June 8, 2022

MITIGATION BANK INSTRUMENT FOR THE DAIRY CREEK MITIGATION BANK

Located in Banks, Washington County, Oregon

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MITIGATION BANK INSTRUMENT
FOR
DAIRY CREEK MITIGATION BANK

This Mitigation Bank Instrument (MBI), which describes the establishment, use, operation, maintenance, and long-term management of the Dairy Creek Mitigation Bank (hereinafter, Bank) is made and entered into by and among *DCMB LLC* (Sponsor(s)), the U.S. Army Corps of Engineers, Portland District (Corps, USACE), and the Oregon Department of State Lands (DSL).

This MBI, including the following exhibits, constitutes the entire MBI:

"Exhibit A", Property Legal Description and Map
“Exhibit B”, Property Assessment and Warranty, Preliminary Title Report
“Exhibit C”, Mitigation Plan with Figures
“Exhibit D”, Anticipated Credits and Credit Release Schedule
“Exhibit E”, Service Area Map and Description
“Exhibit F”, Property Protection Instrument
“Exhibit G”, Sample Credit Receipt
“Exhibit H”, Sample Credit Ledger
“Exhibit I”, Definitions
“Exhibit J”, Financial Assurances and Release Schedule
“Exhibit K”, Long-Term Management Plan

I. PREAMBLE:

Whereas,

A. <u>Purpose:</u> The purpose of this MBI is to set forth the agreement of the parties regarding the establishment, use, operation, and long-term management of the Bank. The Bank will provide compensatory mitigation for unavoidable impacts to waters of the United States and/or waters of the State that result from activities authorized under Section 404 of the Clean Water Act (33 U.S.C. § 1344), Section 10 of the Rivers and Harbors Act (33 U.S.C. § 403) (Corps’ Regulatory Program), Oregon’s Removal-Fill Law (Oregon Revised Statutes (ORS) 196.600-196.990 and Oregon Administrative Rules (OAR) 141-085) or to resolve enforcement cases resulting from activities subject to these laws and regulations. Credits may also be used to compensate for impacts to waters of the United States for Corps Civil Works projects.

B. <u>Goals and Objectives</u>: The primary goal(s) of the Bank are to create (establish) 64.0 acres, enhance (re-habilitate) 3.4 acres, and restore (re-establish) 23.6 acres of wetland; and enhance 0.95 acres (1,080 linear feet) of perennial waters (stream), enhance 1.29 acres (715 linear feet) of intermittent stream, and create 3.2 acres (3,602 linear feet) of intermittent stream (side-channel). Waters (stream) enhancement includes: removing artificial debris and berming from the W. Fork Dairy Creek streambanks; recontouring and stabilizing steep, eroding streambanks; wood placement; and planting native species. This includes approximately 61.1 acres of Palustrine Forested (PFO), 23.7 acres of Palustrine Scrub-Shrub (PSS), 9.6 acres of Palustrine Emergent (PEM), 17.5 acres of

Upland and Wetland Buffer. The wetland areas are roughly 43.9 acres of Riverine and 58.6 acres of Slope/Flats HGM Class wetlands. The Goals and Objectives are further described in **Exhibit C**. This Bank would be developed in two phases as further defined and discussed in Exhibit C.

C. Bank Legal Description and Location: The Bank is located in Washington County, Township 2N, Range 4W, Section 36, Tax Lot 603 and a portion of Tax Lot 800, longitude -123.121295 and latitude 45.616498. The Bank is near the City of Banks, Oregon. The total area of the Bank is 132 acres and is further described in **Exhibit A,** the map and legal description of the Bank. Said parcels are hereinafter referred to as the "Property."

D. Property Ownership: The Sponsor has provided proof of ownership of the Property. A preliminary title report is included in **Exhibit B**, Preliminary Title Report and Property Assessment and Warranty. Any and all encumbrances (such as liens or easements) on the Property must be disclosed by the Sponsor to the Corps and DSL in **Exhibit B**. Any encumbrances that conflict with the mitigation purposes of the Bank shall be subordinated before the first credit release.

E. Establishment and Use of Credits: Upon achieving the milestones and performance standards described in **Exhibit C**, Mitigation Plan, and in accordance with the mitigation credit ratios and schedule described in **Exhibit D**, Anticipated Credits and Credit Release Schedule, the Corps and DSL (collectively, "Co-chair Agencies") will release credits to be used as mitigation in accordance with all applicable requirements of the Corps' Regulatory Program and Oregon's Removal-Fill Law.

F. Interagency Review Team: The Corps and DSL serve as co-chairs of the Interagency Review Team (IRT). The following agencies have agreed to serve on the IRT and advise the Co-chair Agencies in the establishment, use, operation, maintenance, and any adaptive management or remedial actions concerning the mitigation Bank:

Environmental Protection Agency;
National Marine Fisheries Service;
U.S. Fish and Wildlife Service;
Oregon Department of Environmental Quality;
Oregon Department of Fish and Wildlife;
Tualatin Soil and Water Conservation District;
Oregon Metro;
Washington County Planning Department;

G. Disclaimer: This MBI does not in any manner affect the statutory or regulatory authorities, or responsibilities of the signatory parties.

NOW, THEREFORE, the parties hereto agree as to the following:

II. AUTHORITIES

The following laws, regulations, policies, Executive Orders, and agreements that may apply to the establishment, use, operation and maintenance of the Bank:

A. Federal:

1. Clean Water Act (33 U.S.C. §§ 1251–1387);
2. Rivers and Harbors Act (33 U.S.C. § 403);
3. Fish and Wildlife Coordination Act (16 U.S.C. §§ 661 *et seq.*);
4. Endangered Species Act (16 U.S.C. §§ 1531–1544);
5. Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. §§ 1801–1883);
6. National Historic Preservation Act, (16 U.S.C. § 470);
7. National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–4347 ("NEPA");
8. Coastal Zone Management Act (16 U.S.C. §§ 1451 *et seq.*);
9. Executive Order 11988 (Protection of Floodplains);
10. Executive Order 11990 (Protection of Wetlands);
11. Executive Order 13112 (Invasive Species);
12. Executive Order 13175 (Consultation with Indian Tribes);
13. Regulatory Programs of the Corps of Engineers (33 C.F.R. Parts 320–332);
14. Guidelines for Specification of Disposal Sites for Dredged and Fill Material (40 C.F.R. Part 230);
15. Council on Environmental Quality Procedures for Implementing the National Environmental Policy Act (40 C.F.R. Parts 1500–1508);
16. Regulatory Guidance Letter 08-03 - Minimum Monitoring Requirements for Compensatory Mitigation Projects Involving the Restoration, Establishment, and/or Enhancement of Aquatic Resources. National Environmental Policy Act; and
17. Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army concerning the Determination of Mitigation under Clean Water Act, Section 404 (b)(1) Guidelines (February 6, 1990).

