRJ. MGR: MM  
 CHK: MMM  
 APPR:  
 PROJ.#: 1209.03

**ECOLOGICAL LAND SERVICES, INC.**  
 1157 3rd Ave., Suite 220 Longview, WA 98632  
 (360) 578-1371 Fax: (360) 414-9305



All materials and methods of construction and installation for water, sewer, storm water facilities, and erosion control measures, shall conform to City of Vancouver Engineering Services "General Requirements and Details for the Design and Construction of Water, Sanitary Sewer Erosion Control and Surface Water Systems." Construction shall be as per the most current standard detail contained therein.

**LEGEND:**

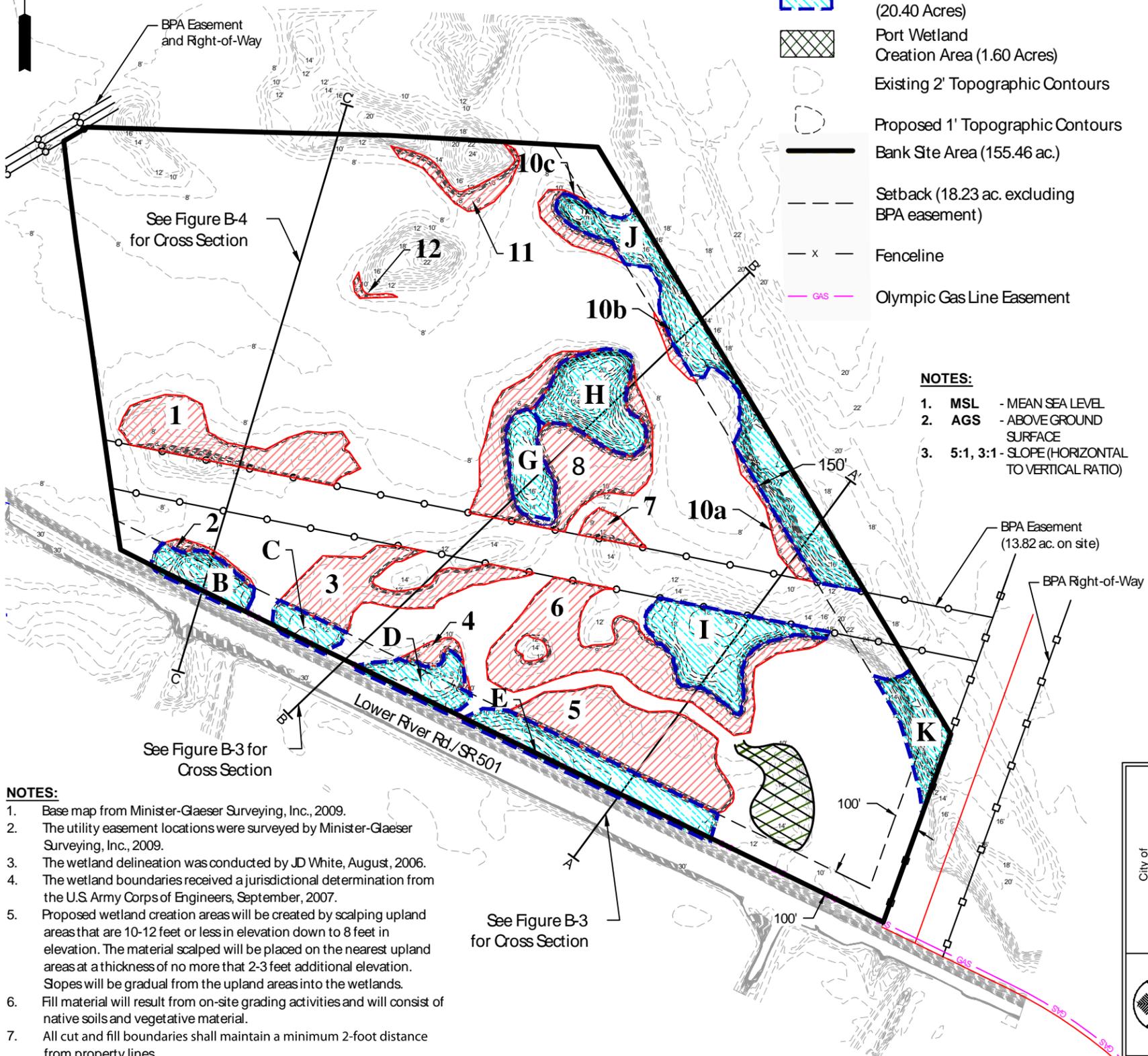
- 1 Proposed Wetland Creation Areas (25.50 Acres)
- A Proposed Fill Area (20.40 Acres)
- Port Wetland Creation Area (1.60 Acres)
- Existing 2' Topographic Contours
- Proposed 1' Topographic Contours
- Bank Site Area (155.46 ac.)
- Setback (18.23 ac. excluding BPA easement)
- Fenceline
- Olympic Gas Line Easement

WETLAND	AREA	TYPE OF CUT	VOLUME
1	3.55 Ac. (154,762 ft. <sup>2</sup> )	5:1 to 8' MSL	14,800 Cubic Yards
2	0.24 Ac (10,362 ft. <sup>2</sup> )	5:1 to 8' MSL	477 Cubic Yards
3	3.14 Ac (136,807 ft. <sup>2</sup> )	5:1 to 8.5' MSL	10,417 Cubic Yards
4	0.40 Ac (17,480 ft. <sup>2</sup> )	5:1 to 8.5' MSL	1,199 Cubic Yards
5	4.86 Ac (211,522 ft. <sup>2</sup> )	5:1 to 9' MSL	17,410 Cubic Yards
6	5.60 Ac (243,938 ft. <sup>2</sup> )	5:1 to 8.5' MSL	13,967 Cubic Yards
7	0.50 Ac (21,810 ft. <sup>2</sup> )	5:1 to 8.5' MSL	1,628 Cubic Yards
8	4.81 Ac (209,417 ft. <sup>2</sup> )	5:1 to 8' MSL	17,641 Cubic Yards
10a	0.59 Ac (25,657 ft. <sup>2</sup> )	5:1 to 8' MSL	1,238 Cubic Yards
10b	0.20 Ac (8,577 ft. <sup>2</sup> )	5:1 to 8' MSL	216 Cubic Yards
10c	0.67 Ac (29,183 ft. <sup>2</sup> )	5:1 to 8' MSL	1,536 Cubic Yards
11	0.84 Ac (36,491 ft. <sup>2</sup> )	5:1 to 8' MSL	1,880 Cubic Yards
12	0.10 Ac (4,527 ft. <sup>2</sup> )	5:1 to 8' MSL	155 Cubic Yards
<b>TOTAL</b>	<b>25.50 Acres</b>		<b>82,564 Cubic Yards</b>

FILL	AREA	TYPE OF FILL	VOLUME
B	1.35 Ac (58,911 ft. <sup>2</sup> )	5:1 to 3' AGS	5,495 Cubic Yards
C	0.76 Ac (33,104 ft. <sup>2</sup> )	5:1 to 3' AGS	3,063 Cubic Yards
D	1.40 Ac (61,005 ft. <sup>2</sup> )	5:1 to 3' AGS	5,613 Cubic Yards*
E	2.92 Ac (127,208 ft. <sup>2</sup> )	5:1 to 3' AGS	11,715 Cubic Yards
G	1.48 Ac (64,527 ft. <sup>2</sup> )	5:1 to 2' AGS	4,106 Cubic Yards
H	2.23 Ac (123,010 ft. <sup>2</sup> )	5:1 to 2' AGS	7,896 Cubic Yards
I	3.30 Ac (143,800 ft. <sup>2</sup> )	5:1 to 2' AGS	9,310 Cubic Yards
J	5.55 Ac (241,610 ft. <sup>2</sup> )	5:1 to 3' AGS	21,694 Cubic Yards*
K	1.60 Ac (69,768 ft. <sup>2</sup> )	5:1 to 3' AGS	7,003 Cubic Yards*
<b>TOTAL</b>	<b>20.40 Acres</b>		<b>75,948 Cubic Yards</b>

\*Areas D, J, and K may be filled additionally with more material as appropriate to contour with adjacent ground.

- NOTES:**
- MSL** - MEAN SEA LEVEL
  - AGS** - ABOVE GROUND SURFACE
  - 5:1, 3:1** - SLOPE (HORIZONTAL TO VERTICAL RATIO)



- NOTES:**
- Base map from Minister-Gaesser Surveying, Inc., 2009.
  - The utility easement locations were surveyed by Minister-Gaesser Surveying, Inc., 2009.
  - The wetland delineation was conducted by JD White, August, 2006.
  - The wetland boundaries received a jurisdictional determination from the U.S. Army Corps of Engineers, September, 2007.
  - Proposed wetland creation areas will be created by scalping upland areas that are 10-12 feet or less in elevation down to 8 feet in elevation. The material scalped will be placed on the nearest upland areas at a thickness of no more that 2-3 feet additional elevation. Slopes will be gradual from the upland areas into the wetlands.
  - Fill material will result from on-site grading activities and will consist of native soils and vegetative material.
  - All cut and fill boundaries shall maintain a minimum 2-foot distance from property lines.

City of VANCOUVER WASHINGTON	Plans reviewed for compliance with City Standards and Policies for Grading	Case Number _____	Date _____	Date _____	Date _____	Date _____	Grading: Cut _____ CY	Fill _____ CY
	Recommended for Approval:	Erosion Control _____	Grading (Per Building Code) _____	Planning Review _____	Transportation Review _____	Improvement Summary: _____		

**NOTE:** THIS APPROVAL IS FOR **SITE GRADING ONLY**. NO STORMWATER/DRAINAGE STRUCTURES ARE APPROVED AT THIS TIME. GRADING OF SWALE/POND IS SUBJECT TO CHANGE WITH FINAL CIVIL PLAN APPROVAL.

Figure B-2  
**GRADING PLAN**  
 Columbia River Wetland Mitigation Bank  
 Clark County Mitigation Partners, LLC  
 City of Vancouver, Clark County, Washington  
 Sections 17 & 20, Township 2N, Range 1E, W.M.

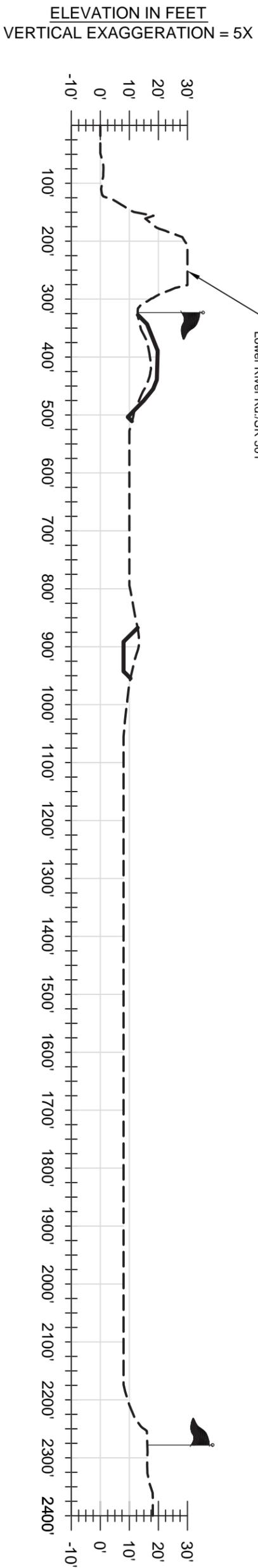
DATE: 8/5/13  
 DWN: MPM/BOB  
 REQ. BY: MIM  
 PRJ MGR: MM  
 CHK: MIMM  
 APPR:  
 PROJ#: 1209.03

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C

### CROSS SECTION C-C'

C'



**LEGEND:**

- Existing Ground
- Final Ground
- Property Boundary



**NOTES:**

1. See Figure B-2 for cross section location.
2. Cross section profiles were generated using Autodesk Civil 3D 2010.

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REQ. BY: MM  
PRJ. MGR: MM  
CHK: MMM  
APPR:  
PROJ.#: 1209.03

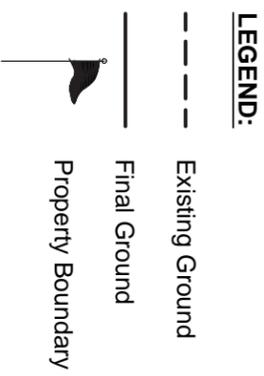
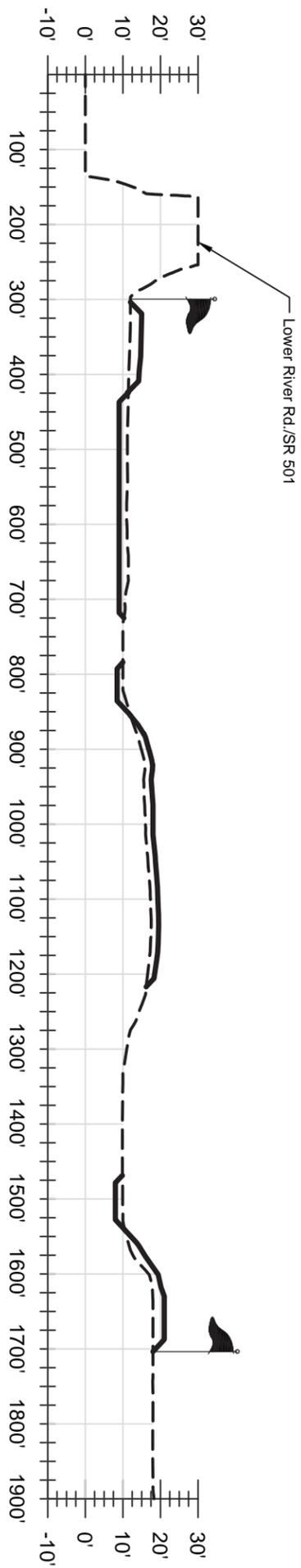
Figure B-4  
CROSS SECTION C-C'  
Columbia River Wetland Mitigation Bank  
Clark County Mitigation Partners, LLC  
City of Vancouver, Clark County, Washington  
Sections 17 & 20, Township 2N, Range 1E, W.M.

A

CROSS SECTION A-A'

A'

ELEVATION IN FEET  
VERTICAL EXAGGERATION = 5X



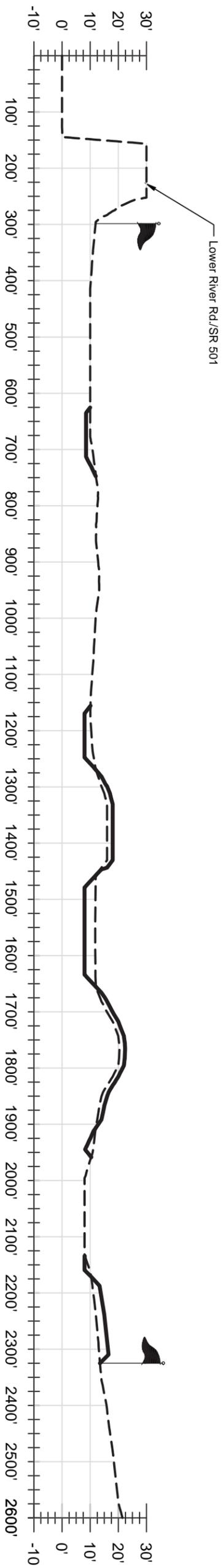
DISTANCE IN FEET

B

CROSS SECTION B-B'

B'

ELEVATION IN FEET  
VERTICAL EXAGGERATION = 5X



DISTANCE IN FEET



- NOTES:**
1. See Figure B-2 for cross section locations.
  2. Cross section profiles were generated using Autodesk Civil 3D 2010.



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PRJ. MGR: MM  
CHK: MMM  
APPR:  
PROJ.#: 1209.03

Figure B-3  
CROSS SECTIONS A-A' & B-B'  
Columbia River Wetland Mitigation Bank  
Clark County Mitigation Partners, LLC  
City of Vancouver, Clark County, Washington  
Sections 17 & 20, Township 2N, Range 1E, W.M.

# Plant Quantities by Habitat Type and Acreage

Classification	Active Floodplain	Active Floodplain - Oregon White Oak Grove	BPA Easement	Palustrine Forested Wetland	Palustrine Shrub Scrub	Palustrine Emergent	Palustrine Aquatic Bed
Acres	29.5	1.9	9.2	44.0	44.0	15.1	10.0
Plants Per Acre:	500	350	400	500	500		
<b>Common name</b>		<b>Percentage</b>	<b>Plants</b>				
<b>Active Floodplain-Forest</b>							
Black Cottonwood ( <i>Populus balsamifera</i> ssp. <i>trichoc</i> )		30%	4425				
Red Alder ( <i>Alnus rubra</i> )		13%	1918				
Oregon Ash ( <i>Fraxinus latifolia</i> )		15%	2213				
Black Hawthorn ( <i>Crataegus douglasii</i> )		8%	1180				
Cascara ( <i>Rhamnus purshiana</i> )		8%	1180				
Nootka Rose ( <i>Rosa nutkana</i> )		10%	1475				
Red Elderberry ( <i>Sambucus racemosa</i> )		8%	1180				
Common Snowberry ( <i>Symphoricarpos albus</i> )		8%	1180				
<b>TOTAL PLANTS:</b>		<b>100%</b>	<b>14751</b>				
<b>Active Floodplain - Oregon White Oak Grove</b>							
Oregon White Oak ( <i>Quercus garryana</i> )		30%	200				
Black Hawthorn ( <i>Crataegus douglasii</i> )		10%	67				
Common Snowberry ( <i>Symphoricarpos albus</i> )		25%	167				
Cascara ( <i>Rhamnus purshiana</i> )		10%	67				
Nootka Rose ( <i>Rosa nutkana</i> )		25%	167				
<b>TOTAL PLANTS:</b>		<b>100%</b>	<b>666</b>				
<b>BPA Easement</b>							
Common Snowberry ( <i>Symphoricarpos albus</i> )		50%	1840				
Nootka Rose ( <i>Rosa nutkana</i> )		50%	1840				
<b>TOTAL PLANTS:</b>		<b>100%</b>	<b>3680</b>				
<b>Palustrine Forested Wetland</b>							
Oregon Ash ( <i>Fraxinus latifolia</i> )		30%	6600				
Black Cottonwood ( <i>Populus balsamifera</i> ssp. <i>trichoc</i> )		35%	7700				
Pacific Willow ( <i>Salix lucida</i> var. <i>lasianдра</i> )		25%	5500				
Scouler Willow ( <i>Salix scouleriana</i> )		10%	2200				
<b>TOTAL PLANTS:</b>		<b>100%</b>	<b>22000</b>				
<b>Palustrine Shrub-Shrub Wetland</b>							
Pacific Willow ( <i>Salix lucida</i> var. <i>lasianдра</i> )		15%	3300				
Columbia River Willow ( <i>Salix fluviatilis</i> )		25%	5500				
Pacific Ninebark ( <i>Physocarpus capitatus</i> )		10%	2200				
Scouler Willow ( <i>Salix scouleriana</i> )		25%	5500				
Red Osier Dogwood ( <i>Cornus sericea</i> )		15%	3300				
Nootka Rose ( <i>Rosa nutkana</i> )		10%	2200				
<b>TOTAL PLANTS:</b>		<b>100%</b>	<b>22000</b>				
<b>Palustrine Emergent Wetland</b>							
American Slough Grass-T <sup>1</sup> ( <i>Beckmannia syzigachne</i> )							
Common Camas-T ( <i>Camassia quamash</i> )							
Columbia Sedge-D <sup>1</sup> ( <i>Carex aperta</i> )							
Dense Sedge-S ( <i>Carex densa</i> )							
Saw-beak Sedge-S <sup>1</sup> ( <i>Carex stipata</i> )							
One sided Sedge-S ( <i>Carex unilateralis</i> )							
California Oatgrass-T ( <i>Danthonia californica</i> )							
Tufted Hair Grass-D ( <i>Deschampsia caespitosa</i> )							
Large Leaf Avens-T ( <i>Geum macrophyllum</i> )							
Western Mannagrass-S ( <i>Glyceria occidentalis</i> )							
Daggerleaf Rush-S ( <i>Juncus ensifolius</i> )							
Slender Rush-S ( <i>Juncus tenuis</i> )							
<sup>1</sup> D=Dominant species occupy >20% cover; S=subordinant species occupy 6-19% cover; T=trace species occupy <5% cover.							
<b>Palustrine Aquatic Bed Wetland</b>							
American Water Plantain-S ( <i>Alisma plantago-aquatica</i> )							
Water Foxtail-D ( <i>Alopecurus geniculatus</i> )							
Western Mannagrass-S ( <i>Glyceria occidentalis</i> )							
Daggerleaf Rush-S ( <i>Juncus ensifolius</i> )							
Slender Rush-S ( <i>Juncus tenuis</i> )							
Wapato-S ( <i>Sagittaria latifolia</i> )							
Simple Stem Bur-reed-S ( <i>Sparganium emersum</i> )							
<b>TOTAL PLANTS:</b>							



DATE: 8/7/13  
DWN: BCB  
REQ. BY: MM  
PRJ. MGR: MM  
CHK: VW  
APPR:  
PROJ.#: 1209.03

Figure B-5  
PLANT LIST  
Columbia River Wetland Mitigation Bank  
Clark County Mitigation Partners, LLC  
City of Vancouver, Clark County, Washington  
Sections 17 & 20, Township 2N, Range 1E, W.M.