B. State of Oregon:

1. Oregon Revised Statutes 196.600-196.990; and
2. Oregon Administrative Rules 141-85.

III. ESTABLISHMENT OF THE BANK

A. Scope of Work: The Sponsor agrees to perform all necessary work, in accordance with the provisions of this MBI, to establish and maintain wetlands and associated upland buffers, as described in **Exhibit C**, Mitigation Plan, until it is demonstrated to the satisfaction of the Co-chair Agencies, considering the advice of the IRT, that the project complies with all provisions contained herein.

B. Permits: The Sponsor will obtain all appropriate permits or other authorizations needed to construct and maintain the Bank. This MBI does not fulfill or substitute for such authorization(s).

C. Approval: This MBI is effective upon the latter date of signature by the Sponsor and Co-chair Agencies.

D. Financial Assurance: A financial assurance (security) instrument will be provided by the Sponsor to the Co-chair Agencies for their approval. The financial assurance instrument is intended to ensure a high level of confidence that the compensatory mitigation project will be successfully completed, in accordance with the terms and conditions of the MBI, including applicable performance standards. A description of the financial assurance instrument and the schedule of amounts held and released are provided in **Exhibit J**, Financial Assurances. Depending on which of the Co-Chair Agencies is the beneficiary of the financial assurance instrument, DSL or the Corps, as appropriate, may, in coordination with the other Co-chair agency, make a claim on all or part of a financial assurance instrument for a Sponsor's failure to meet any term or condition under the MBI including, but not limited to, the Bank failing to meet performance standards or the Sponsor failing to provide monitoring reports.

If the Corps determines that a claim on a financial assurance instrument is necessary due to the Sponsor's failure to meet performance standards or comply with the terms of the MBI, and DSL is the beneficiary of the financial assurance instrument, the Corps will submit a request to DSL to make a claim. If DSL denies the Corps' request, the Corps may take any other appropriate action it deems necessary including, but not limited to, suspending credit sales, requiring adaptive management, including a remedial action plan, decreasing available credits, or withdrawing from the MBI (see Termination of or Withdrawal from MBI and Transfer of Credits, Section VII.C.).

E. Real Estate Provisions: The Sponsor has provided a preliminary Title Report in **Exhibit B**. The Sponsor warrants that the title to the Property is free of any encumbrance that could directly or indirectly conflict with the mitigation purpose of the Bank and agrees to defend the Property from any encumbrances that the Corps or DSL determine would be incompatible with the mitigation purposes of the Bank until Bank closure, as provided in the Property Assessment and Warranty, also in **Exhibit B**. The Sponsor shall permanently protect the Property by, at minimum, recording a restrictive covenant in the deed (**Exhibit F**). The site protection instrument must prohibit uses that are not compatible with the mitigation objectives.

The Sponsor shall also record an access easement granting to the Co-chair Agencies the right to access the Bank site for compliance inspections, and if necessary, to implement the mitigation or remediation using the financial assurance instrument, upon prior notice to the landowner. A copy of the recorded restrictive covenant and access easement shall be provided to the Co-chair Agencies prior to the initial release of Bank credit.

The Sponsor agrees to notify the Co-chair Agencies in writing sixty (60) days prior to taking or allowing any action that would void or modify the site protection documents or access easement, including transfer of title, or establishment of any other legal claims over the compensatory mitigation site.

Prior to or coincident with Bank closure, additional site protection mechanisms, such as a conservation easement or transfer of title to a conservation entity or government agency, may be required by DSL for purposes of its program. These additional site protection mechanisms may be recorded as supplemental to or superseding the restrictive covenant, provided they are approved by the Co-chair Agencies. Such modifications shall be coordinated with updates to the Long-Term Management Plan (**Exhibit K**) and shall be approved in writing by the Co-chair Agencies. A copy of any additional recorded site protection mechanisms referencing this MBI shall also be provided to the Co-chair Agencies.

F. Reporting: The Sponsor agrees to submit an as-built report containing a survey of the finished grades to the Co-chair Agencies within 90 days following completion of the grading of the mitigation Bank. If no grading is required, a brief construction completion report shall be submitted instead. Either report shall describe in detail any substantial deviation from the approved Mitigation Plan.

The Sponsor also agrees to submit annual reports that include data, documentation, and discussion sufficient for the Co-chair Agencies to determine how the compensatory mitigation project is progressing towards meeting its performance standards and its status relative to the stated Mitigation Plan Objectives. Annual monitoring reports shall cover successive one-year periods and be submitted to the Co-chair Agencies until Bank closure.

IV. OPERATION OF THE BANK

A. Service Area: The Bank is established to provide mitigation, to compensate for impacts to waters of the United States and/or Waters of the State that occur within a particular service area, that reflects a replacement of aquatic resources by employing an ecologically appropriate landscape scale or watershed approach. This service area shall be the 4th Field Hydrologic Unit Code (HUC) 17090010, below 1,000 feet in elevation, within Washington, Clackamas, and Multnomah Counties, as shown on and further described in **Exhibit E**, Service Area Map and Description. Compensatory mitigation for impacts outside of the service area of a bank may be allowed if the Corps and/or the DSL determine, on a case-by-case basis, that the Bank is the best mitigation option.

B. Access: The Sponsor will allow, or otherwise provide for, access to the site by the Co-chair Agencies, other members of the IRT, or their agents or designees at reasonable times as necessary to monitor the Sponsor's compliance with the terms of this MBI. If it becomes necessary for the Co-chair Agencies to make a claim on the financial assurance instrument to implement adaptive management measures or remedial actions, the Sponsor also will allow access to the Co-chair Agencies, their agents and designees to carry out such activities.

C. Party Responsible for Mitigation Obligation: The Sponsor shall assume legal responsibility for the compensatory mitigation requirements of Corps or DSL permits for which it sells or transfers credits once a Corps or DSL permittee, or a respondent under a permit enforcement action, has secured the appropriate number and resource type of credits from the Sponsor. Sponsor's assumption of responsibility will be formally documented for each transaction in a Credit Receipt provided to the Co-chair Agencies (**Exhibit G).**

D. Number of Credits: The number of credits expected to be generated by this Bank is described in **Exhibit C**, Mitigation Plan, and the credit quantification and release schedule are described in **Exhibit D**, Anticipated Credits and Credit Release Schedule. The actual number of credits will be determined based on the actual wetland acreage achieved, and performance standards and milestones successfully met. The amount to be debited for each impact will be specified in each permit issued by Corps and/or DSL or as otherwise determined by the Corps and/or DSL.

E. Performance Standards: Credits will be released based on the achievement of performance standards, as described in **Exhibit C**, Mitigation Plan.

V. MAINTENANCE AND MONITORING OF THE BANK

A. Maintenance Provisions: The Sponsor agrees to perform all necessary work to maintain the Bank consistent with **Exhibit C**, Mitigation Plan, including adaptive management or remedial action as may be necessary under an amendment to the MBI. The Sponsor shall continue with such maintenance activities to achieve and sustain performance standards until Bank closure or the Sponsor transfers or assigns the Bank to an assignee in accordance with Section VII.D. Long-term maintenance shall continue to be the responsibility of the Sponsor unless and until a different arrangement is approved under an amended LTMP (**Exhibit K**).

B. Monitoring Provisions: The Sponsor agrees to perform all necessary work to monitor the Bank to demonstrate achievement of the performance standards established in **Exhibit C**, Mitigation Plan. The Sponsor will provide copies of recently collected data addressing performance standards for verification during annual IRT site inspections. Monitoring and reporting to demonstrate compliance with performance standards shall continue until all credits are sold or until Bank closure.

C. Accounting Procedure: The Sponsor shall submit a signed credit receipt to the Corps and DSL each time credits are sold (**Exhibit G**). In addition, the Sponsor shall submit a ledger to the Co-chair Agencies with each annual monitoring report, per **Exhibit H**, Sample Credit Ledger, until the last credit is sold. The credit ledger shall document all transactions (releases, withdrawals, refunds and/or other adjustments, and current balance of unsold credits), starting with the first credit release cumulatively through the current reporting period, and show the permitted impacts for each resource type (i.e., stream and/or wetland). Credits shall only be sold by the Sponsor, except for certain re-sale provisions for government entities as specifically authorized by the Director of DSL.

D. <u>Adaptive Management and Remedial Action Plans</u>:

(1) The Sponsor shall provide an Adaptive Management Plan that anticipates potential challenges in constructing and managing the Bank (**Exhibit C**, **#8**). Analysis of monitoring results, inspections, input from the IRT, or other information may indicate that changes to management or other corrective actions may be needed to optimize Bank performance and ensure the targeted aquatic resource functions are provided. The Sponsor shall consider the risk, uncertainty, and dynamic nature of the Bank project in identifying adaptive management measures to rectify apparent problems. The Sponsor is responsible for implementing adaptive management measures. If the Sponsor is operating in accordance with the approved Mitigation Plan (**Exhibit C**), no special notification or additional Co-chair Agency approval is needed.

(2) If the Bank cannot be constructed in accordance with the Mitigation Plan (**Exhibit C**), the Sponsor must notify the Co-chair Agencies and propose adaptive management measures. A significant modification of the MBI requires approval from the Co-chair Agencies. Examples of significant modifications could include, but are not limited to, major changes affecting site design, hydrologic inputs, or vegetation community types. The Co-chair Agencies reserve the right to determine which modifications are significant.

(3) If monitoring or other information indicates that the Bank is not progressing towards meeting its performance standards as described in the Mitigation Plan, the Sponsor must notify the Co-chair Agencies as soon as possible and identify the adaptive measures that will be implemented. The Co-chair Agencies, in consultation with the IRT as appropriate, will determine the appropriateness of the Sponsor's proposed adaptive management measures.

(4) Sponsor's proposals that significantly deviate from the Mitigation Plan, or Sponsor's failure to propose or implement adaptive management measures, may give cause for the Co-chair Agencies to require a Remedial Action Plan. Examples of significant deviations could include, but are not limited to, major changes affecting site design, hydrologic inputs, or vegetation community types. The Co-chair Agencies reserve the right to determine when a Remedial Action Plan is required. The Remedial Action Plan is subject to Co-Chair Agencies' approval.

(a) The Remedial Action Plan shall address the deficiencies and include a map of areas to be remediated, tasks or treatments, itemized cost estimates, implementation and monitoring schedule, and any consequent adjustments necessary for the financial assurance account to remain sufficient to ensure completion of both the Remedial Action Plan and the original Mitigation Plan.

(b) The Remedial Action Plan may include site modifications, design changes, revisions to maintenance requirements, revisions, updates or other actions regarding performance standards specific to the remediated area, and revised monitoring requirements. The Plan must be designed to ensure that the modified Bank project provides aquatic resource functions comparable to those described in the Mitigation Plan Objectives.

(c) The Sponsor is responsible for and shall implement the approved Remedial Action Plan in accordance with the included schedule. Sponsor is responsible for updating the Co-Chairs whether the Remedial Action Plan is working and, if not, what additional steps need to be taken to correct and move the Bank into compliance with standards in the MBI. Co-Chairs will review yearly monitoring reports and perform site visits when necessary to determine if remedial actions were successful and assess whether performance standards are being met. If performance standards are not being achieved or success cannot be determined with information provided in the yearly monitoring reports and remedial action plan, Co-Chairs may identify additional remedial actions that need to take place. These actions may involve collection of additional photographic, vegetative, hydrologic or other data, as needed.

(5) In the event the Sponsor (i) fails to notify the Co-chair Agencies of an adverse impact that would impede the Sponsor from achieving the performance standards in the Mitigation Plan, (ii) provides false information, or (iii) fails to develop and propose a written Remedial Action Plan, the Bank may be subject to suspension or revocation of released mitigation credits, a claim on the financial assurance instruments, termination of the MBI, or other enforcement action as allowed under the regulatory authorities of the Co-chair Agencies.