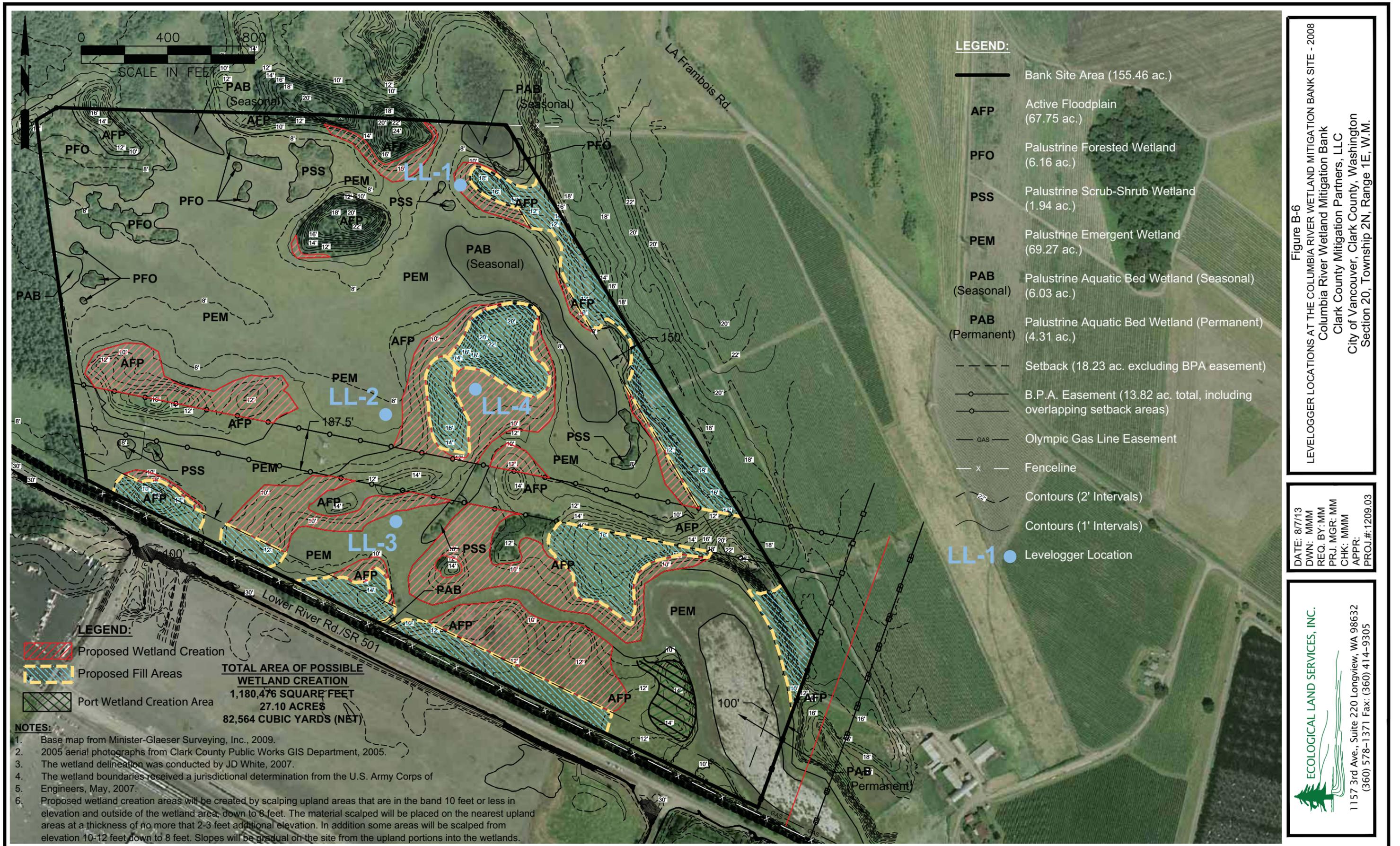
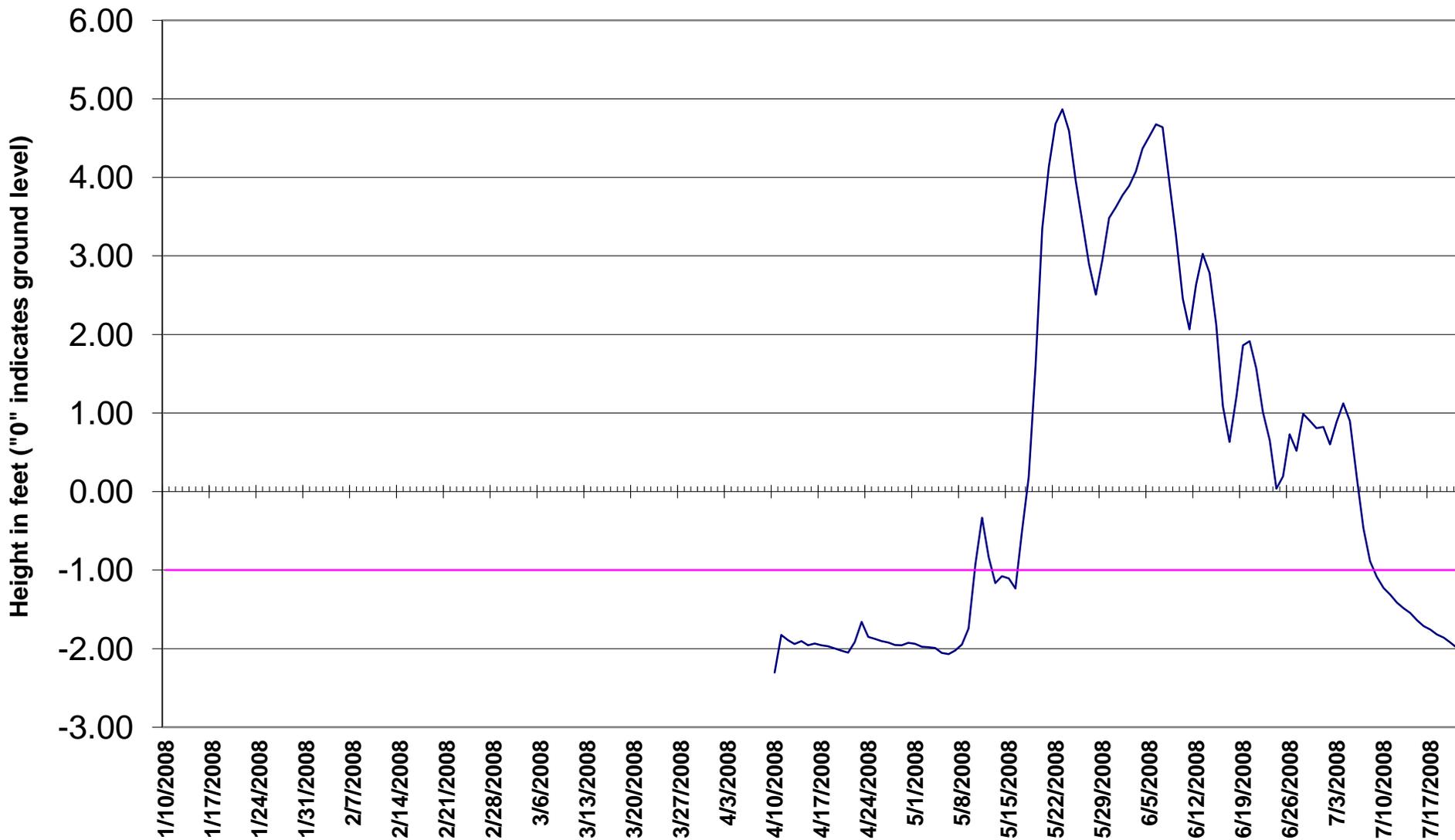
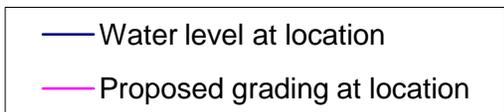


Figure B-6  
 LEVELLOGGER LOCATIONS AT THE COLUMBIA RIVER WETLAND MITIGATION BANK SITE - 2008  
 Columbia River Wetland Mitigation Bank  
 Clark County Mitigation Partners, LLC  
 City of Vancouver, Clark County, Washington  
 Section 20, Township 2N, Range 1E, W.M.

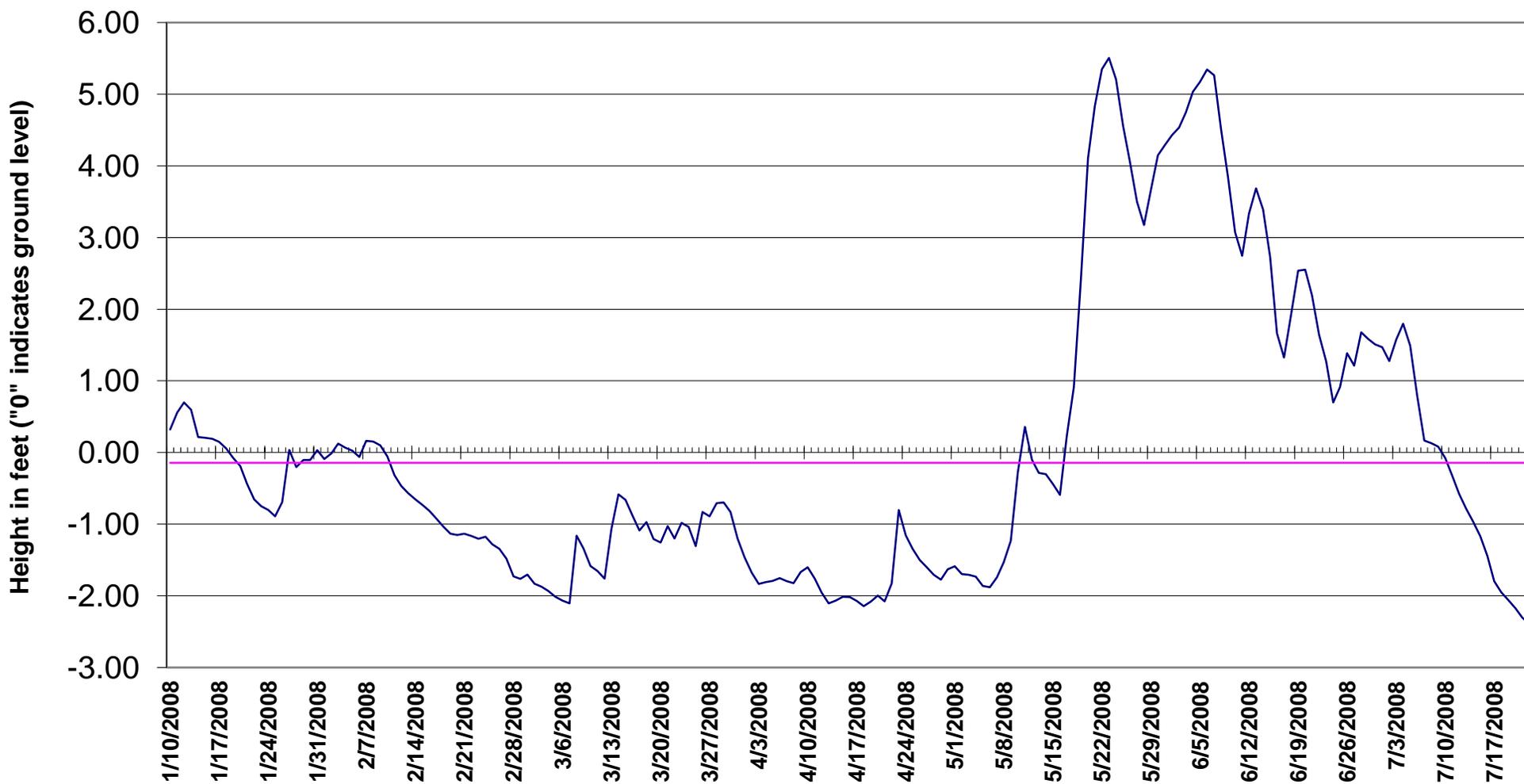
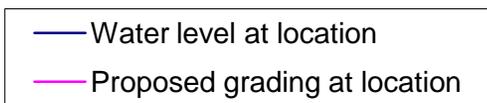
DATE: 8/7/13  
 DWN: MMM  
 REQ. BY: MM  
 PRJ. MGR: MM  
 CHK: MMM  
 APPR:  
 PROJ.#: 1209.03

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## LL1- Elevation: 9 ft

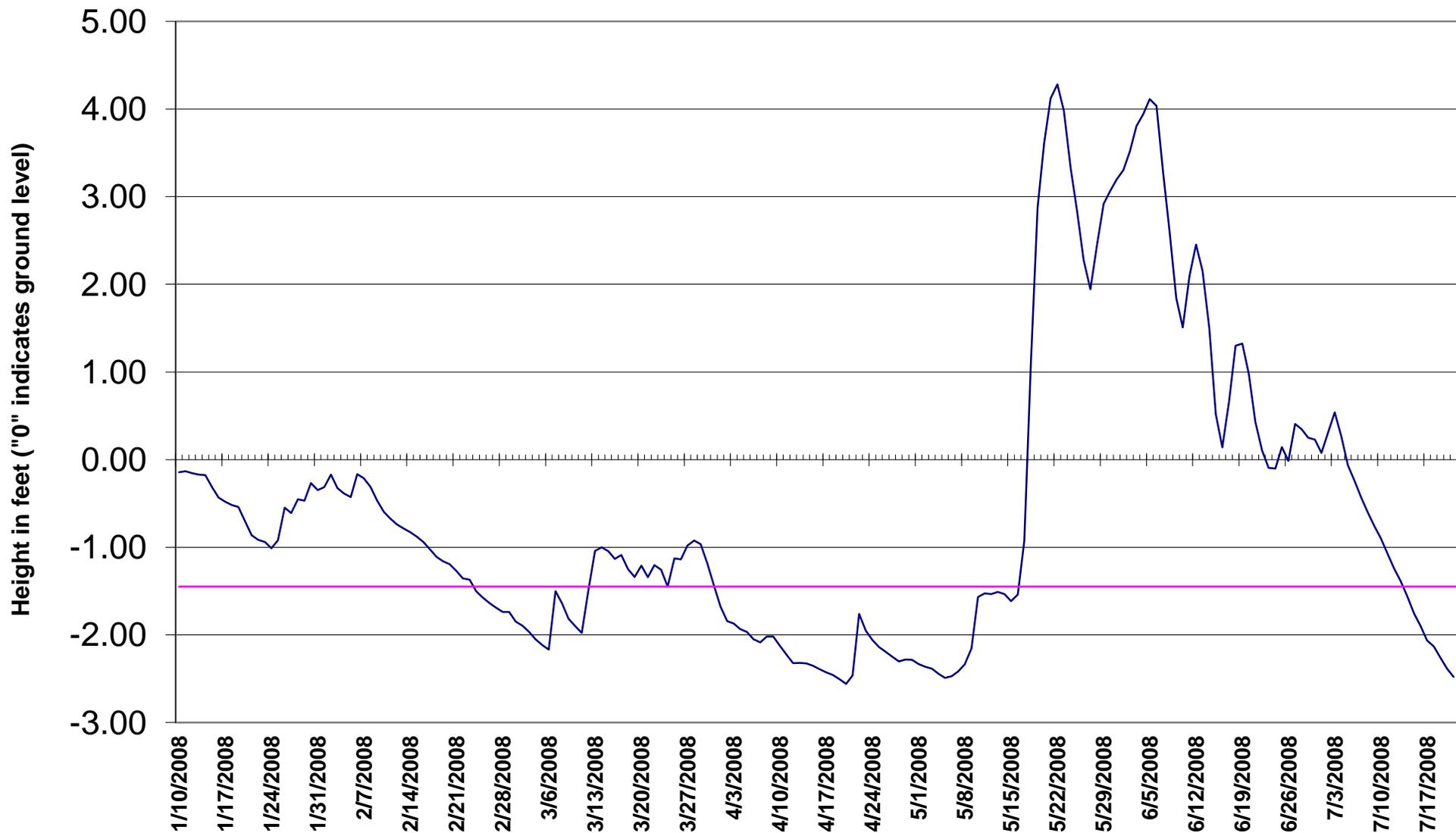
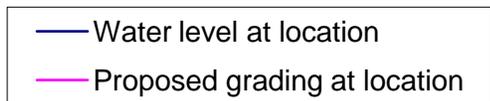


### LL2- Elevation: 8.15 ft



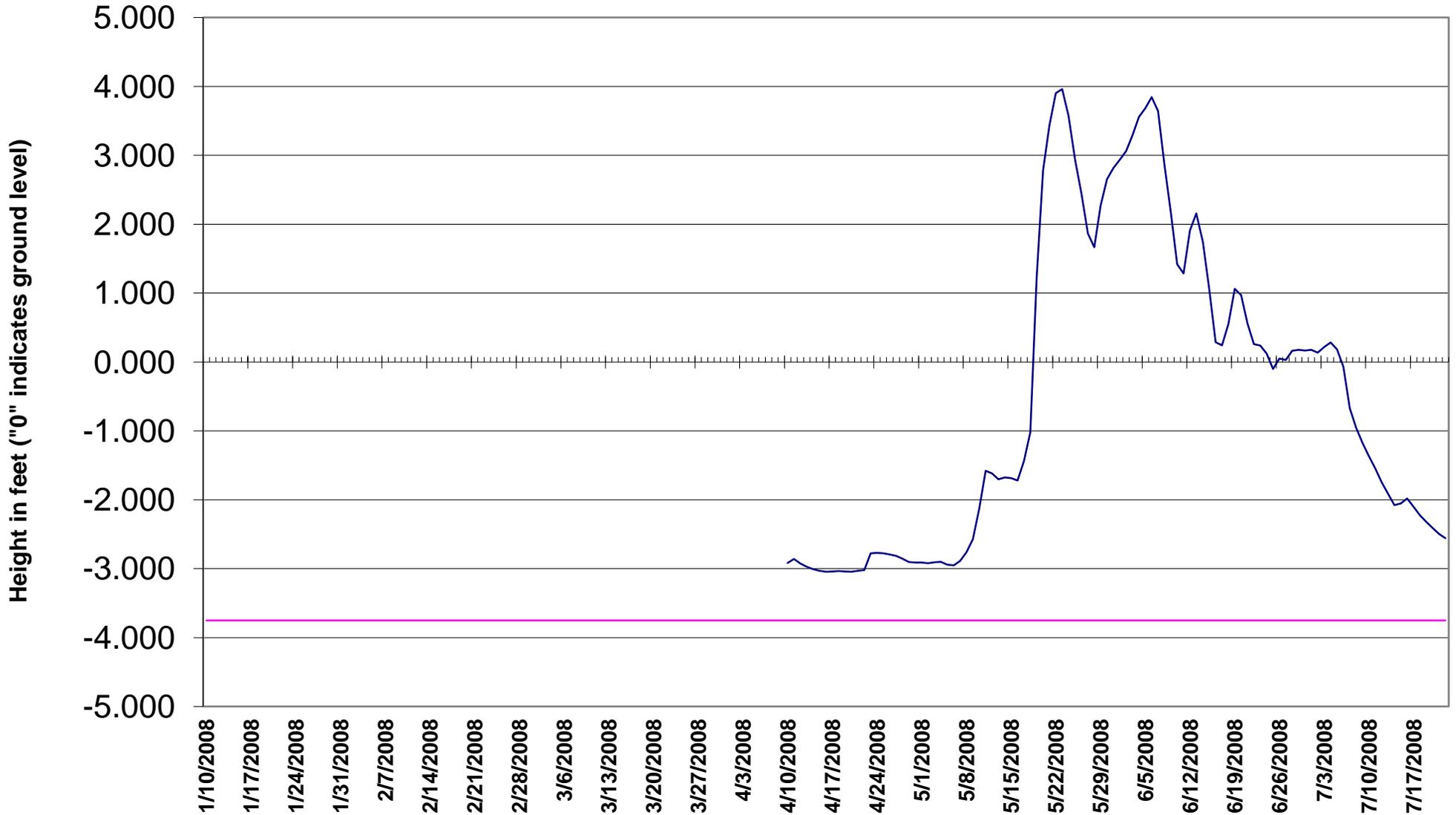
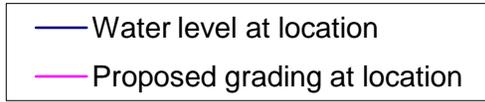
B-6C

### LL 3- Elevation: 9.45 ft



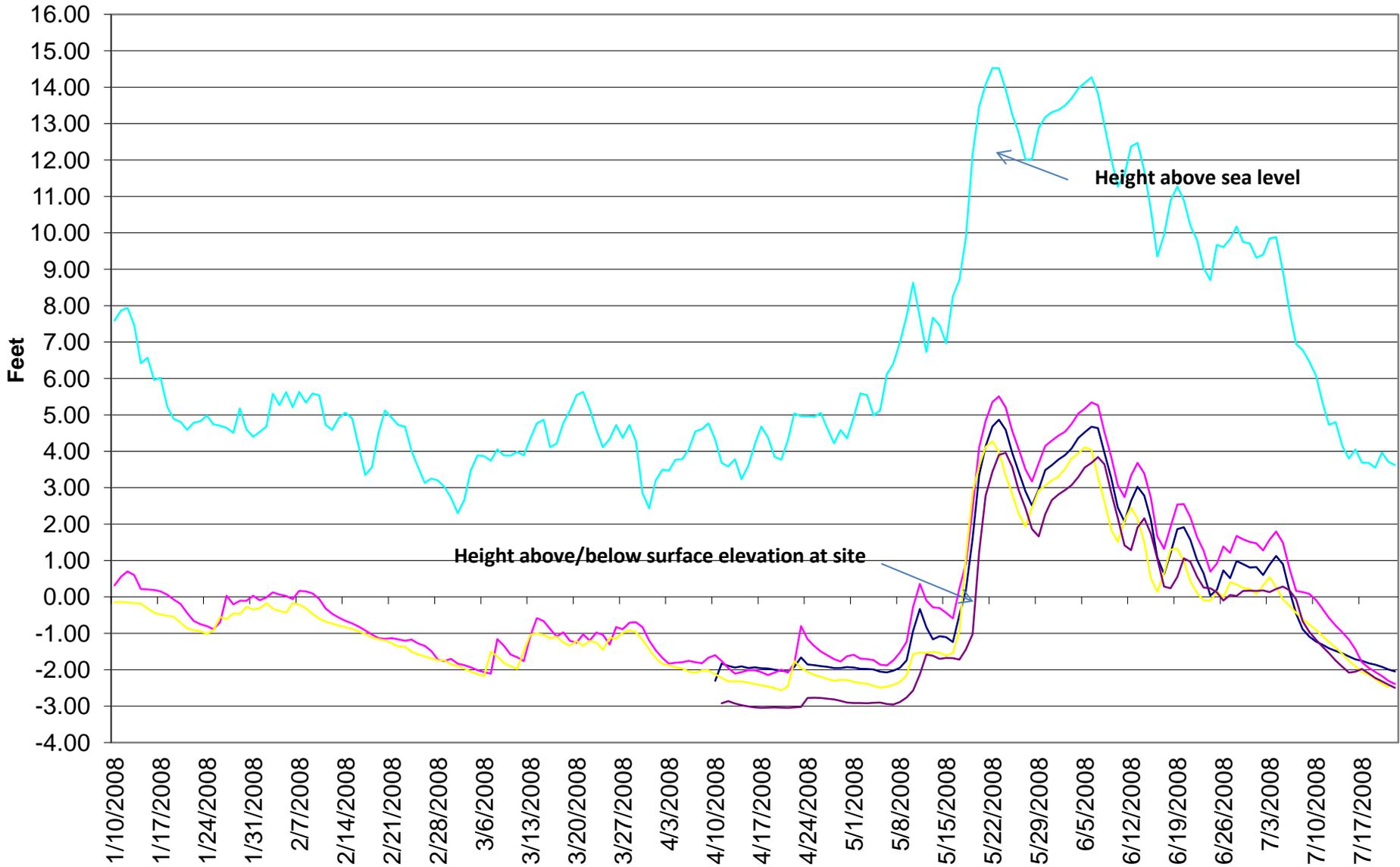
B-6D

### LL 4- Elevation: 11.75 ft



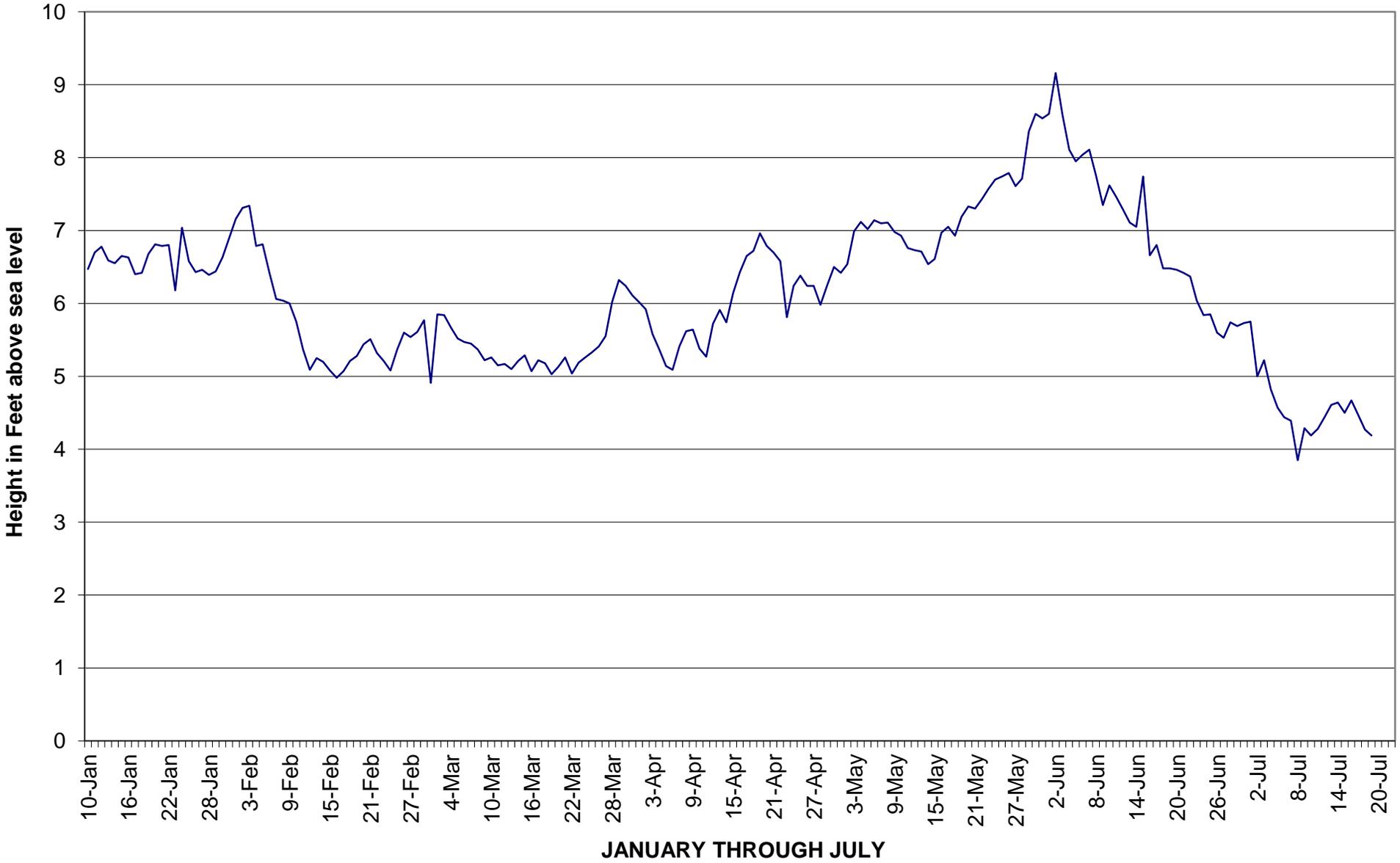
Columbia River Mitigation Bank Well Data vs. Height of Columbia River at Vancouver  
January to June 2008

- Levellogger 1
- Levellogger 2
- Levellogger 3
- Levellogger 4
- Gage Height of Columbia River at Vancouver



**USGS Gage at Vancouver 1997-2007**

— Columbia River Mean Height 1997-2007





**Grading Specifications for 1.60 acre Port Mitigation Site**

The 1.60 Port mitigation site was created by removing between 1 foot and 5.5 feet of material from existing grades.<sup>3</sup> The creation area adjoined existing Wetland A and was separated from this wetland by a thin sliver of upland buffer, which ensured that Wetland A was not impacted during grading activities and also allowed for the establishment of distinct vegetation communities, along an elevational gradient.

Excavation levels for the creation area were determined by reviewing topographic surveys of the area and observing water levels and soil saturation at different times of the year. The final grades created four separate hydrologic regimes. Each area was planted or seeded with appropriate wetland and upland vegetation. The creation wetlands were designed so that standing water would not persist for the entire year in order to prevent maturation of invasive bull frog tadpoles. The following hydrologic regimes were anticipated to be created by means of excavation:

1. The lowest portions of the creation area would sit at an elevation of 7 to 7.5 feet. These areas would experience sustained inundation through interactions with the seasonally high water table and backwater flooding from Vancouver Lake. The predicted hydrologic regime for this area would be semi-permanently flooded, as it is anticipated that the ponded areas would dry out in the later summer-early fall. This area would be planted with native emergent plugs.
2. The next zone would consist of broad gentle slopes that would be subject to temporary flooding. These areas are roughly situated between 7.5 and 8.5 feet in elevation and would be seeded with a diverse emergent wetland plant community.
3. The third vegetation zone would be subject to seasonal saturation that corresponds with seasonally high water table interactions and periodic flooding. This area is located between 8.5 and 9.5 feet and would be planted with a native wetland tree and shrub plant community that is suited to the anticipated seasonally saturated hydrologic regime.
4. The final hydrologic zone would be upland in nature and would not be subject to hydrologic conditions that would meet wetland criteria. The vegetation within this area would consist of species suitable for wetland/upland transitions zones and those that thrive in upland condition.

Construction of the Port mitigation site was completed in October 2008. Containerized plants were installed in November 2008 and emergent bare root plants were installed in February 2009 by the Port.

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<sup>3</sup> Additional information regarding the construction and installation of the Port mitigation site can be found in the *Conceptual Wetland Mitigation Plan Port of Vancouver Parcel 8 Development*, dated November 2006, which is located in the Resource Folder





- NOTES:**
1. Base map from Minister-Glaeser Surveying, Inc., 2009.
  2. 2005 aerial photographs from Clark County GIS Department, 2005.
  3. Tree survey was conducted in April, 2008, by Clark County Mitigation Partners, LLC.
  4. Individual trees or clumps of trees within 50 feet of grading activities will be fenced around the dripline with orange construction fencing or similar high visibility fencing.

**LEGEND:**

- Bank Site Area (155.46 ac.)
- - - Setback (18.23 ac. excluding BPA easement)
- - - BPA Easement (13.82 ac.) (land in this easement is owned in fee simple by Port of Vancouver, USA)
- - - BPA Right-of-Way (land in this ROW is owned in fee simple by BPA)
- Olympic Gas Line Easement
- Fenceline
- Tree Survey Area
- Orange Construction Fencing
- - - Silt Fencing

**Tree Count Summary**

Survey Area	# of Trees 6" DBH or greater
1	3
2	153
3	478
4	32
5	38
6	77
7	15
8	51
9	337
10	178
11	207
12	172
13	158
14	44
15	2
<b>Total</b>	<b>1,945</b>

Figure B-11  
**TREE CONSERVATION MAP**  
 Columbia River Wetland Mitigation Bank  
 Clark County Mitigation Partners, LLC, LLC  
 City of Vancouver, Clark County, Washington  
 Sections 17 & 20, Township 2N, Range 1E, W.M.

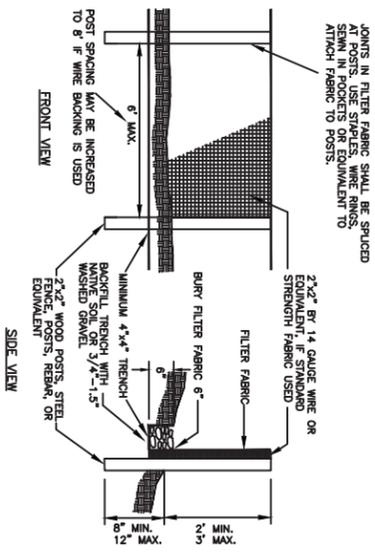
**ECOLOGICAL LAND SERVICES, INC.**  
  
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 (360) 578-1371 Fax: (360) 414-9305

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**A. SILT FENCE**

BMP E-2.33: SILT FENCE NOTES

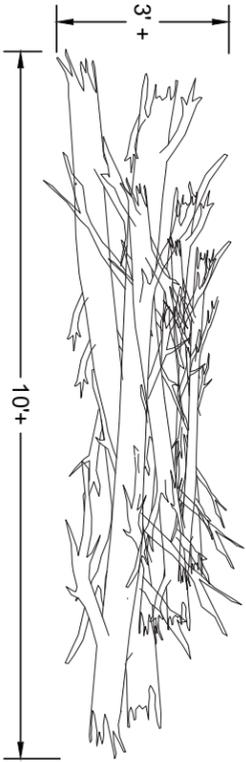


NOTE: FILTER FABRIC FENCES SHALL BE INSTALLED ALONG CONTOUR WHENEVER POSSIBLE.

**MAINTENANCE STANDARDS:**

1. SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST ONCE DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE FENCE, THEY MUST BE INTERCEPTED AND CONVEYED TO A SEDIMENT POND.
3. IT IS IMPORTANT TO CHECK THE UPHILL SIDE OF THE FENCE FOR SIGNS OF THE FENCE CLOSING AND ACTING AS A BARRIER TO FLOW AND THEN CAUSING CHANNELIZATION OF FLOWS PARALLEL TO THE FENCE. IF THIS OCCURS, REPLACE THE FENCE OR REMOVE THE TRAPPED SEDIMENT.
4. SEDIMENT DEPOSITS SHALL EITHER BE REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE-THIRD THE HEIGHT OF THE SILT FENCE, OR A SECOND SILT FENCE SHALL BE INSTALLED.
5. IF THE FILTER FABRIC (GEOTEXTILE) HAS DETERIORATED DUE TO ULTRAVIOLET BREAKDOWN, IT SHALL BE REPLACED.

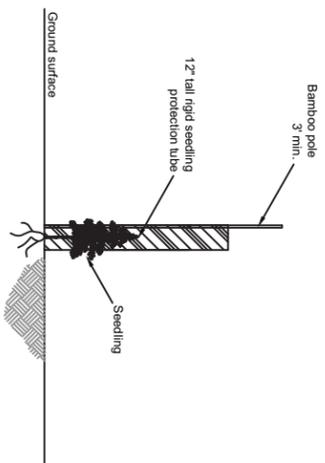
**F. BRUSH PILE**



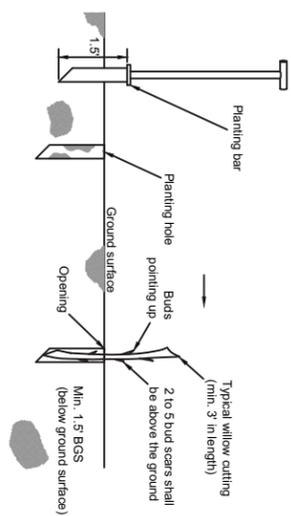
**Brush Pile Specifications:**

1. Contain 3 layers of brush (ranging from approximately 1/4- to 6-inch in diameter) with the largest diameter brush layer on the bottom of the pile, with progressively smaller diameter brush towards the top of the pile.

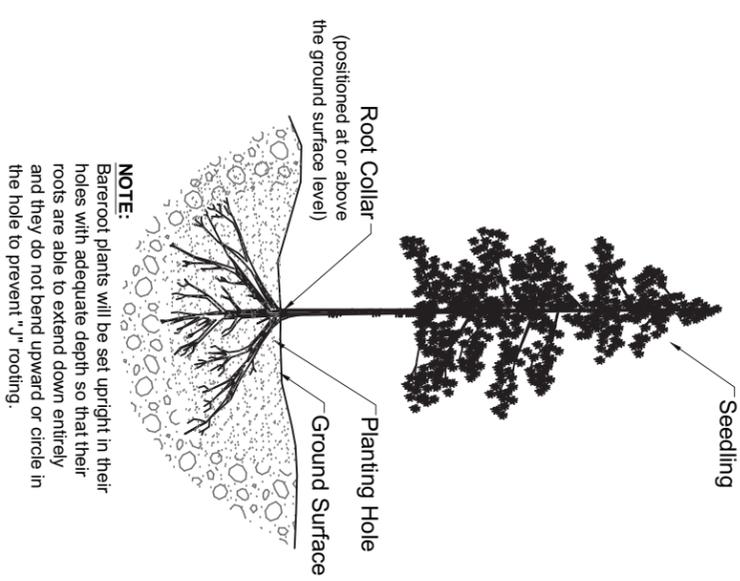
**B. ANTI-HERBIVORY DEVICE**



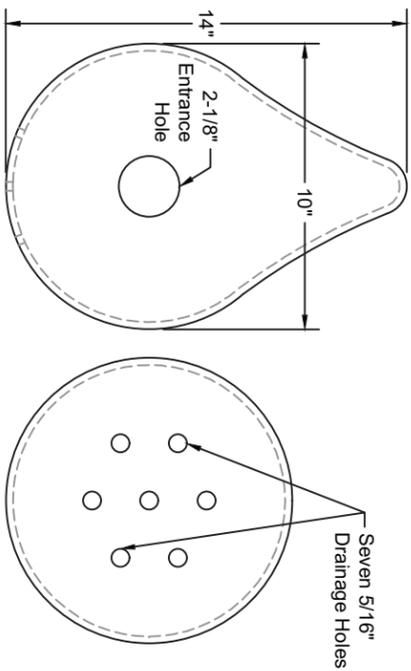
**C. CUTTING STOCK**



**D. BAREROOT STOCK**

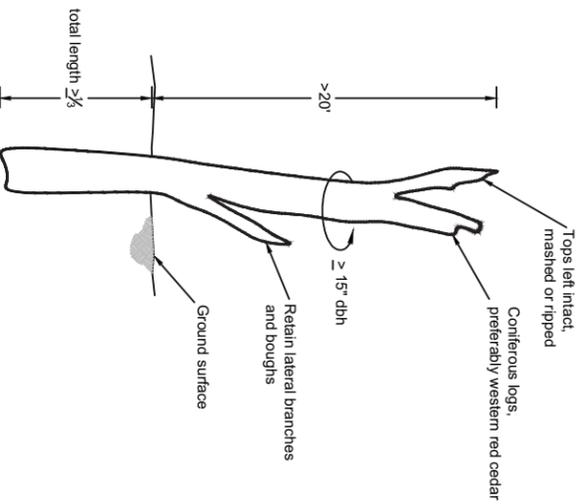


**E. PURPLE MARTIN GOURD NEST**



**NOTE:** Gourds will be attached in groups of 8 to three 15-foot telescoping poles and installed 6' above the water in the permanent palustrine aquatic bed habitat area.

**G. CAVITY TREE**



**H. WATERFOWL ENCLOSURE**

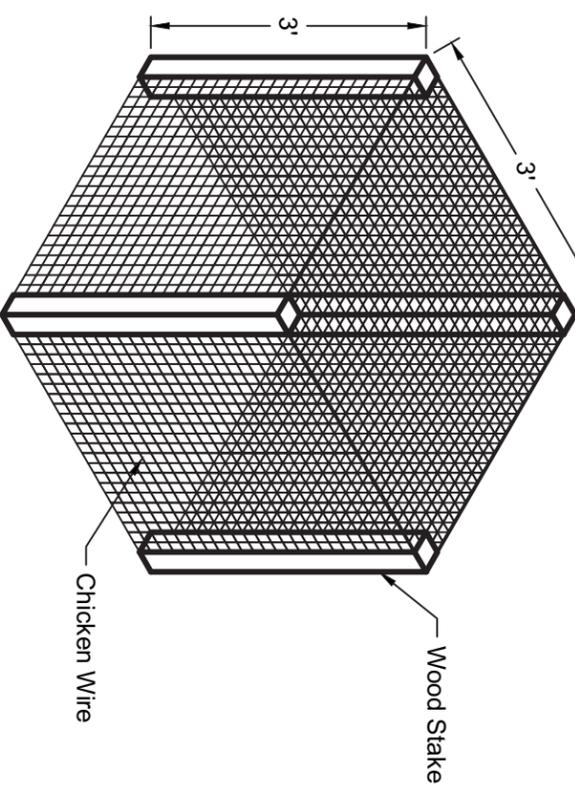


Figure B-13  
TYPICALS

Columbia River Wetland Mitigation Bank  
Clark County Mitigation Partners, LLC  
City of Vancouver, Clark County, Washington  
Sections 17 & 20, Township 2N, Range 1E, W.M.