(6) Regardless of adaptive management or remedial actions attempted, if the Bank fails to achieve performance standards within ten years of the Sponsor completing initial planting, as documented in the annual monitoring report, the Co-chair Agencies may terminate the Bank, unless all parties agree to a written MBI amendment that addresses any changes to agency regulations since that time, standards, credit accounting, and temporal loss.

E. <u>Default</u>: The Sponsor shall be in default if it fails to observe or perform any obligations or responsibilities required of it under this MBI. Implementation (i.e., site preparation) of the Mitigation Plan shall be initiated no later than the first full growing season after the date of the first credit transaction. Upon a determination by the Co-chair Agencies that the Sponsor is in default, the Co-chair Agencies shall notify the Sponsor that the sale or transfer of any credits will be suspended until the default has been cured. The notification from the Co-chair Agencies shall cite the MBI obligation or responsibility at issue and identify a range of potential remedies. Upon notice of such suspension, the Sponsor agrees to immediately cease all credit sales until the Co-chair Agencies inform the Sponsor that sales or transfers may be resumed. Should the Sponsor remain in default, the Co-chair Agencies, in consultation with the IRT as needed, may take appropriate measures including, but not limited to, reducing potential credits, making a claim upon financial assurance instruments, or terminating the MBI. This section shall not be construed to modify or limit any specific right, remedy, or procedure in any section of this MBI or any remedy available under applicable federal and/or state law.

F. Long-Term Management Plan: The Sponsor has prepared a Long-Term Management Plan (LTMP) which is included at **Exhibit K**. The LTMP must describe how the Bank will be managed to sustain the gains of aquatic resources after performance standards have been achieved, including a description of the site protection, the long-term funding mechanisms, and the parties responsible for managing the long-term funding mechanism and implementing the LTMP.

The Sponsor will be responsible for implementing all components of the LTMP unless and until the Sponsor transfers responsibility for implementation to a LTMP stewardship entity. Any such transfer, and subsequent amendment of the LTMP, must be approved by the Co-chair Agencies. DSL will require the finalization and execution of the Long-Term Management Plan, full funding of the endowment, and recording of Conservation Easement as a condition of the last 25% credit release for each phase.

G. Bank Closure: Upon achievement of the performance standards, the sale of all credits, approval and execution of any updates to the LTMP, and certification by the Sponsor that the Property Warranty and Assessment in **Exhibit B** has not changed, the Co-chair Agencies shall issue a written "bank closure certification" to the Sponsor. The Co-chair Agency which is the beneficiary of the financial assurance instrument will, following coordination with the other Co-chair Agency, release the financial assurance instrument. After Bank closure, monitoring and reporting of the performance standards will cease. Bank closure ends the establishment period of the Bank and begins the long-term management period.

VI. RESPONSIBILITIES OF CO-CHAIR AGENCIES AND THE INTERAGENCY REVIEW TEAM

A. Participation in Establishment, Use, and Operation: The IRT members may participate, as necessary, to advise the Co-chair Agencies in the establishment, use, and operation of the Bank and, to the degree practicable, ensure that the compensatory mitigation supports the policies of their respective agencies.

B. Review and Comment: The IRT members will strive to review and provide comments in accordance with timelines specified by the Co-chair Agencies on document reviews, mitigation plans, annual monitoring reports, requests for credit release, and remedial or adaptive management measures, among other documents associated with the Bank. In making decisions related to approval and credit release for the Bank, the Co-chair Agencies shall consider all timely comments.

C. Site Inspections and Recommendations: The Co-chair Agencies will conduct inspections, with participation and advice from the IRT members as necessary, to verify that the Bank is achieving the performance standards described in the MBI. If the Bank is not meeting performance standards, the Co-chair Agencies, in consultation with the IRT, may direct the Sponsor to implement remedial actions or adaptive management measures per Section V.D.

D. Document Review: The Co-chair Agencies shall coordinate as needed to ensure a predictable and timely process for review of documents. Each Co-chair Agency shall strive to respond according to applicable timelines under federal or state law, or where no applicable statutory timeline exists, within 30 days.

VII. OTHER PROVISIONS

A. Force Majeure:

(1) If any event occurs that is beyond Sponsor's reasonable control and that causes or might cause a delay or other type of failure to achieve performance standards described in this MBI despite Sponsor's reasonable efforts ("Force Majeure"), Sponsor will promptly, upon learning of the event, notify the Co-chair Agencies orally or in writing of the cause of the delay or failure, its anticipated duration, the measures that Sponsor has taken or will take to prevent or minimize the delay or failure, and the timetable by which Sponsor proposes to carry out such measures. Sponsor will confirm in writing this information within 14 business days of the initial notification. Failure to comply with these notice requirements precludes Sponsor from asserting Force Majeure for the event and for any additional delay or other types of failure to achieve performance standards described by the MBI that is caused by the event.

(2) If Sponsor demonstrates to the Co-chair Agencies' satisfaction that the delay or failure has been or will be caused by Force Majeure, the Co-chair Agencies will jointly extend times for performance of related activities, or jointly approve remedial action or adaptive management, under this MBI as appropriate. Circumstances or events constituting Force Majeure might include but are not limited to acts of God, unforeseen strikes or work stoppages, fire, explosion, riot, sabotage, or war. Normal inclement weather, increased cost of performance, or changed business or economic circumstances will not be considered Force Majeure.

B. Dispute Resolution:

(1) If Sponsor disagrees with Co-chair Agencies regarding any matter relating to this MBI, Sponsor will promptly notify the Co-chair Agencies in writing of Sponsor's objection. The Co-chair Agencies and Sponsor will then make a good-faith effort to resolve the disagreement within 14 business days of Sponsor's written objection. At the end of the 14-business day period, the Co-chair Agencies will provide Sponsor with a written statement of their position. Upon Sponsor's request, the Co-chair Agencies' management may discuss the disputed matter with Sponsor and provide Sponsor with the Co-chair Agencies' final position in writing as soon as practicable after receipt of Sponsor's request.

(2) If Sponsor refuses or fails to follow Co-chair Agencies' final position, and Co-chair Agencies seek to enforce their final position, the parties are generally entitled to such rights, remedies, and defenses as are provided by applicable law.