ECOLOGICAL LAND SERVICES, INC.

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PROJ.#: 1209.03

### **Element #1 – Mark Clearing Limits**

To protect adjacent properties and to reduce the area of soil exposed to construction, the limits of construction will be clearly marked before land-disturbing activities begin. All existing trees are to be preserved (**Figure B-11**); wetland and buffer areas shall be clearly delineated; both in the field and on the plans. In general, natural vegetation and native topsoil shall be retained where possible. The Best Management Practices relevant to marking the clearing limits that will be applied for this project include:

- Preserving Natural Vegetation (BMP C101)
- High Visibility Plastic Fence (BMP C103)

(Specific BMPs are referenced in the SWPPP – **Attachment 6** of the Resource Folder).

Natural vegetation will be preserved on-site where possible. Clearing limits will be delineated prior to construction activities with an orange construction fence or similar fencing. Silt fencing may be used to delineate clearing limits in areas of low traffic. Silt fencing or orange construction fencing will be installed prior to ground disturbing activities (**Figure B-10**).

### **Element #2 – Establish Construction Access**

Construction access or activities occurring on unpaved areas shall be minimized, yet where necessary, access points shall be stabilized to minimize the tracking of sediment onto public roads, and wheel washing, street sweeping, and street cleaning shall be employed to prevent sediment from entering state waters. All wash wastewater shall be controlled on site. The specific BMPs related to establishing construction access that will be used on this project include:

- Stabilized Construction Entrance (BMP C105)
- Construction Road/Parking Area Stabilization (BMP C107)

One standard construction entrance is planned off of La Frambois Road, generally in the center portion of the eastern perimeter of the site, north of the existing mature oak trees, under the BPA easement (**Figure B-9**). This is the location of the existing gated access to the site. Employee parking areas will be designated by the contractor in upland areas. The construction access will be installed prior to equipment accessing the site.

### **Element #3 – Install Sediment Controls and Protective Fencing**

All stormwater runoff from disturbed areas shall pass through an appropriate sediment removal BMP before leaving the construction site or prior to being discharged to an infiltration facility. The specific BMPs to be used for controlling sediment on this project include:

- Silt Fence (BMP C233)

- Earthen Berm
- Materials on Hand (BMP C150)

Silt fencing (shown on **Figure B-11**) will be installed to prevent sediment from migrating off site onto neighboring properties, roads, and existing drainages. Silt fencing will be installed at the base of the slope prior to ground disturbing activities or immediately after. A 6-inch earthen berm will be created between existing wetlands and created wetlands as shown on **Figure B-10**, with detail on **Figure B-12**. Where this berm is created, silt fencing will not be used. Orange construction fencing (or similar high visibility fencing) will be installed between the berm and existing wetland to create a visual barrier to prevent disturbance of the existing wetland. The berm will be created as the first step in the grading process once the high visibility fencing is installed by slightly angling the blade of the bulldozer and driving around the edge of the wetland creation area. This berm will provide sediment retention as well as water storage capacity so that sediment ponds are not needed during the construction process. Quantities of erosion prevention and sediment control materials will be kept onsite at all times to be used for emergency situations.

Whenever possible, sediment-laden water shall be discharged into onsite, relatively level, vegetated areas (BMP C240 paragraph 5, page 4-102 of the SWPPP).

#### **Element #4 – Stabilize Soils**

Exposed and unworked soils shall be stabilized with the application of effective BMPs to prevent erosion throughout the life of the project. The specific BMPs for soil stabilization that shall be used on this project include:

- Temporary and Permanent Seeding (BMP C120)
- Mulching (BMP C121)
- Surface Roughening (BMP C130)
- Dust Control (BMP C140)
- Materials on Hand (BMP C150)

All exposed soils will be roughened and seeded in accordance with BMP C130 – Surface Roughening. Exposed and disturbed soils will be seeded as soon as possible after disturbance. Exposed areas will be watered down as necessary to prevent dust blowing and wind erosion. Seeded areas will also be watered as needed to facilitate growth. Quantities of erosion prevention and sediment control materials will be kept onsite at all times to be used in emergency situations.

The project site is located 2000' west of a residential area. As such, no soils shall remain exposed and unworked for more than 7 days during the dry season (May 1 to September 30) and 2 days during the wet season (October 1 to April 30). Regardless of the time of year, all soils shall be stabilized at the end of the shift before a holiday or weekend if needed based on weather forecasts.

In general, cut and fill slopes will be stabilized as soon as possible and soil stockpiles will be temporarily covered with plastic sheeting. All stockpiled soils shall be stabilized from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, waterways, and drainage channels.

### **Element #5 – Protect Slopes**

All cut and fill slopes will be designed, constructed, and protected in a manner that minimizes erosion. The following specific BMPs will be used to protect slopes for this project:

- Temporary and Permanent Seeding (BMP C120)
- Surface Roughening (BMP C130)
- Straw Wattles (BMP C235)
- Materials on Hand (BMP C150)

All exposed cut and fill slopes will be roughened and seeded as soon as possible after disturbance. Straw wattles will be placed along fill slopes greater than 25 feet in length to reduce velocity and spread flow of rill and sheet runoff. Straw wattles will be spaced between 10 and 25 feet apart at regular intervals along the slope depending on slope length and steepness. Straw wattles will be installed after fill is complete and the slope is tracked in accordance with BMP C-130, prior to seeding. Quantities of erosion prevention and sediment control materials will be kept onsite at all times to be used in emergency situations.

### **Element #6 – Control Pollutants**

All pollutants, including waste materials that occur on-site shall be handled and disposed of in a manner that does not cause contamination of stormwater, groundwater or surface water. Good housekeeping and preventative measures will be taken to ensure that the site will be kept clean, well organized, and free of debris. If required, BMPs to be implemented to control specific sources of pollutants are discussed below. As an obligation independent of this instrument, the City of Vancouver requires that pollutants be controlled consistent with City codes and requirements including but not limited to VMC 14.24, Erosion Control; VMC 14.25, Stormwater Control; VMC 14.26, Water Resources Protection; VMC 20.760, Shoreline Management Area.

### **Vehicles, construction equipment, and/or petroleum product storage/dispensing:**

- All vehicles, equipment, and petroleum product storage/dispensing areas will be inspected regularly to detect any leaks or spills, and to identify maintenance needs to prevent leaks or spills.
- Onsite fueling tanks and petroleum product storage containers shall include secondary containment.
- Spill prevention measures, such as drip pans, will be used when conducting maintenance and repair of vehicles or equipment.
- In order to perform emergency repairs on site, temporary plastic will be placed beneath and, if raining, over the vehicle.
- Contaminated surfaces shall be cleaned immediately following any discharge or spill incident.

### **Element #7 – Maintain BMPs**

All temporary and permanent erosion and sediment control BMPs shall be maintained and repaired as needed to assure continued performance of their intended function. Maintenance and repair shall be conducted in accordance with each particular BMP's specifications. Visual monitoring of the BMPs will be conducted at least once every calendar week and within 24 hours of any rainfall event, that causes a discharge from the site. If the site becomes inactive, and is temporarily stabilized, the inspection frequency will be reduced to once every month.

All temporary erosion and sediment control BMPs shall be removed within 30 days after the final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment shall be removed or stabilized on site. Disturbed soil resulting from removal of BMPs or vegetation shall be permanently stabilized.

### **Element #8 – Manage the Project**

Erosion and sediment control BMPs for this project have been designed based on the following principles:

- Design the project to fit the existing topography, soils, and drainage patterns.
- Emphasize erosion control rather than sediment control.
- Minimize the extent and duration of the area exposed.
- Keep runoff velocities low.
- Retain sediment on site.

- Thoroughly monitor site and maintain all ESC (Erosion and Sediment Control) measures.
- Schedule major earthwork during the dry season.

### **B.1.2.2 Planting Specifications**

Pending permit approval, portions of the bank site will be graded and prepared for planting in fall of 2010 as discussed above. Trees, shrubs and seed mixes are anticipated to be planted in fall of 2010 and spring of 2011. Emergent plugs will be planted in the spring of 2011 within the waterfowl exclosures (species quantities and densities are listed on **Figure B-5**; a detail of the waterfowl exclosures and other typicals is included in **Figure B-13**). All of the tree and shrub species listed on **Figure B-5** are also listed in the City of Vancouver's native plant list, with the exception of Hooker willow (*Salix hookeriana*) a native species commonly used in wetland restoration projects. The Sponsor will maintain the plants immediately after they are installed and will maintain the bank site throughout its active life per the conditions of this instrument.

The planting plan for the 1.60 acre Port mitigation site involved seeding upland and wetland areas, installing emergent wetland plants, and installing woody trees and shrubs.<sup>4</sup> Before installing woody vegetation and seeding/planting of wetland emergent species, the entire wetland and buffer mitigation areas disturbed through the grading activities were hydro-seeded with a native grass seed and Regreen mix. This seeding prevented soil erosion and establishment of invasive species.

The proposed bank site is designed to develop into a mosaic of forested, scrub-shrub, emergent, and aquatic bed wetland areas. The active floodplain will develop into forested areas vegetated with black cottonwood, red alder, Oregon ash, black hawthorn, and Oregon white oak. Active floodplain in the BPA easement will be planted with common snowberry and Nootka rose to avoid interference of trees with the overhead power lines. The palustrine-forested wetland will grow into an Oregon ash and black cottonwood-dominated wetland with Pacific willow as a subordinate tree species. Pacific willow will be a subordinate species in the scrub-shrub wetland community. The palustrine scrub-shrub community will be dominated by Hooker willow and Columbia willow (see **Figure B-5**).

#### **B.1.2.2.1 Site Preparation for Planting**

Cattle will be removed from the site during the spring of 2010 (estimated April/May) with sufficient lead time to allow for site preparation activities, including site preparation as discussed below, marking the existing wetland and buffer edges, installing erosion and sediment control materials on site, construction fencing around the drip-line of existing trees, and installing necessary construction access and construction BMPs and erosion control measures, as detailed above. In addition, invasive species within the existing Palustrine Forested Wetland and Active Floodplain will be managed to remove the existing understory of Himalayan Blackberry (*Rubus*

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<sup>4</sup> Additional information regarding the construction and installation of the Port mitigation site can be found in the *Conceptual Wetland Mitigation Plan Port of Vancouver Parcel 8 Development*, dated November 2006, which is located in the Resource Folder

*discolor*) The blackberry is anticipated to be removed using handheld equipment. Reed canarygrass (*Phalaris arundinacea*) and other invasive species will be controlled on site prior to planting as well.

After the cattle have been removed from the site, the reed canarygrass will be allowed to grow for 4 to 6 weeks, after which it will be sprayed with glyphosate. Herbicide applications will be utilized in compliance with existing licenses and application rates, and will be applied by a licensed applicator. Following the initial spraying, portions of the site will be disked and harrowed to prepare the site for grading and planting. Disking and harrowing is scheduled to occur approximately 2.5 months after cattle have been removed from the site. Spot spraying with glyphosate may occur thereafter, prior to grading, depending on the effectiveness of the initial glyphosate application. In addition, invasive species control is also addressed in Section B.1.2.4 Maintenance, of this Appendix.

Following herbicide application, the areas to be excavated to create wetland will also be plowed and disked to loosen compacted sod, and to create a planting environment that minimizes competition and favors the plants and seed mixes to be installed on site.

Once site preparation has occurred, but prior to grading, silt and construction fencing will be installed and the earthen berm will be constructed.

At the time of inclusion of the 1.60 acre Port mitigation site into the bank project, invasive species such as reed canarygrass, had become the dominate species within each habitat area. Invasive species control was immediately implemented through spraying and mowing to reduce and suppress the spread of reed canarygrass into other habitat areas, as well as allow native plants to eventually establish a canopy that shades out reed canarygrass. Additionally, new shrub and tree plantings were installed to supplant those existing plantings that had not survived or seemed to be stressed in their current conditions.

Consistent management of invasive species will occur on the 1.60 acre Port mitigation site, on the same level that the bank site is currently managed at. Efforts to reduce reed canarygrass as the dominant invasive species across the site will improve the success of woody shrub and tree species that have been planted to specifically shade out reed canarygrass and other invasives such as tansy ragwort and Himalayan blackberry. Continued herbicide application and mowing of the Port mitigation area will allow reduce competition of invasives and allow native species to establish creating a more sustainable and fully functioning system.

### **Bareroot Specifications**

1. Bareroot species will be grown by a local native plant nursery.
2. Bareroot stock will be 2-0 stock or similar, depending on availability from grower.
3. The bareroot stock will have well-developed roots and sturdy stems, with an appropriate root-to-shoot ratio.
4. Bareroot stock will be kept cool and moist prior to being planted.
5. No damaged or desiccated roots or diseased plants will be accepted.
6. Unplanted bareroot stock will be properly stored at the end of each planting day to prevent drying out.

7. The project biologist will be responsible for inspecting bareroot stock prior to and during planting and culling unacceptable plant materials.

### **Willow Cutting Specifications**

1. Cuttings will be purchased from a local native plant nursery or cut from local sources.
2. Cuttings will be a minimum of 3-feet long and greater than ¼-inch diameter.
3. Cuttings will be kept cool and moist prior to being planted.
4. Cutting stock should be installed within approximately 1 week of cutting.
5. Unplanted cutting stock will be properly stored at the end of each planting day to prevent desiccation.
6. The project biologist will be responsible for inspecting cutting stock prior to and during planting and culling unacceptable plant materials.

### **Seeding**

Seed mixes will either be broadcast or drilled in on site following final grading and planting. All graded areas such as newly created forested and scrub-shrub mosaic wetland and active floodplain upland areas will be seeded. In addition palustrine forested and scrub-shrub wetland enhancement areas and emergent areas in the BPA easement that are initially dominated by reed canarygrass will be seeded. Rates of broadcast vary depending on seeding method and habitat type. Roughly, 25 lbs of seed per acre is anticipated to be seeded. Variations from this estimate will be noted in the as-built report.

The following species will be planted as plugs during spring of 2011 within the waterfowl enclosures at a minimum density of one plug per square foot within the enclosures:

American water-plantain (*Alisma plantago-aquatica*)  
Wapato (*Sagittaria latifolia*)  
Simple-stem bur-reed (*Sparganium emersum*)

### **Tree Protection**

All of the existing trees on site will be preserved and no grading will occur within the critical root zone<sup>5</sup> of any existing tree (**Figure B-11**). Although most of the forested areas are higher in elevation than the areas to be graded, temporary orange construction fencing or similar visible protective fencing will be installed around the critical root zones of individual trees or forested areas within 50 feet of the proposed grading. The fenced area around the trees will be protected from all grading activity and the fencing will be maintained for the duration of the grading.

The following tree protection standards will be implemented during project construction:

- Visible protective fencing will be installed around the critical root zone of individual trees or forested areas within 50 feet of proposed grading. The fencing will be installed prior to grading and will be maintained for the duration of the grading and planting.

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<sup>5</sup> The critical root zone is generally defined as the dripline of the tree's canopy, where the majority of the roots are located. The dripline is determined by extending an imaginary line from the outermost leaves to the ground; the imaginary circle on the ground is the critical root zone.

Erosion control fencing may take the place of tree protection fence where the two overlap.

- No equipment staging areas, vehicle parking, fueling, equipment maintenance, or soil deposits will occur within the fenced, protected area of any tree.
- No construction equipment will be operated within the fenced, protected area of any tree.
- No objects that could cause damage will be attached to any tree.

### **Planting Specifications:**

1. Using a tree shovel or similar tool, place the bareroot species in the planting holes so that their roots are able to extend down entirely and do not bend upward or circle inside the hole. Position the root crowns of the bareroot species so that they are at or slightly above the level of the surrounding soil (**Figure B-13**).
2. Using a metal planting bar or similar tool, dibble a hole for the willow cuttings. Plant the cuttings approximately one-third of their length below ground, with the leaf nodes pointing up (**Figure B-13**).
3. Gently compact the soil around the planted species to eliminate air spaces.
4. Install seedling protection tubes to protect from herbivory. Secure with stakes (**Figure B-13**).
5. Emergent plugs will be planted during the spring of 2011, within the 20 waterfowl exclosures located within the rooting zone of the palustrine aquatic bed habitat on site. A specification for the waterfowl exclosures is located on **Figure B-13**, Typical. Emergent species to be planted within the waterfowl exclosures include *Alisma plantago-aquatica*, *Sparganium emersum*, and *Sagittaria latifolia*.

### **B.1.2.3 Habitat Structure Installation**

Habitat structures, such as brush piles, large woody debris, waterfowl exclosures and cavity trees will be installed during fall of 2010, after grading is finalized, but before the site has been seeded.

Twenty-four Purple Martin gourd nests will be installed on 15-foot galvanized steel telescoping poles located at least 6 feet above the water within the permanent palustrine aquatic bed habitat areas during the winter/spring of 2011 to allow for use during the spring of 2011 (**Figure B-13**). Poles shall be equipped with predator guards.

### **B.1.2.4 Maintenance**

General maintenance will be performed throughout the year to address conditions that may limit the success of the bank and attaining the performance standards and objectives in the *Mitigation Bank Instrument Appendices* (Appendix C of this document). The Sponsor is responsible for all site maintenance activities throughout the establishment period of the bank including activities

listed in Appendix F, section F.1.5. Anticipated maintenance activities fall into two main categories and include, but are not limited to, vegetative maintenance and general maintenance. Vegetative maintenance includes such activities as watering, replanting failed plants to meet performance standards, repairing any areas subject to erosion, controlling invasive plants, mowing, and deterring herbivores such as voles, beaver, and deer. Mowing is anticipated to occur approximately three times per year during the growing season until the native woody species establish sufficient cover that prevents frequent mowing. Mowing is anticipated to occur at least through year 3, and may extend beyond that, depending on plant vigor and access. Spraying weeds at the base of plants to discourage voles and root competition may occur for up to two years following planting. General maintenance activities include: repairing fences, re-installing signs, maintaining Purple Martin nests, and removing garbage. All maintenance activities will be documented in monitoring reports.

#### **B.1.2.4.1 Invasive Species Control**

Weed control will occur as needed, up to 3 times per growing season, and will target reed canarygrass (*Phalaris arundinacea*), tansy ragwort (*Senecio jacobea*), Himalayan blackberry (*Rubus discolor*), any invasive knotweed, and bull and Canada thistle (*Cirsium vulgare* and *C. arvense*). Japanese knotweed (*Polygonum cuspidatum*), English ivy (*Hedera helix*), and purple loosestrife (*Lythrum salicaria*) will be immediately eradicated if found on site. Invasive control will follow methods recommended by the Clark County Weed Management Department and be carried out in accordance with the City of Vancouver regulations. Invasive plants will be controlled by repeated spraying of Washington State Department of Agriculture-approved herbicides. Weed control will occur prior to planting, and will continue throughout the active life of the bank. The anticipated schedule for controlling reed canarygrass and other invasive plant species is as follows:

1. Treat the site with a 2 quart per acre concentration of glyphosate solution to target emerging reed canarygrass approximately four to six weeks after cattle have been removed from the site.
2. Continue reed canarygrass control by spot spraying with a 1.5 percent glyphosate solution, as necessary.
3. Reed canarygrass-dominated areas may be mowed up to three times per season in addition to spraying.

#### **B.1.2.5 Erosion and Sediment Control (ESC) Plan**

A copy of the Stormwater Pollution Prevention Plan (SWPPP), prepared in compliance with NPDES permit requirements, is attached in full in the Resource Folder as **Attachment 6**. This SWPPP was prepared by Ecological Land Services, Inc., and submitted to the City of Vancouver as a part of the grading permit application required to implement the Columbia River Wetland Mitigation Bank. All conditions of the SWPPP will be complied with.

Construction activities will include grading and excavating uplands to establish wetland hydrology followed by planting of native vegetation. 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.

#### **B.1.2.5.1 Proposed Construction Activities**

##### **Coordination with Tribes and Agencies on Inadvertent Discovery of Cultural Resources**

In the event any archaeological or historic materials are encountered during project activity, work in the immediate area (initially allowing for a 100' buffer; this number may vary by circumstance) must stop and the following actions taken:

1. Implement reasonable measures to protect the discovery site, including any appropriate stabilization or covering; and
2. Take reasonable steps to ensure the confidentiality of the discovery site; and,
3. Take reasonable steps to restrict access to the site of discovery.

The project proponent will notify the concerned Tribes and all appropriate city, county, state, and federal agencies, including the Washington Department of Archaeology and Historic Preservation. The agencies and Tribe(s) will discuss possible measures to remove or avoid cultural material, and will reach an agreement with the project proponent regarding actions to be taken and disposition of material.

If human remains are uncovered, appropriate law enforcement agencies shall be notified first, and the above steps followed. If the remains are determined to be Native, consultation with the affected Tribes will take place in order to mitigate the final disposition of said remains.

See the Revised Code of Washington, Chapter 27.53, "Archaeological Sites and Resources," for applicable state laws and statutes. See also Washington State Executive Order 05-05, "Archaeological and Cultural Resources." Additional local, state and federal law(s) may also apply.

##### **Phasing of Construction**

The construction project is being phased to the extent practicable in order to prevent soil erosion, and, to the maximum extent possible, the transport of sediment from the site during construction. As this project site is located 2000' west of a residential area, the project will be managed according to the following key project components:

- Revegetation of exposed areas and maintenance of that vegetation shall be an integral part of the clearing activities during each phase of construction, per the Scheduling BMP (C 162).

##### **Seasonal Work Limitations**

From October 1 through April 30, clearing, grading, and other soil disturbing activities shall only be permitted if shown to the satisfaction of the local permitting authority that silt-laden runoff will be prevented from leaving the site through a combination of the following:

- Site conditions including existing vegetative coverage, slope, soil type, and proximity to receiving waters; and
- Limitations on activities and the extent of disturbed areas; and
- Proposed erosion and sediment control measures.
- Based on the information provided and/or local weather conditions, the local permitting authority may expand or restrict the seasonal limitation on site disturbance.

The following activities are exempt from the seasonal clearing and grading limitations:

- Routine maintenance and necessary repair of erosion and sediment control BMPs.
- Activities where there is 100 percent infiltration of surface water runoff within the site in approved and installed erosion and sediment control facilities.

### **Coordination with Utilities and Other Jurisdictions**

Care has been taken to coordinate with the local jurisdiction in preparing the SWPPP and scheduling the construction work.

### **Inspection and Monitoring**

All BMPs 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.
- A post-construction monitoring report is required to be submitted to the U.S. Army Corps of Engineers, Seattle District, to document that no historic properties are affected on-site. The report should include before, during and after photographs from a fixed, geo-referenced point.

## **Maintaining an Updated Construction SWPPP**

- The SWPPP shall be retained onsite or within reasonable access to the site.
- The SWPPP shall be modified whenever there is a change in the design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the state.
- The SWPPP shall be modified if, during inspections or investigations conducted by the owner/operator, or the applicable local or state regulatory authority, it is determined that the SWPPP is ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site. The SWPPP shall be modified as necessary to include additional or modified BMPs designed to correct problems identified. Revisions to the SWPPP shall be completed within seven (7) days following the inspection.

### **B.1.2.5.2 Construction Phasing and BMP Implementation**

The BMP implementation schedule will be driven by the construction schedule. The project site is located 2000' west of a residential area. As such, the dry season is considered to be from May 1 to September 30 and the wet season is considered to be from October 1 to April 30. The following schedule will be implemented for construction of the Columbia River Wetland Mitigation site. Some activities may overlap or be performed concurrently with other activities:

- Mobilize and store all ESC and soil stabilization products (as soon as possible following permit issuance and in anticipation of construction – likely May 2010 – dry season).
- Install ESC measures where applicable (dry season prior to beginning construction – June/July 2010).
- Install stabilized construction entrance (Prior to grading on site – July 2010 – during the dry season).
- Create earthen berm between existing wetlands and proposed created wetlands (Beginning of grading on site – July/August 2010. Dry season).
- Begin grading (As soon as possible depending on water levels on site – July/August 2010. Dry season).
- Apply temporary and permanent soil stabilization BMPs to exposed areas (Both during dry season, during construction, but can also extend past construction into wet season, October 2010).

- Install straw wattles along fill slopes, if necessary (During construction – dry season, if needed).
- Apply remaining permanent soil stabilization BMPs (Post construction – likely to be wet season, but could still be during September (dry season) if construction ends prior to September 30, 2010).
- Remove temporary soil stabilization BMPs once exposed areas attain 80 percent coverage and stabilize any accumulated soil (This depends on timing of grading, how quickly it can be accomplished, and how quickly exposed areas revegetate. This will likely occur during the dry season of 2011).

### **B.1.2.5.3 Site Inspections and Monitoring**

Monitoring includes visual inspection, monitoring for water quality parameters of concern, and documentation of the inspection and monitoring findings in a site log book. A site log book will be maintained for all onsite construction activities and will include:

- A record of the implementation of the SWPPP and other permit requirements;
- Site inspections; and,
- Stormwater quality monitoring.

For convenience, the inspection form and water quality monitoring forms included in this SWPPP include the required information for the site log book. This SWPPP may function as the site log book if desired, or the forms may be separated and included in a separate site log book. However, if separated, the site log book but must be maintained onsite or within reasonable access to the site and be made available upon request to Ecology or the local jurisdiction.

### **Site Inspection**

All BMPs will be inspected, maintained, and repaired as needed to assure continued performance of their intended function. The inspector will be a Certified Erosion and Sediment Control Lead (CESCL) per BMP C160. The name and contact information for the CESCL is provided in Section 5 of the SWPPP in the Resource Folder.

Site inspection will occur in all areas disturbed by construction activities and at all stormwater discharge points. Stormwater will be examined for the presence of suspended sediment, turbidity, discoloration, and oily sheen. The site inspector will evaluate and document the effectiveness of the installed BMPs and determine if it is necessary to repair or replace any of the BMPs to improve the quality of stormwater discharges. All maintenance and repairs will be documented in the site log book or forms provided in this document. All new BMPs or design changes will be documented in the SWPPP as soon as possible.

### **Site Inspection Frequency**

Site inspections will be conducted at least once a week and within 24 hours following any rainfall event which causes a discharge of stormwater from the site. For sites with temporary stabilization measures, the site inspection frequency can be reduced to once every month.

### **Site Inspection Documentation**

The site inspector will record each site inspection using the site log inspection forms provided in Appendix E of the SWPPP. The site inspection log forms may be separated from this SWPPP document, but will be maintained onsite or within reasonable access to the site and be made available upon request to Ecology or the local jurisdiction.

#### **B.1.2.5.4 Stormwater Quality Monitoring Turbidity Sampling**

Monitoring requirements for the proposed project will include either turbidity or water transparency sampling to monitor site discharges for water quality compliance with the 2005 Construction Stormwater General Permit (Appendix D of the SWPPP). Sampling will be conducted at all discharge points at least once per calendar week.

Turbidity or transparency monitoring will follow the analytical methodologies described in Section S4 of the 2005 Construction Stormwater General Permit (Appendix D of the SWPPP). The key benchmark values that require action are 25 NTU for turbidity (equivalent to 32 cm transparency) and 250 NTU for turbidity (equivalent to 6 cm transparency). If the 25 NTU benchmark for turbidity (equivalent to 32 cm transparency) is exceeded, the following steps will be conducted:

1. Ensure all BMPs specified in this SWPPP are installed and functioning as intended.
2. Assess whether additional BMPs should be implemented, and document revisions to the SWPPP as necessary.
3. Sample discharge location daily until the analysis results are less than 25 NTU (turbidity) or greater than 32 cm (transparency).

If the turbidity is greater than 25 NTU (or transparency is less than 32 cm) but less than 250 NTU (transparency greater than 6 cm) for more than 3 days, additional treatment BMPs will be implemented within 24 hours of the third consecutive sample that exceeded the benchmark value. Additional treatment BMPs to be considered will include, but are not limited to, off-site treatment, infiltration, filtration and chemical treatment.

If the 250 NTU benchmark for turbidity (or less than 6 cm transparency) is exceeded at any time, the following steps will be conducted:

1. Notify Ecology by phone within 24 hours of analysis (see Section 5.0 of this SWPPP for contact information).
2. Continue daily sampling until the turbidity is less than 25 NTU (or transparency is greater than 32 cm).
3. Initiate additional treatment BMPs such as off-site treatment, infiltration, filtration and chemical treatment within 24 hours of the first 250 NTU exceedance.
4. Implement additional treatment BMPs as soon as possible, but within 7 days of the first 250 NTU exceedance.
5. Describe inspection results and remedial actions taken in the site log book and in monthly discharge monitoring reports as described in Section 7.0 of this SWPPP.

## **APPENDIX C**

### **BANK OBJECTIVES AND PERFORMANCE STANDARDS**

#### **APPENDIX C.1:**

##### **C.1.1. Requirements for Bank Objectives and Performance Standards**

A. Implementation of the Columbia River Wetland 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, or 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 1.01 credits attributable to the 1.60 acre Port mitigation site, added to the bank via amendment to the bank instrument, was subdivided into the most relevant performance standards (see PS 3F and 3K, Appendix D, Table D-3). 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. As an obligation independent of this Instrument the City of Vancouver requires that activities on the bank site also comply with the Vancouver Municipal Code including, but not limited to, VMC 20.740, Critical Areas Protection, VMC 20.450, Open Space Districts, and 20.760, Shoreline Management Areas.

##### **C.1.2 Bank Objectives and Performance Standards**

###### **Objective 1: Protect Aquatic Ecosystem Functions**

Permanently protect aquatic ecosystem functions at the Bank by instituting the Instrument and implementing a conservation easement with permanent funding for site stewardship. Both Exhibit A, Bank Legal Description, and the Conservation Easement placed on the bank property, have been revised to include the 1.60 acre Port mitigation site, added to the bank via amendment. 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.

<b>Performance Standard</b>	<b>Documentation</b>
1A) Complete the development of an appropriate Mitigation Banking Instrument and Appendix.	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 an IRT-approved conservation easement on the property.	Provide the IRT a copy of the signed, IRT-approved conservation easement and evidence that it has been recorded with the Clark County Auditor 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 and fund a Long-Term Management and Maintenance Endowment Fund escrow account, and develop an escrow agreement, all pursuant to the requirements established in Article III.C2. 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**

Create wetland hydrology in the excavated portions of the bank site. Maintain existing wetland hydrology on remainder of the site.

<b>Performance Standard</b>	<b>Documentation</b>
2A) Grading completed according to IRT approved plans.	As-built drawings showing completed grading are approved by the IRT.
2B) A minimum of 108 acres of the site will have wetland hydrology present at 3 years following approval of As-built grading plan.	To demonstrate wetland hydrology, soil will be saturated to the surface, or there will be free water in soil pits at 12 inches or less below the soil surface for at least 10% of the growing season, where the growing season is defined as March 1 through October 31.  A monitoring report showing data from wells and soil pits sufficient to document the extent of wetland hydrology on site is approved by the IRT.
2C) A minimum of 108 acres of wetland will be present on the site at 5 and 10 years following approval of As-built grading plan.	The wetlands on site will be delineated according to the 1987 Corps of Engineers Delineation Manual and appropriate supplements as well as the current Washington State wetland delineation manual in effect at the time of delineation. Wetland delineation report is approved by the IRT.

**Objective 3: Vegetation**

Establish a mosaic of native wetland communities, with high interspersions of wetland and upland habitat types on site.

*Note: “Cover” is used in this MBI to mean the actual proportion of the ground surface of the sample plot that is covered by a vertical projection of foliage (by single species or defined group of species) as viewed from above (or below for taller shrubs and trees), or by bare substrate.*

**Performance Standards for All Areas of the Site:**

<b>Performance Standard</b>	<b>Documentation</b>
3A) Planting of site completed 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. Include a species list, plant spacing and density, and final planted acreages of vegetative community types. Portions of the BPA easement are included in planting area. Demonstrate to the IRT that a compliant and acceptable modified financial assurance has been established.
3B) Within each habitat type (PAB, PEM, PSS, PFO, AFP) including where those habitat types occur under the BPA easement, Himalayan blackberry, tansy ragwort, Canada thistle, and bull thistle do not collectively exceed 15% cover at 3, 5, 7, and 10 years following approval of As-built planting plan. Cover is not averaged for the entire site – maximum applies to each habitat type. Additional species may be added to this list based on site conditions, as negotiated between the Sponsor and IRT.	Monitoring reports documenting non-native invasive species presence and percent cover approved by IRT. Document the percent cover of invasives in each data plot at years 1, 3, 5, 7, and 10.
3C) Within each habitat type (PAB, PEM, PSS, PFO, AFP,) including where those habitat types occur under the BPA easement, cover of reed canary grass and meadow foxtail does not collectively exceed 30% at 3, 5, 7, and 10 years following approval of As-built planting plan. Cover is not averaged for the entire site – maximum applies to each habitat type.	Monitoring reports documenting non-native invasive species presence and percent cover approved by IRT. Document the percent cover of invasives in each data plot at years 1, 3, 5, 7 and 10.
3D) Over the entire site, including the BPA easement, zero tolerance of Japanese knotweed (and related hybrids), purple loosestrife, and English ivy colonization is maintained. Map any specimens and eradicate during growing season of same year. Additional species may be added to this list based on site conditions, as negotiated between the Sponsor and IRT.	Monitoring reports documenting identification and eradication approved by the IRT. Inventory annually and include in monitoring reports at years 1, 3, 5, 7, and 10.

**Performance Standards for Palustrine Aquatic Bed Wetland:**

<b>Performance Standard</b>	<b>Documentation</b>
3E) <del>Palustrine Aquatic Bed areas show an increase in species richness over baseline conditions (baseline data is collected during summer of 2010) at 3, 5, 7, and 10 years, following approval of As-built planting plan.</del>	Note: It was determined by the IRT that Performance Standard 3E did not adequately measure the increase in function within the PAB habitat area. In PAB habitat area, functional lift came from removing cattle and continuing to control invasive species. Therefore, this performance standard was deleted and credits were distributed among performance standards 3B, 3C, & 3D which will measure the increase in function within the PAB habitat area.

**Performance Standards for Palustrine Emergent Wetland:**

<b>Performance Standard</b>	<b>Documentation</b>
3F) In the Palustrine Emergent Wetland, including those PEM areas within the BPA easement, native emergent plant species have a minimum of 40% cover at 1 year, 50% cover at 3 years, and 60% cover at 5, 7, and 10 years following approval of As-built planting plan.	Monitoring reports documenting native species presence and percent cover approved by IRT. Document baseline condition in 2010 and change over baseline emergent cover in years 1, 3, 5, 7 and 10.
3G) The moisture index, as defined in Appendix F, within the Palustrine Emergent Wetland is less than 3.0.	Monitoring reports documenting species occurrence and moisture index approved by the IRT. Document the moisture index in each data plot within the emergent area at years 1, 3, 5, 7 and 10.

**Performance Standards for Palustrine Scrub-shrub Wetland:**

<b>Performance Standard</b>	<b>Documentation</b>
3H) In the Palustrine Scrub-shrub Wetland, native woody species have a minimum of 20% cover at 3 years, 40% cover at 5 years, 50% cover at 7 years, and 60% cover at 10 years following approval of the As-built planting plan.	Monitoring reports documenting species occurrence approved by the IRT. Document the percent cover of native woody vegetation in years 3, 5, 7, and 10.
3I) The moisture index in the Palustrine Scrub-shrub Wetland is equal to or less than 3.0.	Monitoring reports documenting species occurrence and moisture index approved by the IRT. Document moisture index for years 3, 5, 7, and 10.

**Performance Standards for Palustrine Forested Wetland:**

<b>Performance Standard</b>	<b>Documentation</b>
3J) Native trees (including both planted and volunteer) in the Palustrine Forested Wetland have a stem density of at least 300 stems/acre at 3 years, 260 stems/acre at 5 years, 230 stem/acre at 7 years, and 200 stems/acre at 10 years following approval of the As-built planting plan.	Monitoring reports documenting tree density approved by the IRT. Stem density for trees within plots will be recorded for years 3, 5, 7, and 10. Trees are defined as those species that have the potential to reach greater than 20 feet in height at maturity.
3K) In the Palustrine Forested Wetland, native woody species have a minimum of 15% cover at 3 years, 35% cover at 5 years, 45% cover at 7 years, and 55% cover at 10 years following approval of the As-built planting plan.	Monitoring reports documenting species occurrence and cover approved by the IRT. Document percent cover in each stratum within the Palustrine Forested Wetland (tree, shrub, herbaceous) in years 3, 5, 7, and 10.
3L) In the Palustrine Forested Wetland, the moisture index is equal to or less than 3.0.	Monitoring reports documenting species occurrence and moisture index approved by the IRT. Document moisture index in monitoring reports for years 3, 5, 7, and 10.

**Performance Standards for Active Floodplain:**

<b>Performance Standard</b>	<b>Documentation</b>
3M) In the Active Floodplain, including those AFP areas within the BPA easement, native woody species have a minimum of 15% cover at 3 years, 35% cover at 5 years, 45% cover at 7 years, and 55% cover at 10 years following approval of As-built planting plan.	Monitoring reports documenting species occurrence and cover approved by the IRT. Document percent cover of native woody vegetation for year 3, 5, 7, and 10.

**Objective 4: Wildlife:**

Provide habitat for wildlife in the area by installing habitat features:

<b>Performance Standard</b>	<b>Documentation</b>
4A) Brush piles, cavity trees, nest boxes, and root wads installed according to IRT approved plan.	As-built drawings of habitat features are approved by the IRT.
4B) A minimum of 80 % of the original number of each type of habitat feature (cavity trees, rootwads and nest boxes) will be present at 10 years following approval of As-built plans.	Monitoring reports documenting location of habitat features approved by the IRT. Document location and use of the habitat features at year 10. Document annual maintenance of nest boxes.

**Damage to vegetation in BPA Easement Area:**

If activities of the Bonneville Power Administration, or any agent working on its behalf, result in removal of or damage to vegetation within the BPA easement that the Corps and Ecology, in consultation with the Sponsor and the IRT, determine has had a significant adverse impact on the quality of the aquatic functions, native vegetation, soils, or wildlife of the Bank, the Sponsor may request, pursuant to Article III.B. of the Instrument, and the Corps and Ecology, in consultation

with the IRT, may approve changes to the performance standards of the Bank. The expectation is that the Sponsor will be relieved of the obligation to establish, maintain, and monitor the performance standards applicable to BPA-damaged areas within the BPA easement, and approval of any Sponsor request for relief from the applicable performance standards will not be unreasonably withheld.

## 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 reflected in Appendix C, Section C.1.2, have been met.

B. A credit is defined as the increase in aquatic ecosystem functioning that would result from the establishment, re-establishment, rehabilitation, or enhancement of aquatic resources on the Bank site, which is equivalent to the aquatic ecosystem function of one acre of intact Category II wetland in western Washington. A credit represents the functional value and areal extent of a Category II wetland system, including forested, scrub-shrub, and emergent floodplain wetlands. Ratings for wetland Category are determined using the Washington State Wetland Rating System for Western Washington, revised (Ecology Publication # 04-06-025).

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**

<b>Bank Activity</b>	<b>Area (Acres) of Credit Generation</b>	<b>Credit Ratio (Activity Area: Universal Credit)</b>	<b>Anticipated Number of Credits</b>
Wetland Creation PSS/PFO	25.5	1:1	25.50
Wetland Creation PFO/PEM:	1.60	1:1	1.01*
Wetland Enhancement ½ to PSS ½ to PFO	59.75**	3:1	19.92
Wetland Enhancement PEM to PEM	9.72	4:1	2.43
Wetland Enhancement PAB	9.04	4:1	2.26
Plant Internal Active Floodplain to Forest	17.80	5:1	3.56
<b>Total</b>	<b>123.41</b>	<b>Varies-See Above</b>	<b>54.68</b>

\*0.59 out of 1.60 wetland mitigation credits generated in this area by wetland creation, were used to compensate for the Port of Vancouver’s Parcel 8 Development Project impacts to water quality and water quantity wetland functions (Ecology AO #5091). This credit was subtracted from the “Anticipated Number of Credits” available column of table D-1 at the time of inclusion

of this property via amendment to the bank instrument. This leaves 1.01 potential credits to be generated by the Bank in this habitat area.

\*\* This acreage includes existing PFO (6.03 acres) and existing PSS (1.91 acres)

Table D-2 provides an overview of changes in habitat type anticipated to result from Bank site construction.