(3) During the pendency of any dispute resolution under this subsection, the time for completion of obligations or specific performance standards affected by such dispute is extended for a period of time not to exceed the actual time taken to resolve the dispute. Obligations or performance standards, in part or in whole, that are not affected by the dispute must be completed in accordance with the applicable schedule described in this MBI. The Co-Chair Agencies retain the discretion to determine whether this dispute resolution process is applicable to any issue in dispute pertaining to default under this MBI. Co-chair Agencies will determine whether a credit release based on a provision under dispute will be delayed until resolution of the dispute. Remedies upon default applied by the Co-Chair Agencies will remain in effect during the pendency of the dispute resolution period.

C. Termination of or Withdrawal from MBI, and Transfer of Credits:

(1) Events of Termination: This MBI will terminate upon the occurrence of the following:

a. If the initiation of construction as described in the Mitigation Plan (**Exhibit C**), to include planting of vegetation, has not occurred within three (3) years from the signing of this MBI by the Co-chair Agencies, and no credit transaction has occurred, unless the Co-chair Agencies determine that circumstances warrant an extension. Any extensions must be approved by the Co-chair Agencies in writing.

b. After the passage of 14 calendar days following the Co-chair Agencies' written notice of termination to the Sponsor as a remedy upon default, as described in Section 5.E.

(2) Termination by Sponsor: The Sponsor may terminate this MBI at any time prior to the first credit transfer. Termination of the MBI does not alter Sponsor responsibilities for compliance with any Corps or DSL authorization for removal or fill work conducted on the Bank Property. The Sponsor shall provide at least 14 calendar days' written notice to DSL and the Corps prior to the Sponsor's termination. The notice shall state the effective date of the Sponsor's termination.

(3) Withdrawal by the Corps: The Corps may withdraw from this MBI at its sole discretion if: (a) DSL denies a Corps request for DSL to make a claim on a financial assurance instrument, as described in Section III.D., or (b) the Corps determines the Bank is not meeting performance standards or the Sponsor is not complying with the terms of the MBI. Should either of these events occur, the Corps will generally endeavor to utilize those appropriate measures listed in Section V.E. (Default) first, prior to withdrawing. The Corps shall provide at least 14 calendar days' written notice to the Sponsor and DSL prior to the Corps' withdrawal. The notice shall state the effective date of the Corps' withdrawal.

The Corps may withdraw from this MBI immediately upon the Corps' written notice to the Sponsor and DSL if federal laws, rules, regulations, or guidelines are modified or interpreted in such a way that the Corps' performance under this MBI is prohibited.

The Corps' withdrawal under this subsection would terminate the MBI for purposes of the Corps' Regulatory Program and bar the recognition of any future credits as mitigation for impacts to waters of the United States authorized through Department of the Army permits. The Corps' rights and obligations under this MBI shall terminate upon the effective date of the Corps' withdrawal, provided that the Corps shall continue coordinating with DSL on credit ledger recordkeeping.

(4) Withdrawal by DSL:

DSL may withdraw from this MBI at its sole discretion if the Corps denies a DSL request for the Corps to make a claim on a financial assurance instrument, as described in Section III.D. DSL shall provide at least 14 days' written notice to the Sponsor and the Corps prior to DSL's withdrawal. The notice shall state the effective date of DSL's withdrawal.

DSL may withdraw from this MBI immediately upon DSL's written notice to the Sponsor and the Corps if federal or state laws, rules, regulations or guidelines are modified or interpreted in such a way that DSL's performance under this MBI is prohibited.

DSL's withdrawal under this sub-section would terminate the MBI for DSL regulatory purposes and bar the recognition of any future credits as mitigation for impacts to waters of the State authorized through DSL permits. DSL's rights and obligations under this MBI shall terminate upon the effective date of DSL's withdrawal, provided that DSL shall continue coordinating with the Corps on credit ledger recordkeeping.

(5) Surviving Obligations: In the event of termination, or of withdrawal by any party, the Sponsor agrees to perform and fulfill all obligations under this MBI relating to credits that were sold or transferred prior to or at the time of termination or of withdrawal by any party. In the event this MBI is terminated prior to the transfer of all authorized credits, any remaining credits under this MBI shall be extinguished and will no longer be available for transfer.

D. Transfer, Successors, and Assigns

(1) Transfer during Establishment Period:

a) Transfer of Sponsor's Requirements Excluding the LTMP

Any transfer or assignment of any portion of or interest in the Bank shall be subject to the requirement that the transferee or assignee assume all the necessary requirements for the Bank as laid out in this MBI, according to the terms of the separate agreement, and the Sponsor remains responsible for any and all requirements of the MBI not properly transferred or assigned.

If the transfer or assignment of any interest, other than the site protection instrument which shall be appropriately recorded then returned to the co-chair agencies, is to a party other than a successor, the receiving party must accept the rights and obligations transferred to them by signing a written amendment to the MBI detailing the transferred or assigned rights and responsibilities. The Sponsor and the Co-chair Agencies shall also sign the amendment and, if necessary, comply with DSL and Corps regulatory requirements for permit transfers. Transfer or assignment of any portion of or interest in the Bank shall be subject to the requirement that any funds pledged toward the long-term management funding mechanism shall continue to be accrued and expended in a manner consistent with this MBI and the LTMP. Transfer or assignment is also subject to the Co-chair Agencies finding that the financial assurance amount is adequate for the current circumstances and is secured prior to the transfer or assignment of any portion of or interest in the Bank.

b) Transfer of Long-term Management Responsibilities

Prior to Bank closure the Sponsor may choose to transfer long-management responsibilities to another party by proposing an amendment to the LTMP. The proposal must sufficiently describe which responsibilities the Sponsor is transferring to the proposed long-term manager, when the transfer would occur (e.g. before or after Bank closure), and the proposed long-term manager's fitness to accept and carry out these responsibilities. If the proposed long-term manager is unwilling to sign the amendment to the LTMP, the Co-chair Agencies must be provided with documentation showing proof of the proposed long-term manager's acceptance of the proposed responsibilities to be transferred. Any responsibilities not properly transferred to the proposed long-term manager shall remain the responsibility of the Sponsor.

The Co-chair Agencies will review these materials to determine whether the proposal provides a complete replacement of the terms and conditions of the original LTMP and/or if further documentation is required before they approve the transfer. If these criteria are met, the Co-chair Agencies wouldapprove transfer of long-term management responsibility to the proposed long-term manager by executing an amendment to the LTMP according to the terms of the MBI.