**Table D-2: Change in Habitat Type  
Summary of Existing and Proposed Habitat Types**

	<b>Existing Acreage</b>	<b>Proposed Acreage</b>	<b>Activity Proposed</b>
Total Upland Area	67.75	40.65	Excavate Upland to Create Wetland
Total Wetland Area	87.71	114.81	Create Wetland from Upland
Total Bank Site Area	155.46	155.46	
<b>Wetland Area by Cowardin Classification:</b>			
PFO	6.16	45.44	Enhancement + Creation
PSS	1.94	44.04	Enhancement + Creation
PEM	69.27	15.36	Enhancement + Conversion to PSS/PFO
PAB	10.34	10.04	Enhancement
Total Wetland Area	87.71	114.88	

#### **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, and (2) no credits associated with the Year 10 performance standards may be awarded until at least 60% of all possible credits associated with Years 0 through 9 have been awarded.

B. The IRT will typically approve the award of credits according to the schedule in Table D-3, below. Credits may not be awarded sooner than specified in Table D-3, 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-3, 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 IRT may, at its discretion, 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 IRT can at its discretion 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 IRT. The IRT, in consultation 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.

F. If development of the industrial land to the east of the Bank provides adequate buffer protection on parcel 7, the setback on the Bank site along parcel 7 will be reduced from 150 feet to 100 feet in width, and the Sponsor shall be granted additional credit from the 50 foot area, based on the habitat type present, in accordance with the credit ratios in Table D-1.

**Table D-3 Credit Release Schedule**

Potential credits to be released - 54.68								
	Pre-Construction Credits	Year 0 Credits	Year 1 Credits	Year 3 Credits	Year 5 Credits	Year 7 Credits	Year 10 Credits	Total Credits
<b>Objective 1. Administrative Protections</b>								
1A MBI Signed	2.15							2.15
1B CE Recorded	2.15							2.15
1C Financial Assurances Completed	2.15							2.15
1D Long-Term M & M Fund Established	1.60							1.60
<b>Objective 2. Hydrology</b>								
2A Grading As-built		2.69						2.69
2B Establish WL Hydrology				5.34				5.34
2C Minimum Wetland Acreage					5.35		2.74	8.09
<b>Objective 3. Vegetation</b>								
3A Planting Plan As-built		2.68						2.68
3B Maximum All Invasives			0.58	0.81	0.53	0.63	0.17	2.72
3C Maximum 2 Invasives			0.58	0.81	0.53	0.63	0.17	2.72
3D Zero Tolerance Invasives			0.58	0.67	0.41	0.36	0.18	2.20
<del>3E PAB Species Richness *</del>								
3F PEM % Cover			1.07	0.67	0.54	0.54	0.13	2.95
3G PEM Moisture Index			0.27	0.27	0.27	0.27	0.13	1.21
3H PSS % Cover				1.07	0.54	0.80	0.13	2.54
3I PSS Moisture Index				0.27	0.27	0.27	0.13	0.94
3J Tree Density				0.81	0.54	0.80	0.13	2.28
3K PFO % Cover				0.98	0.71	0.97	0.23	2.89
3L PFO Moisture Index				0.27	0.27	0.27	0.13	0.94
3M AFF % Cover				0.81	0.54	0.67	0.13	2.15
<b>Objective 4. Wildlife</b>								
4A Habitat Features As-built		2.68						2.68
4B % of Habitat Features Remaining							1.61	1.61
<b>Total Credits Available in the Period</b>	<b>8.05</b>	<b>8.05</b>	<b>3.08</b>	<b>12.78</b>	<b>10.50</b>	<b>6.21</b>	<b>6.01</b>	<b>54.68</b>

Year 0 is the calendar year during which construction is completed and the as-built drawings are submitted by the Sponsor and approved by the IRT. Year 1 is the first year of site monitoring following approval of the as-built drawings.

## **APPENDIX E PROCEDURES FOR USE OF MITIGATION BANK CREDITS AND DEBIT USE**

### **APPENDIX E.1:**

#### **E.1.1. Service Area**

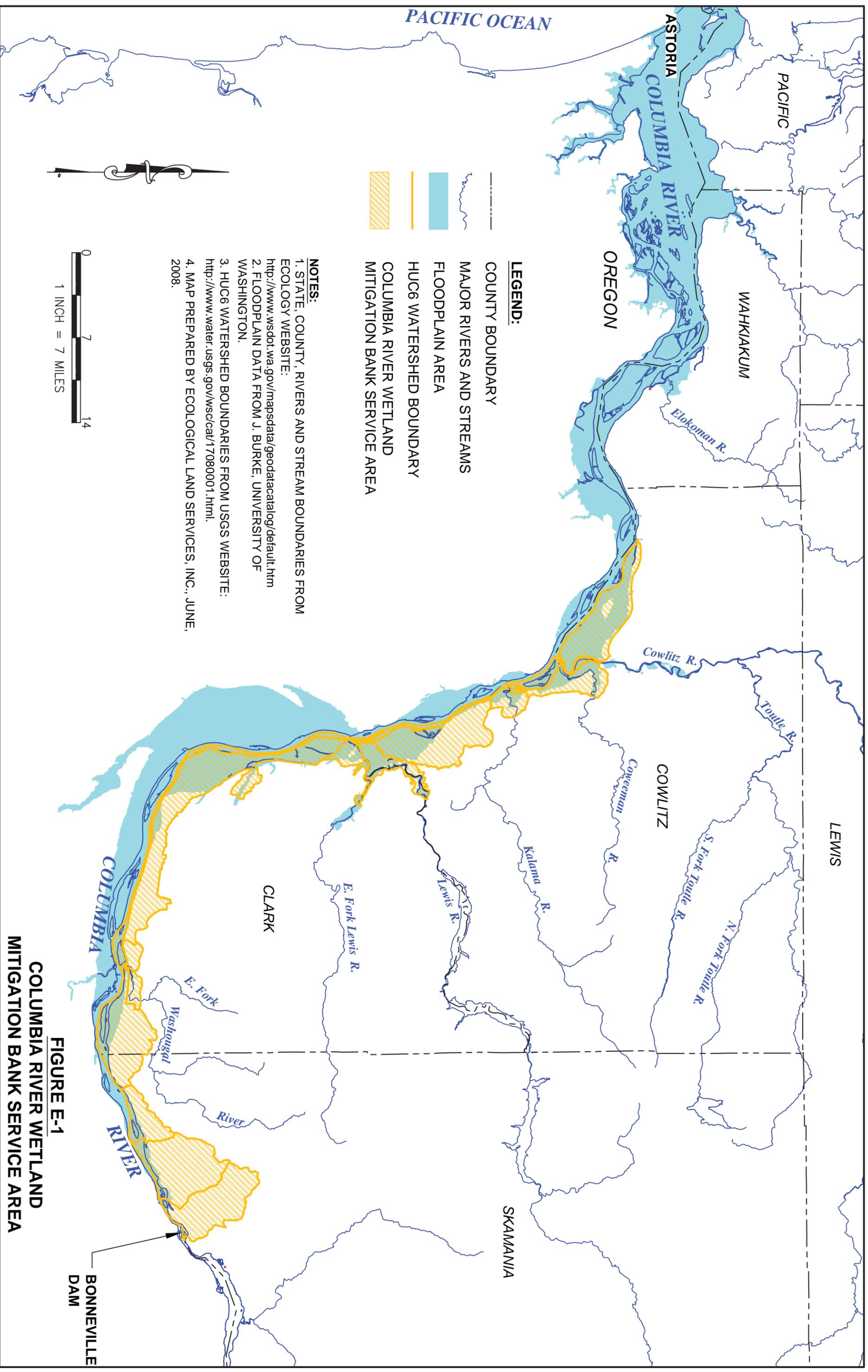
A. The Columbia River Wetland Mitigation Bank Service Area extends from river mile 56.5 (approximately the westernmost and downstream extent of the historical Cowlitz River Floodplain upstream to Bonneville Dam (approximately river mile 146), including the historical floodplain of the Columbia River and those portions of the watersheds that immediately adjoin and influence the historical Columbia River floodplain (and as further described in 1 and 2 below). The service area lies entirely on the north side of the Columbia River within Washington State. (See **Figures E-1 – Columbia River Wetland Mitigation Bank Service Area; E-2 – Columbia River Wetland Mitigation Bank Service Area – Clark County; E-3 – Columbia River Wetland Mitigation Bank Service Area – Cowlitz County; E-4 – Columbia River Wetland Mitigation Bank Service Area – Skamania County**).

In Clark County, the service area includes that area identified as the Columbia floodplain area by Washington Department of Ecology’s Watershed Characterization of Clark County (Ecology, 2007). Specifically, the report states “The Columbia floodplain area [which] is dominated by the influence of the Columbia River. It is located in a rain zone, has sub-surface water flow patterns which are influenced by groundwater discharge from the adjacent upland units and recharge from the river surface waters, geologic deposits consistent primarily of relatively recent river alluvium (sand and silt), and a riverine floodplain and valley walls formed by fluvial action of the river.” (Ecology, 2007). This area was mapped by Ecology, in cooperation with Clark County, and is shown on **Figure E-2**.

In Cowlitz County, the service area includes portions of the 6-digit Hydrologic Unit Code (HUC) mapping for the Cowlitz River – tidally influenced portions of (HUC 17080030402) to Willow Grove near Stella, Lecker Creek sub-basin (HUC 170800050802), portions of the Lower Coweeman River (HUC 170800050804), portions of the Lower Kalama River (HUC 170800030105), and all of the Burris Creek sub-basin (HUC 170800030106). See **Figure E-3** for mapping details.

In Skamania County, the service area includes only those portions of Latourell Creek (HUC 170800010704), Viento Creek (HUC 170800010703), Hamilton Creek (HUC 170800010702), and Tanner Creek (HUC 17080001701), that occur within Washington State as indicated on Figure E-4. (HUC boundaries cross state jurisdiction into Oregon, but the Oregon portion of the HUCs are not displayed on the map as the service area lies within Washington State jurisdiction).

The service area boundary in Cowlitz and Skamania Counties was determined using the following criteria:



- LEGEND:**
- COUNTY BOUNDARY
  - MAJOR RIVERS AND STREAMS
  - FLOODPLAIN AREA
  - HUC6 WATERSHED BOUNDARY
  - COLUMBIA RIVER WETLAND MITIGATION BANK SERVICE AREA

- NOTES:**
1. STATE, COUNTY, RIVERS AND STREAM BOUNDARIES FROM ECOLOGY WEBSITE: <http://www.wsdot.wa.gov/mapsdata/geodatacatalog/default.htm>
  2. FLOODPLAIN DATA FROM J. BURKE, UNIVERSITY OF WASHINGTON.
  3. HUC6 WATERSHED BOUNDARIES FROM USGS WEBSITE: <http://www.water.usgs.gov/wsc/cat/17080001.html>.
  4. MAP PREPARED BY ECOLOGICAL LAND SERVICES, INC., JUNE, 2008.

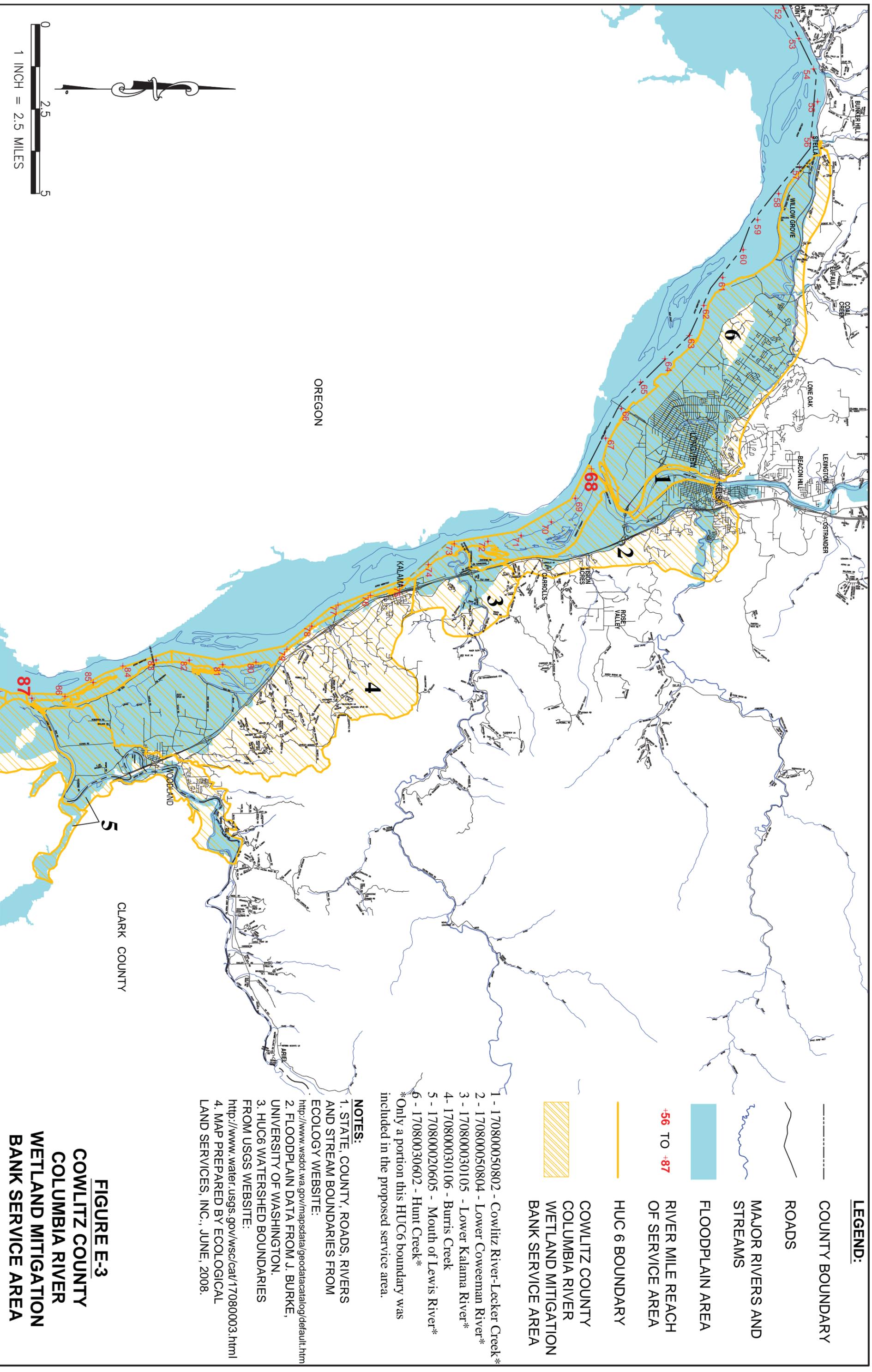


**FIGURE E-1**

**COLUMBIA RIVER WETLAND MITIGATION BANK SERVICE AREA**

**BONNEVILLE DAM**





**LEGEND:**

--- COUNTY BOUNDARY

--- ROADS

MAJOR RIVERS AND STREAMS

FLOODPLAIN AREA

RIVER MILE REACH OF SERVICE AREA

HUC 6 BOUNDARY

COWLITZ COUNTY COLUMBIA RIVER WETLAND MITIGATION BANK SERVICE AREA

1 - 170800050802 - Cowlitz River-Lecker Creek\*

2 - 170800050804 - Lower Coweman River\*

3 - 170800030105 - Lower Kalama River\*

4 - 170800030106 - Burris Creek

5 - 170800020605 - Mouth of Lewis River\*

6 - 17080030602 - Hunt Creek\*

\*Only a portion this HUC6 boundary was included in the proposed service area.

**NOTES:**

1. STATE, COUNTY, ROADS, RIVERS AND STREAM BOUNDARIES FROM ECOLOGY WEBSITE:

<http://www.wsdot.wa.gov/mapsdata/geodata/catalog/default.htm>

2. FLOODPLAIN DATA FROM J. BURKE, UNIVERSITY OF WASHINGTON.

3. HUC6 WATERSHED BOUNDARIES FROM USGS WEBSITE:

<http://www.water.usgs.gov/wsc/cat/17080003.html>

4. MAP PREPARED BY ECOLOGICAL LAND SERVICES, INC., JUNE, 2008.

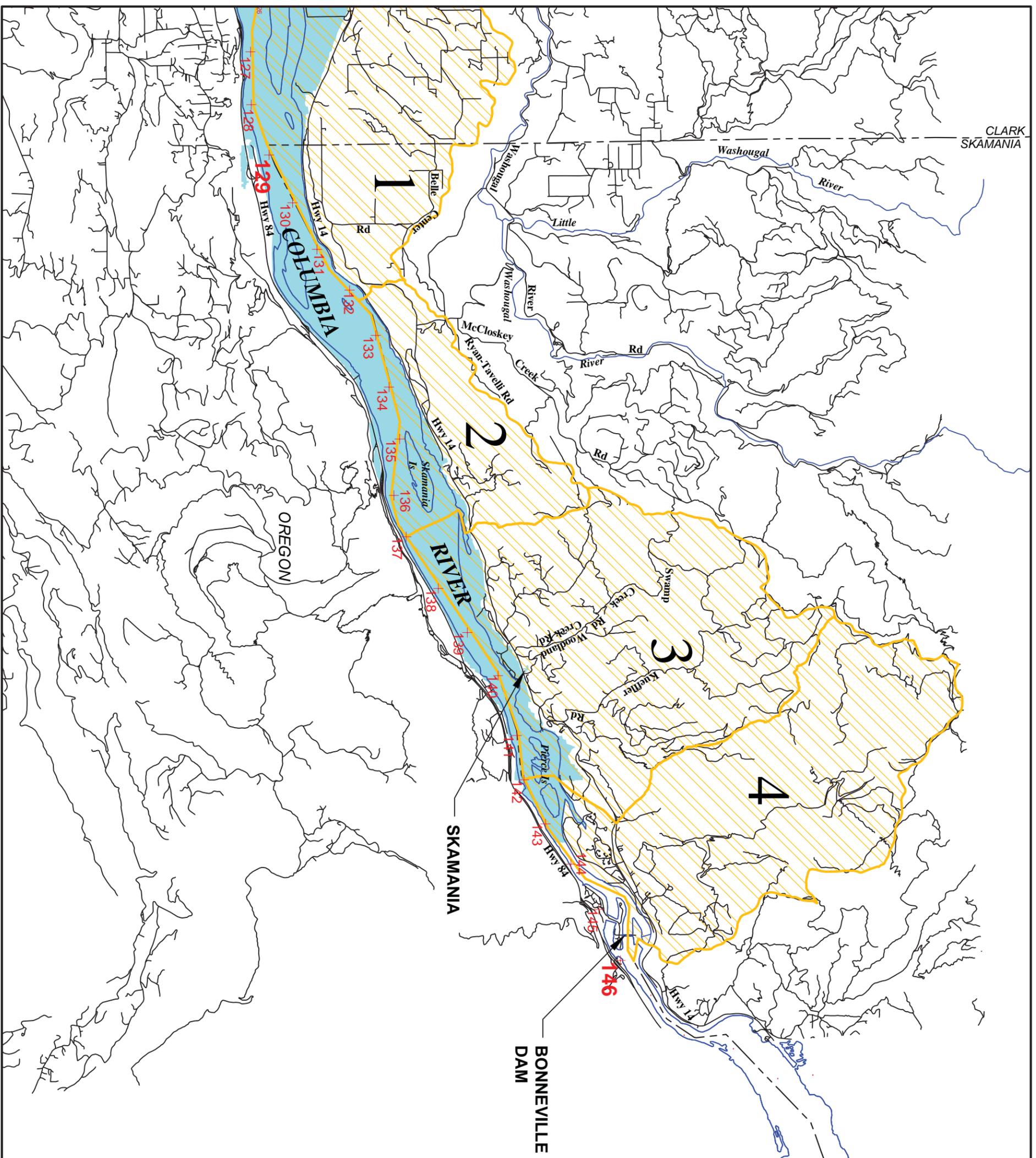
CLARK COUNTY

OREGON

**FIGURE E-3**

**COWLITZ COUNTY COLUMBIA RIVER WETLAND MITIGATION BANK SERVICE AREA**

0 2.5 5  
1 INCH = 2.5 MILES



**LEGEND:**

- COUNTY BOUNDARY
- ROADS
- MAJOR RIVERS AND STREAMS
- FLOODPLAIN AREA
- RIVER MILE REACH OF SERVICE AREA
- +129 TO +146
- HUC 6 BOUNDARY
- SKAMANIA COUNTY COLUMBIA RIVER WETLAND MITIGATION BANK SERVICE AREA

- 1 - 170800010704 - Latourell Creek
- 2 - 170800010703 - Viento Creek
- 3 - 170800010702 - Hamilton Creek
- 4 - 170800010701 - Tanner Creek

**NOTES:**

- 1. STATE, COUNTY, ROADS, RIVERS AND STREAM BOUNDARIES FROM ECOLOGY WEBSITE: <http://www.wsdot.wa.gov/mapsdata/geodatacatalog/default.htm>
- 2. FLOODPLAIN DATA FROM J. BURKE, UNIVERSITY OF WASHINGTON.
- 3. HUC6 WATERSHED BOUNDARIES FROM USGS WEBSITE: <http://www.water.usgs.gov/wsc/cat/17080001.html>
- 4. MAP PREPARED BY ECOLOGICAL LAND SERVICES, INC., JUNE, 2008.



**FIGURE E-4**  
**SKAMANIA COUNTY**  
**COLUMBIA RIVER**  
**WETLAND MITIGATION**  
**BANK SERVICE AREA**

1. The service area boundary includes small watersheds immediately above and which directly drain into the Columbia River. The intent is to capture areas that directly influence the Columbia River and are not influenced significantly by surface and subsurface movement of water in major valleys, terraces and mountains that are inland from the historical Columbia River floodplain.
2. The extent of tidal inundation or the 20 foot contour, whichever was greater, was used to determine the upstream boundaries for major rivers and streams. If information on tidal extent was unknown, then the 20 foot contour was used. The 20 foot contour line was selected based on identification of the elevation at which a distinct break between riverine floodplain geomorphology and upland topography occurred. The distinct break is associated with the Columbia River's historical direct influence on wetlands. If the tidal extent upstream on tributaries was downstream of where the 20 foot contour intersected the historic tributary floodplain, then it was used. For example, on the Cowlitz River tidal data from NOAA station at Gearhart Gardens and Longview station on the Columbia River (9440422), was used to calculate the upstream extent of tidal influence from the Columbia River. This upstream extent of tidal influence was calculated to extend 2.37 miles upstream on the Cowlitz from its confluence with the Columbia River. Since this upstream tidal influence was downstream of where the 20 foot contour crossed into the historic floodplain (approximately RM4.5) it was not used to set the service area for the Cowlitz River. Instead the 20 foot contour was used.

B. The Bank may be used to compensate for permitted impacts occurring outside the service area if specifically approved by the appropriate agencies requiring mitigation and 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., including, but not limited to, 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 projects that desire to satisfy mitigation obligations through use of the Bank, 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.

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

B. The following table depicts the approximate number of Bank credits typically required 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 (Ecology Publication # 04-06-025). Units of loss are measured in acres for wetland and buffer impacts. Due to the variety and typically high level of functioning of Category I wetland, compensation for impacts to this resource by Bank credits will be determined by the regulatory agencies on a case-by-case basis.

**Table E-1: Typical Credit-Debit Ratios**

<b>Resource Impact</b>	<b>Bank Credits: Impact Acreage</b>
Wetland, Category I	Case-by-Case
Wetland, Category II	1.2 : 1
Wetland, Category III	1 : 1
Wetland, Category IV	.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), the City of Vancouver’s Shoreline Management Master Program (VMC 20.760), Critical Areas Protection (VMC 20.740), Water Resources Protection (VMC 14.26), Archaeological Resource Protection (VMC 20.710), Open Space Districts (20.450), Vancouver SEPA Regulations (VMC 20.790), Vancouver Tree Conservation (VMC 20.770), 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, floodplain 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 in the best interest of the environment. 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) All 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 a permit 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 updated accounting ledger.

D. Other types of credit users may include, but are not necessarily limited to, transfers made that are not associated with any one particular project or impact (i.e., “good will” transfers), transfers to 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 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 other 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 credit transactions, as shown in **Table E-1**. The Sponsor will record each credit withdrawal transaction that receives a permit with the Clark County Auditor, and submit a copy of the recorded transaction to the IRT within 30 days from the stamped registration date. The Sponsor will maintain a ledger of the credits that are awarded through the achievement of specified performance standards, and credits that are sold, used or transferred.

B. The following information 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) requiring 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 adverse 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 transaction.

C. The Sponsor will provide an updated ledger to the IRT each time credits are awarded, sold, used, transferred, or withdrawn. This must be provided within 30 days of any credit transaction. The Sponsor will also submit an annual ledger of the previous calendar year 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 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.



## **APPENDIX F ESTABLISHMENT PERIOD MONITORING, REPORTING, MAINTENANCE, AND REMEDIAL ACTION**

### **APPENDIX F.1 Establishment Period Monitoring, Reporting, Maintenance, and Remedial Action:**

During the establishment period, the Sponsor shall monitor and report on the progress of the Bank toward achieving the goals, objectives, and performance standards established by these Appendices and take all actions directed by the IRT to remediate any consideration that prevents a component of the Bank from achieving the goals, objectives and performance standards of the Bank. Procedures for as-built reports, monitoring reports and remedial actions are described below.

#### **F.1.1. As-Built Reports:**

As-built reports will be submitted to the IRT upon the completion of construction to verify topography, hydrology, and planting. 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, engineers, and wetland professional 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.
- 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, include a description of how elevations were determined
  - Installed planting scheme – 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 CCMP 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 plans. The baseline (prior to Year 0 construction) existing conditions of emergent and aquatic bed species cover and richness will be collected in the summer 2010 before construction and the data provided to the IRT.

Excavation of the created PSS/PFO wetlands on site, 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. Post-construction conditions will be documented in Year 0 with photographs and as-built plans.

### **F.1.2 Establishment Period Monitoring:**

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 on-going monitoring requirements specific to each performance standard (see Section C1.2 of Appendix C) are summarized below.

#### **Ecologic Goal #1: Create additional wetland area on site:**

- Submit as-built indicating surveyed final grades of the site; locate wells, as well as other features specified below, on as-builts (Performance Standard 2A)
- Submit wetland determination in Year 3 (Performance Standard 2B)
- Submit hydrologic monitoring report in Years 3, 5, and 10 (Performance Standard 2C)
- Submit wetland delineations in Years 5 and 10, documenting wetland acreage, vegetation, soils development (Performance Standard 2C).

#### **Ecologic Goal #2: Create and enhance a variety of habitat types interspersed throughout the site, and**

**Ecologic Goal #3: Control invasive species on site:**

For all habitat types on site, including BPA easement:

- Submit as-built showing plant locations, species, and quantities and planting densities (Performance Standard 3A).
- Submit monitoring reports for years 1, 3, 5, 7, and 10 documenting non-native invasive species presence and cover (Performance Standard 3B).
- Submit monitoring reports for years 1, 3, 5, 7, and 10 documenting cover of reed canarygrass and meadow foxtail (Performance Standard 3C).
- Annual inventory for aggressive non-native invasive species including Japanese knotweed, Purple loosestrife, and English Ivy, presence and eradication reported in monitoring reports for years 1, 3, 5, 7, and 10 (Performance Standard 3D).

**For Palustrine Aquatic Bed Habitat Type:**

- Document species presence, percent cover and change over baseline within 15 sampling plots for Years 3, 5, 7, and 10.
- Submit photos documenting transition zone between rooted emergent vegetation, mudflat habitat and permanently ponded areas

**For Palustrine Emergent Habitat Type:**

- Document species presence and percent cover within 30 sampling plots for years 1, 3, 5, 7, and 10 (Performance Standard 3F).
- Document and record moisture index (Performance Standard 3G).

**For Palustrine Scrub-shrub Habitat Type:**

- Document species presence and percent cover within PSS sampling plots for Years 3, 5, 7, and 10 (Performance Standard 3H).
- Document and record moisture index (Performance Standard 3I).

**For Palustrine Forested Habitat Type:**

- Document species presence, density, and percent cover within PFO sampling plots for Years 3, 5, 7, and 10 (Performance Standards 3J and 3K).
- Document moisture index (performance standard 3L).

**For Active Floodplain Habitat Type:**

- Document species presence and percent cover within AFP sampling plots for Years 3, 5, 7, and 10 (Performance Standard 3M).

**Ecologic Goal #4: Enhance wildlife habitat structure and function at the bank site.**

- Submit as-built showing location and installation of brush piles, cavity trees, nest boxes, root wads (performance standard 4A).
- Submit monitoring report at Year 10 showing existing habitat features (performance standard 4B).

**F.1.2.2 Monitoring Protocol**

Formal monitoring will include both qualitative and quantitative monitoring to address fulfillment of the Bank objectives and performance standards (see Appendix C). Formal monitoring will occur throughout Years 1, 3, 5, 7, and 10 according to the monitoring

schedule and sampling protocol described below. For Year 3, formal monitoring will include a wetland determination which includes spot checking in the areas that are intended to be wetland to determine if site characteristics related to the extent and duration of wetland hydrology are establishing. The areas that have been checked for wetland characteristics will be recorded in order to be shown on a determination map. For Years 5 and 10, formal monitoring will include a full wetland delineation on the entire site, using the *1987 Corps of Engineers Wetland Delineation Manual* (U.S. Army Corps of Engineers 1987) and appropriate supplements as well as the Washington State wetland delineation manual in effect at the time of delineation. The wetland edge will be clearly marked in the field by a qualified wetland biologist. The wetland edge will be surveyed and mapped by a licensed land surveyor. A GPS-based survey method is acceptable as long as it has sub-meter accuracy and the resulting map is stamped by a licensed land surveyor.

Computer-aided drawing software will be used to calculate the size of each wetland area after the determination and delineation have been completed. Results from both formal and informal monitoring will be summarized in the Monitoring Reports submitted to the IRT.

Informal monitoring provides a general overview of site progress, and will be conducted during years for which there is no formal quantitative monitoring reporting requirement to ensure that the site appears to be progressing towards meeting performance standards. Specifically, a qualitative visual inspection of the Bank will be conducted during periodic site visits to identify concerns associated with meeting Bank objectives and performance standards, if any. Informal monitoring will usually include observation notes and site photos. Informal monitoring may quantitatively address some performance standards for upcoming years, but may be less statistically rigorous than formal monitoring. Informal monitoring will be the only monitoring method during the years for which there are no performance standards, although it will also be employed during years of formal monitoring.

### **F.1.2.3 Vegetation**

To document and track bank site vegetation conditions over time, CCMP has established baselines and transects which run perpendicular to the baseline, crossing the environmental gradient of the site (Figure F-1 Systematic Plot Locations). The location of each transect was randomly established using methods as described in Elzinga et al (*Measuring and Monitoring Plant Populations*, 1998. BLM/RS/ST-98/005+1730). Sampling plots are systematically located along each transect. The location of each initial sampling plot off of each transect was randomly selected utilizing the random number table as reproduced in Elzinga et al. as well as a random number generator available at <http://www.graphpad.com/quickcalcs/randomN1.cfm>. Initial sampling plot locations are listed by transect on Figure F-1. Subsequent sampling plots are located every 400 feet along each transect. Sampling plots located along the transects are independent and will be identified in the field with permanent markers following

planting. In addition, locations of systematically located sampling plots will be permanently documented using a sub-meter GPS.

Sampling plots are established to measure percent cover and stem density of vegetation to determine site progress in meeting performance standards. Where it occurs in a sample plot, bare soil will be counted towards percent cover. Minimum sampling requirements are established by the acreage in all habitat types except Palustrine Aquatic Bed. At least 1% of the area of each forested and shrub habitat type (Active Floodplain, Palustrine Forested Wetland, Palustrine scrub-shrub wetland) is sampled, and a minimum of 3 plots per acre are sampled in the Palustrine Emergent Wetland. The minimum sampling area for each habitat type (except for Palustrine Aquatic Bed) was determined based on methods described in Tiner (Wetland Indicators: A Guide to Wetland Identification, Delineation, Classification, and Mapping, 1999) and Krebs (Ecological Methodology, 1999), and in consultation with the IRT. Due to the homogenous nature of the Palustrine Aquatic Bed habitat area, a minimum of 15 plots will be sampled.

**Sample Plot Sizes:**

Forested communities (AFP and PFO) shall be sampled with a 30-foot radius circle (area of the sample plot equals 2,826 square feet).

Shrub communities (PSS) shall be sampled with a 30-foot radius circle (area of the sample plot equals 2,826 square feet).

Herbaceous communities (PEM and PAB) shall be sampled with a 3-foot radius circle.

Specific to the Columbia River Wetland Mitigation Bank a minimum of 3 sampling plots per acre is required for the PEM habitat type and a total of 15 plots for the PAB habitat type. Therefore, in addition to sample plots that are systematically located along the transects, a sufficient number of sample plots to equal 3 per acre shall be randomly located within the PEM habitat type, and a total of 15 plots for the PAB habitat type, totaling 45 sample plots for the herbaceous wetland habitat communities.

In addition to the sample plot locations identified on Figure F-1, a minimum of two sample plots will be randomly located within the Oregon White Oak grove habitat type. For the herbaceous habitat types, sufficient sample plots will be randomly located within the Palustrine Emergent and Palustrine Aquatic Bed habitat types to ensure that 3 sample plots per acre are documented for PEM habitat and a total of 15 documented for PAB habitat. The randomly located plots within the PAB and PEM habitat types will be randomly re-established during each required monitoring period.

Additional sample plots may be added if deemed necessary by the Sponsor or by the IRT. All monitoring plot locations will be shown on maps in the monitoring reports.

**Table F-1 Sample Plots by Habitat Type**

<b>Habitat Type</b>	<b>Acreage</b>	<b>Minimum Sample Plots Required (1% of area of habitat type for AFF, PFO and PSS)</b>	<b>Proposed # of Sample Plots</b>
AFP	30	5 (+ 2 in Oak)	18 (+ 2 in Oak)
PFO	44	7	17
PSS	44	7	17
PEM	10	30	30 (4 located on systematic transects; 26 to be randomly located within the habitat type)
PAB	10	30	15
<b>TOTAL PLOTS</b>		<b>81</b>	<b>99</b>

For all habitat types, non-native invasive species presence and percent cover will be documented in monitoring reports as recorded at each sampling plot for Years 1, 3, 5, 7, and 10 (See Figure F-1 Systematic Sample Plot Locations). The cover of reed canarygrass and meadow foxtail shall be documented separately for each habitat type, and reported in monitoring reports for Years 1, 3, 5, 7, and 10. There shall be zero tolerance for Japanese knotweed (and hybrids), Purple loosestrife, and English Ivy on site. Presence and eradication of these species must be noted in monitoring reports for Years 1, 3, 5, 7, and 10. Annual surveys for these species shall occur.

Monitoring for vegetation will be conducted when plants are in bloom and at height of growth in order to survey at the optimum flowering period for the majority of the plants expected to occur at the Bank and to assess each vegetative stratum. Plants must have been in the ground for a minimum of five months prior to monitoring.

Tree density for Performance Standard 3J will be determined using 30-foot radius circular sampling plots located along established transects.

In addition to measuring percent cover and stem density, the Sponsor will collect information on the moisture index of each sample plot as described in Draft Guidance for Vegetation Planning and Monitoring in Western Oregon Wetlands and Riparian Areas (Marshall 2007), where moisture index is defined as "...a numeric indicator between 1 and 5 of the overall moisture tolerance of the plant communities represented in each of the mitigation bank management units, with 1 representing vegetation highly tolerant to low oxygen environments induced by moisture stress and 5 representing very low tolerance to low oxygen environments induced by moisture stress. It is derived as follows:

1. Assign each of the plants in the sample plot a number based on the U.S. Fish and Wildlife Service National List of Plant Species that Occur in Wetlands: Northwest (Region 9) wetland indicator status (e.g. 1 = obligate, 2 = FACW, 3 = FAC, 4 = FACU, and 5 = UPL);
2. Determine percent cover for each species and then sum the percent cover for each species in a sample;
3. Multiply the percent cover of each species by its respective moisture tolerance index to derive a weighted percent cover for each species;
4. Sum the weighted percent cover for each species in the same sample;
5. Divide the sum in Step 4 by the sum derived in Step 2 to derive sample plot moisture index;
6. Average sample plot moisture indexes in the transect to derive transect moisture index; and
7. Average transect moisture indexes to derive management unit moisture index.

If transects are not used (e.g. for random samples), then just average the moisture indexes derived for the sample plots established in a management units to derive the management unit moisture index.

The sample plots located on **Figure F-1** indicate which plots are anticipated to be present on site following planting. These sample plots are located based on existing and proposed surface elevations at the site. Palustrine Aquatic Bed is anticipated to be at elevations 8' and below. Palustrine Emergent is anticipated to be from 8 to 9 feet in elevation. Palustrine Scrub-shrub is anticipated to be from 9 to 10 feet in elevation. Palustrine Forested is anticipated to be from 10 to 11 feet in elevation. Active Floodplain is anticipated to be those areas on-site above 11 feet in elevation. These are rough estimates based on existing conditions on site. Where sample plots differ from those anticipated in Figure F-1, the monitoring report for that year will note the change based on the expression of vegetation dominance (tree, shrub, emergent) within each plot. Where nested plots are required, the monitoring report will note the plot nesting convention and the rationale for each nested plot. If utilized, nested shrub plots shall be consistently located within the same quadrant of each tree sample plot. Each monitoring report shall document sample plot layout and nested plot layout, if nested plots are utilized.

#### **F.1.2.4 Hydrology:**

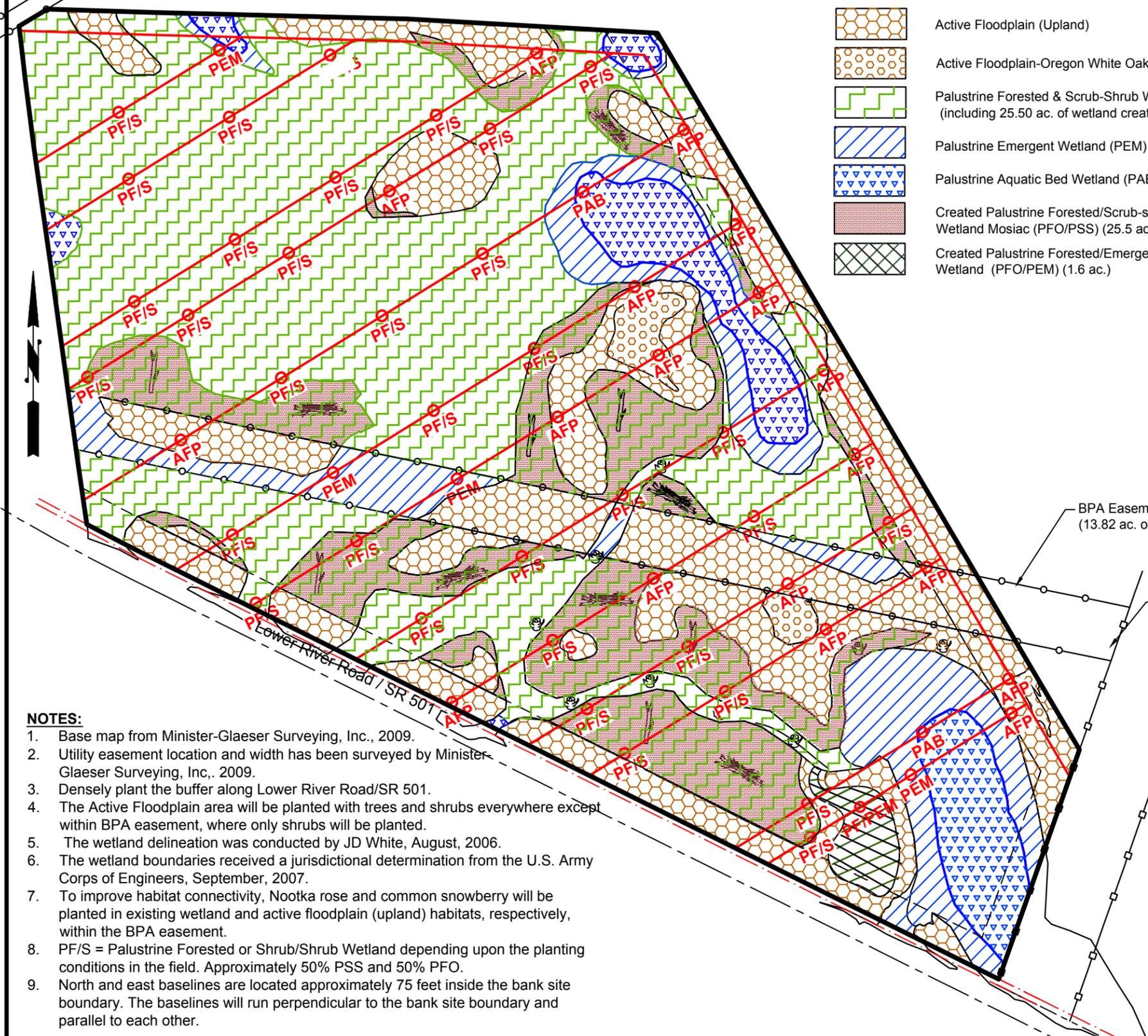
A minimum of six permanent wells shall be located within existing wetland area following bank site construction and planting. In addition, a minimum of 20 paired wells shall be located within the created wetland area and adjacent upland. Permanent



**LEGEND:**

- Bank Site Area (155.46 ac.)
- Active Floodplain (Upland)
- Active Floodplain-Oregon White Oak Grove (Upland)
- Palustrine Forested & Scrub-Shrub Wetland Mosaic (including 25.50 ac. of wetland creation)
- Palustrine Emergent Wetland (PEM)
- Palustrine Aquatic Bed Wetland (PAB)
- Created Palustrine Forested/Scrub-shrub Wetland Mosaic (PFO/PSS) (25.5 ac.)
- Created Palustrine Forested/Emergent Wetland (PFO/PEM) (1.6 ac.)