(2) Transfer during the Long-Term Management Period:

After Bank closure, the transfer provision of the LTMP shall control the transfer or assignment of rights and responsibilities. Transfer of the site protection instrument recorded on the title (Exhibit F), shall require notice to DSL and to the Corps when there are changes in land ownership or in the identity of a conservation easement holder. The Co-chair Agencies may use this notice as an opportunity to inform the new party of any federal or state regulations or permits that would apply to future removal or fill activities in the waters of the State or waters of the United States within the Bank Property.

E. Specific Language of MBI Shall Be Controlling: The Sponsor and Co-chair Agencies intend the provisions of this MBI and each of the documents incorporated by reference in it to be consistent with each other, and for each document to be binding in accordance with its terms. To the fullest extent possible, these documents shall be interpreted in a manner that avoids or limits any conflict between or among them. However, if and to the extent that specific language in this MBI conflicts with specific language in any document that is incorporated into this MBI by reference, the specific language within the MBI shall control. The captions and headings of this MBI are for convenient reference only, and shall not define or limit any of its terms or provisions.

F. Notices: Except as otherwise provided herein, any notice, demand, approval, request, or other communication permitted or required by this MBI shall be in writing and deemed given when delivered personally, sent by receipt-confirmed facsimile, or sent by recognized overnight delivery service, addressed as set forth below, or five calendar days after deposit in the U.S. mail, postage prepaid, and addressed as set forth below.

DCMB LLC
6770 Canyon Drive
Portland, OREGON 97225
(503)292-8261

U.S. Army Corps of Engineers
CENWP-OD-G Mitigation Program Manager
Eugene Field Office
211 E. Seventh Ave., Suite 105
Eugene Oregon 97401-2722

Oregon Department of State Lands
775 Summer Street NE, Suite 100
Salem, Oregon 97301-1279

G. Entire MBI: This MBI, and all exhibits, appendices, schedules and agreements referred to in this MBI, constitute the final, complete, and exclusive statement of the terms of the agreement between and among the parties pertaining to the Bank, and supersede all prior and contemporaneous discussions, negotiations, understandings or agreements of the parties. The respective DSL and/or Corps permits for construction of the Bank are incorporated herein by reference, otherwise, no other agreement, statement, or promise made by the parties, or to any employee, officer, or agent of the parties, which is not contained in this MBI or incorporated herein by reference, shall be binding or valid, with respect to the subject matter hereof. No alteration or variation of this instrument shall be valid or binding unless contained in a written amendment, approved by the Co-chair Agencies and executed by the parties. Each of the parties acknowledges that no representation, inducement, promise or agreement, oral or otherwise, has been made by any of the other parties or anyone acting on behalf of any of the parties unless the same has been embodied herein.

H. Modifications: Prior to Bank closure, this MBI, including its exhibits, may be amended or modified only with the written approval of the Sponsor and Co-chair

Agencies. In the event the Sponsor determines that modifications must be made in the Mitigation Plan to ensure successful establishment and operation of the Bank, the Sponsor shall submit a written request for such modification to the Co-chair Agencies. The Co-chair Agencies may consult with the IRT regarding amendment or modification of the MBI. The Co-chair Agencies' approval will not be unreasonably withheld or denied.

I. Invalid Provisions: If a court of competent jurisdiction holds any term or provision of this MBI to be invalid or unenforceable, in whole or in part, for any reason or as to any party, the validity and enforceability of the remaining terms and provisions, or portions of them, shall not be affected unless an essential purpose of this MBI would be defeated by loss of the invalid or unenforceable provision or its invalidity or unenforceability as to any party.

J. Counterparts: This MBI may be executed in multiple counterparts, each of which shall be deemed an original and all of which together shall constitute a single executed Instrument.

K. Binding: This MBI shall be immediately, automatically, and irrevocably binding upon the Sponsor and its heirs, successors, assigns and legal representatives upon signing by the Sponsor, the Corps, and DSL.

L. Liability of Co-chair Agencies: The responsibility for financial success and risk to the investment initiated by the Sponsor rests solely with the Sponsor. The Co-chair Agencies that are parties to this MBI administer their respective regulatory programs and make no guarantee of the financial success of mitigation banks, specific individuals, or entities. Accordingly, there is no guarantee of profitability for any individual mitigation bank. Sponsors should not construe this MBI as a guarantee in any way that the Co-chair Agencies will ensure sale of credits from this Bank or that the Co-chair Agencies will forgo other mitigation options that may also serve the public interest. Because the Co-chair Agencies do not control the number of mitigation banks proposed nor the resulting market impacts upon success or failure of individual banks, market studies of the potential and future demand for bank credits are the sole responsibility of the Sponsor. The Sponsor agrees to release, indemnify, protect, and hold harmless the Co-chair Agencies or their agents from any claims arising from their use of financial assurances to implement the mitigation plan or remediate performance failures on the Bank Property.

M. Grant Program Participation: State and Federal funds designated for voluntary restoration projects shall not be used to generate mitigation credits sold for profit.

N. Suspension of Credits: The Co-chair Agencies may suspend the sale of credits upon a determination that information contained in this MBI was falsely represented or that the Bank is not performing in accordance with this MBI. Credit suspension also may occur under the terms of Default (see V.E.).

O. Sponsor Identity: If the Bank Sponsor is a business entity, a Certificate of Incumbency has been provided to the Co-chair Agencies for their files prior to approval of this MBI, to certify that the individual signing below is authorized to do so. In addition, if the Sponsor is a closely held Corporation, Limited Partnership, LLC, or Trust, then each shareholder, partner, member, trustee, or other principal shall have provided to the Co-chair Agencies their joint and several personal guarantee(s) securing compliance with the mitigation obligations. The Sponsor agrees to maintain the business entity in active status until all mitigation obligations have been satisfied, at Bank closure. The Sponsor agrees to notify the Co-chair Agencies prior to dissolution, bankruptcy, or changes to the shareholders, partners, members, trustees or other principals of the business, and to promptly provide to the Co-chair Agencies personal guaranty documents for any new shareholders, partners, members, trustees, or other principals.

P. Terminology: Corps approval of this MBI constitutes the regulatory approval required for the DAIRY CREEK MITIGATION BANK to be used to provide compensatory mitigation for Department of the Army permits pursuant to 33 C.F.R. § 332.8(a)(1). This MBI is not a contract between the Sponsor or Property owner and the Corps or any other agency of the federal government. Any dispute arising under this MBI will not give rise to any claim by the Sponsor or Property owner for monetary damages. This provision is controlling notwithstanding any other provision or statement in the MBI to the contrary.

IN WITNESS WHEREOF, the parties hereto have executed this MBI on the date herein below last signed by the Co-chair agencies.

By the Sponsor:

Robert Bolosky | 7-27-2022
DCMB LLC, Sponsor/ Owner | Date
Manager

By the Co-chair Agencies:

____________________ | ____________
Michael Helton, PMP | Date
Colonel, Corps of Engineers
District Commander

Vicki L. Walker, Director
Digitally signed by Vicki L. Walker, Director
Date: 2022.08.04 17:01:51 -07'00'

Vicki Walker, Director | Date
Oregon Department of State Lands

Exhibit A
Property Legal Description and Maps

Please see the attached Exhibit A which includes a May 2022 civil survey map and legal description of the Bank project area. Phase 1 is referred to as "Parcel 1", and Phase 2 is referred to as "Parcel 2".

PACIFIC COMMUNITY DESIGN

EXHIBIT A

May 10, 2022

LEGAL DESCRIPTION Job No. 501-032
Parcel 1

A portion of "Adjusted Tax Lot 800", as described in Document No. 2017-002188, Washington County Deed Records, in the Northeast Quarter of Section 36, Township 2 North, Range 4 West, Willamette Meridian, Washington County, State of Oregon, more particularly described as follows:

BEGINNING at the Southwest corner of the Northeast Quarter of said Section 36;

thence along the westerly line of said Northeast Quarter of Section 36, North 00°01' 28" West, a distance of 1593.20 feet, more or less, to the center of West Dairy Creek;

thence along said center of West Dairy Creek the following six courses:

North 41°25' 55" East, a distance of 94.96 feet,

North 54°46' 40" East, a distance of 71.85 feet,

North 66°31' 17" East, a distance of 59.43 feet,

North 40°04' 02" East, a distance of 56.32 feet,

North 12°00' 13" East, a distance of 35.80 feet,

North 05°20' 42" West, a distance of 74.73 feet to the center of a drainage ditch;

thence along said center of a drainage ditch the following seven courses:

North 85°02' 29" East, a distance of 20.78 feet,

North 62°04' 36" East, a distance of 99.67 feet,

North 60°05' 31" East, a distance of 130.59 feet,

North 59°50' 10" East, a distance of 243.96 feet,

North 57°57' 05" East, a distance of 141.06 feet,

North 59°15' 20" East, a distance of 83.77 feet,

North 68°48' 28" East, a distance of 17.60 feet to said center of West Dairy Creek, thence along said center of West Dairy Creek the following thirteen courses:

North 68°48' 29" East, a distance of 29.85 feet,

North 85°28' 48" East, a distance of 58.52 feet,

North 62°30' 00" East, a distance of 75.31 feet,

North 51°26' 35" East, a distance of 67.61 feet,

North 60°25' 27" East, a distance of 41.90 feet,

North 69°38' 05" East, a distance of 104.80 feet,

North 70°19' 17" East, a distance of 160.32 feet,

North 02°21' 46" East, a distance of 5.99 feet,

North 76°01' 49" East, a distance of 24.76 feet,

North 84°26' 49" East, a distance of 16.41 feet,

North 88°26' 48" East, a distance of 33.04 feet,

South 89°02' 48" East, a distance of 29.47 feet,

North 70°43' 34" East, a distance of 36.26 feet to the Southwest corner of the land described in Book 159 Page 614, Washington County Deed Records;

thence along the southerly line of said land, South 86°07' 54" East, a distance of 57.93 feet;

thence continuing along said southerly line, South 86°23' 21" East, a distance of 195.23 feet to the Northwest corner of Parcel I, Book 583 Page 388, Washington County Deed Records;

thence along the westerly line of said Parcel I, South 03°36' 39" West, a distance of 115.44 feet to the Southwest corner of said Parcel I;

thence along the southerly line of said Parcel I, South 86°23' 21" East, a distance of 230.00 feet to the Southeast corner of said Parcel I;

thence along the easterly line of said Parcel I, North 44°30' 39" East, a distance of 122.18 feet to an angle point;

thence continuing along said easterly line, South 86°23' 21" East, a distance of 50.00 feet to an angle point;

thence continuing along said easterly line, North 44°30' 39" East, a distance of 30.55 feet to the Northeast corner of said Parcel I;

thence along the easterly line of the land described in Book 583 Page 388, Washington County Deed Records, North 51°59' 39" East, a distance of 50.40 feet to the westerly line of "Adjusted Tax Lot 600", said Document No. 2017-002188;

thence along said westerly line of "Adjusted Tax Lot 600" the following thirty two courses:

South 01°22' 44" East, a distance of 57.44 feet,

South 16°22' 15" West, a distance of 53.53 feet,

South 01°41' 04" West, a distance of 41.08 feet,

South 06°34' 51" West, a distance of 57.41 feet,

South 01°11' 40" East, a distance of 49.19 feet,

South 00°32' 07" West, a distance of 74.28 feet,

South 06°23' 01" East, a distance of 45.41 feet,

South 15°42' 06" East, a distance of 54.81 feet,

South 33°40' 34" East, a distance of 33.78 feet,

South 35°08' 14" East, a distance of 45.92 feet,

South 39°16' 00" East, a distance of 88.34 feet,

South 00°00' 00" East, a distance of 394.86 feet,

South 64°03' 46" West, a distance of 32.68 feet,

North 78°43' 51" West, a distance of 39.33 feet,

North 88°40' 13" West, a distance of 44.37 feet,

North 79°31' 18" West, a distance of 32.26 feet,

South 54°12' 05" West, a distance of 102.65 feet,

South 30°35' 44" West, a distance of 88.76 feet,

South 09°56' 33" West, a distance of 137.01 feet,

South 16°03' 21" West, a distance of 113.96 feet,

South 13°56' 17" West, a distance of 143.90 feet,

South 05°57' 27" East, a distance of 74.52 feet,

South 29°04' 32" East, a distance of 76.00 feet,

South 43°12' 55" East, a distance of 52.09 feet,

South 51°20' 25" East, a distance of 157.34 feet,

South 31°48' 31" West, a distance of 124.09 feet,

South 64°55' 13" West, a distance of 79.71 feet,

South 61°39' 19" West, a distance of 71.55 feet,

South 73°16' 00" West, a distance of 90.30 feet,

South 74°43' 59" West, a distance of 86.22 feet,

South 66°55' 58" West, a distance of 50.90 feet,

South 57°41' 40" West, a distance of 96.82 feet,

thence leaving said westerly line of "Adjusted Tax Lot 600", South 63°31' 08" West, a distance of 363.71 feet;