- BPA Easement (13.82 ac.)  
(land in this easement is owned in fee simple by the Port of Vancouver, USA)
- BPA Right-of-Way (land in this right-of-way is owned in fee simple by BPA)
- Setback (18.23 ac.)
- Cavity Tree (1 Per 5 Acres/Upland)
- Rootwad (1 per 250 feet channel/swale area)
- Brush Pile (1 Per 5 Acres/Upland)
- Transect Line, Sampling Plot Location & Habitat Type



**NOTES:**

1. Base map from Minister-Glaeser Surveying, Inc., 2009.
2. Utility easement location and width has been surveyed by Minister-Glaeser Surveying, Inc., 2009.
3. Densely plant the buffer along Lower River Road/SR 501.
4. The Active Floodplain area will be planted with trees and shrubs everywhere except within BPA easement, where only shrubs will be planted.
5. The wetland delineation was conducted by JD White, August, 2006.
6. The wetland boundaries received a jurisdictional determination from the U.S. Army Corps of Engineers, September, 2007.
7. To improve habitat connectivity, Nootka rose and common snowberry will be planted in existing wetland and active floodplain (upland) habitats, respectively, within the BPA easement.
8. PF/S = Palustrine Forested or Shrub/Shrub Wetland depending upon the planting conditions in the field. Approximately 50% PSS and 50% PFO.
9. North and east baselines are located approximately 75 feet inside the bank site boundary. The baselines will run perpendicular to the bank site boundary and parallel to each other.

Habitat Type	Acreage	Minimum Sample Plots Required (1% of area of habitat type for AFP, PFO and PSS)	Proposed # of Sample Plots
AFP	30	5 (+ 2 in Oak)	18 (+ 2 in Oak)
PFO	44	7	17
PSS	44	7	17
PEM	10	30	30 (4 located on systematic transects; 26 to be randomly located within the habitat type)
PAB	10	30	15
<b>TOTAL PLOTS</b>		<b>81</b>	<b>99</b>

Figure F-1  
**SYSTEMATIC SAMPLE PLOT LOCATIONS**  
 Columbia River Wetland Mitigation Bank  
 Clark County Mitigation Partners, LLC  
 City of Vancouver, Clark County, Washington  
 Sections 17 & 20, Township 2N, Range 1E, W.M.

DATE: 8/7/13  
 DWN: BCB/MMM  
 REQ. BY: MM  
 PRJ. MGR: MM  
 CHK: MMM  
 APPR:  
 PROJ#: 1209.03

**ECOLOGICAL LAND SERVICES, INC.**  
 1157 3rd Ave., Suite 220 Longview, WA 98632  
 (360) 578-1371 Fax: (360) 414-9305

data/photo points will be established at each permanent well location. These data/photo points will be accurately identified on as-built drawings. Data and photo points for hydrology shall include those locations with monitoring wells as well as two to three additional locations that will allow for representative shallow soil pit sampling in each area intended to be wetland as approved by the IRT.

Data from permanent groundwater wells established at the Bank will be collected weekly during the growing season of Years 1, 2, 3, and Year 5. If hydrology is meeting performance standards at that time and the wetland appears to be establishing in wetland creation areas, as well as existing wetland areas, hydrology will only be collected during the growing season of Year 10 to inform the wetland delineation required at that time. Permanent data/photo points for hydrology determination, as identified on as-built drawings, will be monitored as follows. At a minimum, data collected from permanent data/photo points shall be reported during Years 1, 3, 5, 7, and 10. Wetland determinations will be conducted in areas intended to be wetland during Year 3. Full wetland delineations will be conducted throughout the entire Bank area in Years 5 and 10. All hydrology monitoring results shall be reported in applicable monitoring reports.

Data and photo points for hydrology shall include those locations with monitoring wells as well as two to three additional locations that will allow for representative shallow soil pit sampling in each wetland area. Specifically, the grading plan (Figure B-2) identifies 11 distinct areas of excavation to create wetland. Two to three shallow soil pits will be located within each of these 11 excavation areas in addition to wells located within these areas to provide additional documentation of wetland hydrology above and beyond the well data. A total of 22 to 33 soil saturation pits are anticipated. The shallow pits are intended to document the presence of shallow groundwater, saturated soils, and hydric soil development that would support wetland conditions, which may not be captured by monitoring wells. Wetland hydrology for the project site is defined as soil saturation to the surface, or free water in the soil pits at 12 inches or less below the soil surface for at least 10% of the growing season, where the growing season is defined as March 1 through October 31.

Each shallow soil pit should have documentation of hydric soil development, which shall include observation of chroma color, any redoximorphic feature developments/mottles, oxidized rhizospheres, soil horizon formation, and depth. If performance standards are not met, further data collection will be conducted, as necessary.

The extent of wetlands (wetland hydrology) will be documented in Years 5 and 10 by conducting a wetland delineation on the entire Bank site using the *1987 Corps of Engineers Wetland Delineation Manual* (U.S. Army Corps of Engineers 1987) and appropriate supplements as well as the Washington State wetland delineation manual in effect at the time of delineation. The results, including a wetland boundary map with data points and acreages, will be included in the Year 5 and 10 monitoring reports.

#### **F.1.2.5 Wildlife Monitoring**

The location of features intended for wildlife use on the site will be recorded on the final as-built. Wildlife features include brush piles, cavity trees, purple martin nest boxes, and root wads. Although there are no performance standards for wildlife use, monitoring reports will include observations of wildlife use of the site. Anecdotal observation of wildlife use, including types of wildlife and/or their sign, will be recorded while staff is on site for other monitoring purposes.

### **F.1.3 Reports**

The Sponsor will prepare and submit to the IRT annual monitoring reports that will inform the IRT of the status of Bank establishment and operation. These reports will document Bank conditions and provide the supporting information required to document the attainment of goals, objectives, and performance standards, as a basis for a decision whether to award credits. Monitoring reports for each calendar year will be submitted by February 1 of the following year, with a copy for each member of the IRT. Each monitoring report will contain the following information:

A. An overview of the current ecological condition of the Bank, including a survey of the vegetative communities, effectiveness of the restoration and enhancement activities accomplished to date, and progress of the Bank in achieving the specific performance standards of the Bank. To provide data for evaluating progress towards achievement of performance standards, permanent vegetation transects will be established at selected locations within the Bank. The same performance transects will be revisited in appropriate years, with a record kept of all plant species found. Vegetation data in forested, scrub-shrub, emergent, and aquatic bed areas will include, species, cover by species, and density as appropriate. Vegetation data will be submitted to the IRT as soon as possible following collection (within two weeks of data collection). Raw vegetation data shall be submitted to the IRT two weeks prior to scheduled site visits. IRT approved vegetation measures and techniques will be used to demonstrate whether performance standards are being met. Experience in the field may indicate that other performance monitoring methods would provide more useful information; the IRT must approve in advance any changes in the means of gathering or reporting performance data. All monitoring will be conducted by qualified personnel.

B. A detailed discussion about the likely cause and impact of any setback or failure that occurred and recommendations for future actions and strategies that might resolve those problems.

C. Pertinent additional information on such aspects of the Bank as hydrology, soils, vegetation, fish and wildlife use of the area, recreational and scientific use of the Bank, and natural events such as disease, wildfire, and flooding that occurred.

D. Explanations of the need for any contingency or remedial measures, and detailed proposals for their implementation.

E. Photographs of the Bank taken from permanent locations that are accurately identified on the as-built drawings. The photographs are intended to document the progress of each component of the Bank, as well as the Bank in general, toward achieving the objectives and performance standards of the Bank. Such photo-monitoring will include general vantage points around the margin of the Bank, vantage points within the Bank, and at specific monitoring locations such as transects and/or sampling points.

**Table F-2 Summary of Annual Monitoring Tasks**

Report Name	Monitoring Year	Performance Standard	Monitoring Task	Monitoring Area	Expected Site Visits
Baseline Conditions	pre-construction	2B	Collect hydrology data over site	Entire bank site	Multiple March-June
	pre-construction	3G	Document moisture index	PEM	June-Sept, one time in year
	pre-construction	3E, 3F	Document baseline conditions	PAB, PEM	June-Sept, one time in year
As-built Report	Year 0	2A	Submittal of as-built drawings for grading	Entire bank site	Within 90 days following completion of grading
	Year 0	3A	Submittal of as-built drawings for planting	Entire bank site	Within 90 days following completion of planting
Year 1 Monitoring Report	Year 1	2B	Collect hydrology data over site	Entire bank site	Multiple March-June
	Year 1	3B, 3C, 3D	Monitor for non-native invasive species	In each habitat class	June-Sept, one time in year
	Year 1		Document change over baseline conditions; photo transition zone	PAB	June-Sept, one time in year
	Year 1	3F	Collect cover data for native species	PEM	June-Sept, one time in year
	Year 1	3G	Document moisture index	PEM	June-Sept, one time in year
Year 2	Year 2	2B	Collect hydrology data over site	Entire bank site	Multiple March-June
Year 3 Monitoring Report	Year 3	2B	Collect hydrology data over site	Entire bank site	Multiple March-June
	Year 3	3B, 3C, 3D	Monitor for non-native invasive species	In each habitat class	June-Sept, one time in year
	Year 3	<sup>1</sup>	Document change over baseline conditions; photo transition zone	PAB	June-Sept, one time in year
	Year 3	3F	Collect cover data for native species	PEM	June-Sept, one time in year
	Year 3	3G, 3I, 3L	Document moisture index	PEM, PFO, PSS	June-Sept, one time in year
	Year 3	3J	Collect stem density for native trees	PFO	June-Sept, one time in year
	Year 3	3H, 3K, 3M	Document percent cover of native woody species	PFO, AFP, PSS	June-Sept, one time in year
Year 5 Monitoring Report	Year 5	2C	Submittal of wetland delineation	Entire Bank Site	Multiple March – June
	Year 5	3B, 3C, 3D	Monitor for non-native invasive species	In each habitat class	June-Sept, one time in year
	Year 5	3F	Collect cover data for native species	PEM	June-Sept, one time in year
	Year 5		Document change over baseline conditions; photo transition zone	PAB	June-Sept, one time in year
	Year 5	3G, 3I, 3L	Document moisture index	PEM, PFO, PSS	June-Sept, one time in year
	Year 5	3J	Collect stem density for native trees	PFO	June-Sept, one time in year
	Year 5	3H, 3K, 3M	Document percent cover of native woody species	PFO, AFP, PSS	June-Sept, one time in year
Year 7 Monitoring Report	Year 7	3B, 3C, 3D	Monitor for non-native invasive species	In each habitat class	June-Sept, one time in year
	Year 7	3F	Collect cover data for native species	PEM	June-Sept, one time in year

<sup>1</sup> PS 3E was deleted via amendment to the bank instrument, however the Sponsor is still required to collect the data associated with the original standard.

	Year 7		Document change over baseline conditions; photo transition zone	PAB	June-Sept, one time in year
	Year 7	3G, 3I, 3L	Document moisture index	PEM, PFO, PSS	June-Sept, one time in year
	Year 7	3J	Collect stem density for native trees	PFO	June-Sept, one time in year
	Year 7	3H, 3K, 3M	Document percent cover of native woody species	PFO, AFP, PSS	June-Sept, one time in year
Year 10 Monitoring Report	Year 10	3B, 3C, 3D	Monitor for non-native invasive species	In each habitat class	June-Sept, one time in year
	Year 10	3F	Collect cover data for native species	PEM	June-Sept, one time in year
	Year 10		Document change over baseline conditions; photo transition zone	PAB	June-Sept, one time in year
	Year 10	3G, 3I, 3L	Document moisture index	PEM, PFO, PSS	June-Sept, one time in year
	Year 10	3J	Collect stem density for native trees	PFO	June-Sept, one time in year
	Year 10	3H, 3K, 3M	Document percent cover of native woody species	PFO, AFP, PSS	June-Sept, one time in year
	Year 10	2C	Submit final wetland delineation	Entire Site	Multiple March – June
	Year 10	4B	Document location of habitat features	Entire site	June-Sept, one time in 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. A thorough analysis of vegetation and wetland monitoring data may result in the identification of other factors, not identified in the performance standards or monitoring data, causing the project to fall short of its objectives. The IRT may also direct adaptive management actions, following consultation with the Sponsor, if the IRT identifies 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 it is assessed. The Sponsor shall also implement all appropriate mitigation that the IRT determines 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 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 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 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 IRT, in consultation with the Sponsor, determines 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 IRT, after consultation with the Sponsor, may terminate this Instrument and the operation of the Bank pursuant to Article IV.J.

D. If the IRT directs 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 the request to discontinue efforts indicated in Section F.1.4.B, the IRT 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 purple martin nest boxes throughout the active life of the Bank, road and trail maintenance as necessary, and clean-up of trash) also per section B.1.2.4.

## **APPENDIX G LONG-TERM PROTECTION AND MANAGEMENT**

### **APPENDIX G.1:**

#### **G.1.1 Conservation Easement**

A. The Sponsor will ensure, pursuant to Article III.D. of this Instrument, that an appropriate conservation easement is granted 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 IRT, and shall be recorded with the Clark County Auditor. A copy of the recorded easement shall be provided to all members of the IRT. The conservation easement shall reflect that it may not be removed, modified, or transferred without written approval of the IRT. Conveyance of any interest in the property shall be subject to this conservation easement. 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 IRT 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 Long-Term Management and Maintenance Plan.

#### **G.1.2 Long-Term Management and Maintenance Plan**

A. The Sponsor is responsible for ensuring that a Long-Term Management and Maintenance Plan 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 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 Long-Term Management and Maintenance Plan 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 Long-Term Management and Maintenance Plan 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 Long-Term Management and Maintenance Plan. 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 Long-Term Management and Maintenance Plan 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 Bank site annually to locate and eradicate any occurrence of knotweed. The IRT anticipates that this long-term control will involve identifying and eradicating a relatively small number of recurrences each year. In the event the IRT determines that the watershed within which the Bank is located becomes infested with knotweed in the future, so that its effective control on the Bank site is either no longer practicable or unreasonably expensive, the IRT will consider appropriate changes to the Long-Term Management and Maintenance Plan.

(4) Inspect the site annually to locate and control noxious weeds other than knotweed. 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 Long-Term 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 Long-Term Management and Maintenance Plan. The Corps and Ecology will also execute this assignment agreement. In exchange for the assignee's promise to achieve the Long-Term Management and Maintenance Plan, 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 Long-Term Management and Maintenance Plan 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 Long-Term Management and Maintenance Endowment 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 either a Letter of Credit or a Surety Bond to provide financial assurance underlying the establishment and initial functionality of the Bank.

#### **H.1.1 Letter of Credit**

A. The Irrevocable Letter of Credit prescribed in Article III.C.1. of this Instrument, underlying the establishment and functionality of the Bank, will adhere to the following form and contents.

B. Each Letter of Credit will be irrevocable and without condition other than those authorized in this Instrument. Each Letter of Credit may not be withdrawn or canceled by the issuing financial institution prior to the designated expiration date, which may be no earlier than 12 years from the date of issuance. If the Letter of Credit 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 Letter of Credit so that there is no interval in which there is no Letter of Credit in effect. In lieu of a Letter of Credit with an effective period of 12 years, the Sponsor may elect to submit a Letter of Credit with an initial expiration date that is a minimum period of one year from the date of issuance. The Letter of Credit shall provide that, unless the issuer provides the Beneficiaries written notice of non-renewal at least 60 days in advance of the current expiration date, the Letter of Credit is automatically extended without amendment for one year from the expiration date, or any future expiration date, until a period of 12 years commencing with the date of first issuance is completed, and the Corps and Ecology have both provided the Sponsor with a written statement waiving the right to payment. If the Sponsor does not furnish an acceptable replacement Letter of Credit, or other acceptable financial assurance, at least 30 days before a Letter of Credit's expiration, the Corps and Ecology may immediately draw on the existing Letter of Credit up to its full value without any notice to the Sponsor. If the Corps or Ecology determines that the issuing financial institution's rating has dropped below the requirements specified in Article III.C.1. of this Instrument, the Corps or Ecology may direct the Sponsor to provide an acceptable substitute Letter of Credit within 30 days. If an acceptable substitute is not provided within the prescribed period, the Corps or Ecology may immediately draw on the Letter of Credit up to its full value without any further notice to the Sponsor. No further credits will be awarded from the Bank without an effective Letter of Credit. Each Letter of Credit will provide that the issuing financial institution shall honor the credit engagement and pay to the Third Party Designee the directed sum without inquiring whether the directing Beneficiary agency or the receiving Third Party Designee has a right to make such a demand.

C. Each Letter of Credit will be issued to, and will designate, the Corps and Ecology as distinct and independent Beneficiaries. If the IRT has informed the Sponsor that one has been so designated, each Letter of Credit shall identify and designate the Third Party Designee. Upon presentation of a sight draft by either the Corps or Ecology, in writing on agency letterhead,

accompanied by no other documentation other than the original Letter of Credit, the issuing financial institution shall disburse from the credit funds account to the Third Party Designee the amount specified by the Corps or Ecology, up to a maximum cumulative amount as reflected in the Letter of Credit. The Corps or Ecology shall be authorized to direct or make partial drawings, and multiple successive drawings, upon the credit account. The Corps and Ecology shall have the exclusive authority to direct disbursement of funds from the credit funds account, and the direction of only one of these two agencies is required in order to accomplish a disbursement.

D. Each Letter of Credit shall acknowledge that, from time to time, the Beneficiary agencies may authorize a reduction in the required level of credit during the effective period of the Letter of Credit. Any such reduction must be authorized by both the Corps and Ecology, as Beneficiary agencies. Upon receipt of both authorizations, in writing on agency letterhead, the issuing financial institution will be authorized to reduce the level of maximum extended credit, and it may, as arranged between the Sponsor and the issuing financial institution, reissue or amend the applicable Letter of Credit accordingly to reflect that change.

E. Each Letter of Credit shall acknowledge that the Beneficiary agencies may authorize cancellation of the Letter of Credit prior to the scheduled expiration date reflected therein. Any such cancellation must be authorized by both the Corps and Ecology, as Beneficiary agencies. Upon receipt of both authorizations, in writing on agency letterhead, the issuing financial institution will be authorized to withdraw or rescind, as arranged between the Sponsor and the issuing financial institution, the applicable Letter of Credit.

F. If so directed by the Corps and Ecology, the Sponsor agrees to substitute the identification of the Third Party Designee with a replacement entity for each applicable Letter of Credit. The Sponsor agrees that it shall execute either an amendment or replacement of each applicable Letter of Credit in order to effect such a substitution. If substitution of the Third Party Designee is directed, all other terms and conditions of the applicable Letter of Credit shall remain unchanged, particularly including the credit amount and the expiration date.

G. Upon request of the Sponsor, the Corps and Ecology, in consultation with the IRT, may authorize reductions in the required credit account limits of each of the Letters of Credit when the Corps and 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.

H. The Sponsor is solely responsible for any costs, fees, or premiums associated with the issuance, modification, continuation in force, or termination of each Letter of Credit. Any such costs may not be deducted from the principal of the Letter of Credit.

### **H.1.2 Surety Bond**

A. Each Surety Bond 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 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 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 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 or Ecology. The Corps or Ecology shall be authorized to direct or make partial drawings, and multiple successive drawings, upon the penal sum. The Corps and Ecology shall have the exclusive authority to direct payment of the penal sum on the Surety Bond, 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 Ecology may authorize reductions in the required penalty amounts of the Surety Bond for the Bank when the Corps and 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 Surety Bond. Any such costs may not be deducted from the penalty amount.

### **H.1.3 Long-Term Management and Maintenance Endowment Fund**

A. In order to implement the Long-Term Management and Maintenance Endowment 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 Long-Term Management and Maintenance Endowment 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 Long-Term Management and Maintenance Endowment 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 Long-

Term Management and Maintenance Endowment 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 Long-Term Management and Maintenance Endowment 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 Long-Term Steward. The Long-Term Management and Maintenance 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.