thence South 03°19' 44" West, a distance of 187.33 feet to a point on said westerly line of "Adjusted Tax Lot 600";

thence along said westerly line of "Adjusted Tax Lot 600", South 00°01' 33" East, a distance of 59.95 feet to a point on the southerly line of the Northeast Quarter of said Section 36;

thence along said southerly line, South 89°44' 50" West, a distance of 1258.75 feet to the POINT OF BEGINNING.

Containing 97.45 acres, more or less.

Basis of bearings being the westerly line of the Northeast Quarter of said Section 36, per Survey No. 30,865, Washington County Survey Records.

REGISTERED
PROFESSIONAL
LAND SURVEYOR

DocuSigned by:
Travis Jansen
33055EFA07B841B...

OREGON
JULY 9, 2002
TRAVIS C. JANSEN
57751

RENEWS: 6/30/2023

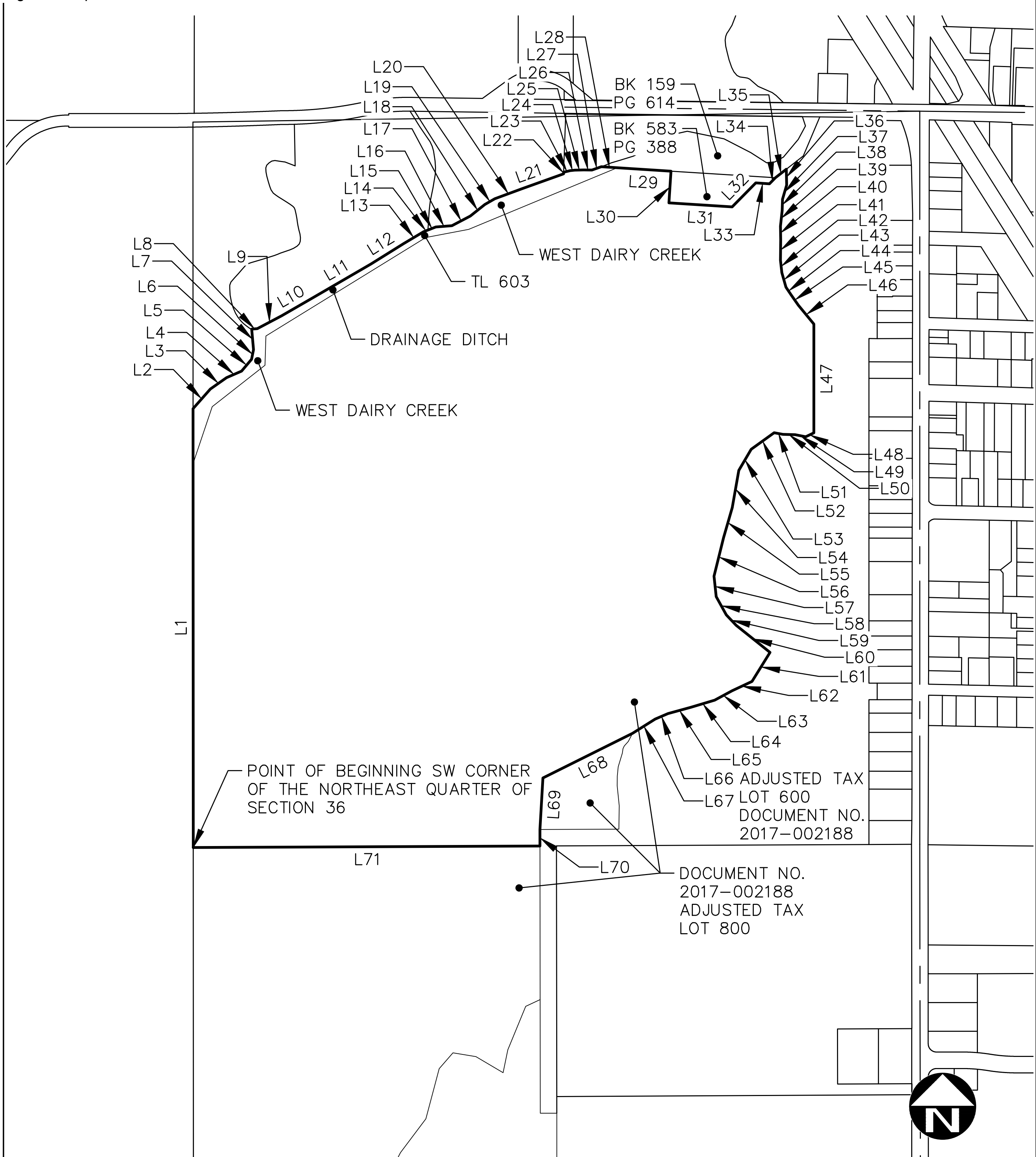

EXHIBIT A

PARCEL 1

DRAWN BY: FAM	DATE: 05/10/22
REVIEWED BY: TCJ	DATE: 05/10/22
PROJECT NO.: 501-032	
SCALE: 1"=500'	
PAGE 5 OF 6	

PACIFIC COMMUNITY DESIGN

12564 SW Main St
Tigard, OR 97223
[T] 503-941-9484
[F] 503-941-9485

LINE TABLE

LINE	BEARING	LENGTH
L1	N00°01'28"W	1593.20'
L2	N41°25'55"E	94.96'
L3	N54°46'40"E	71.85'
L4	N66°31'17"E	59.43'
L5	N40°04'02"E	56.32'
L6	N12°00'13"E	35.80'
L7	N05°20'42"W	74.73'
L8	N85°02'29"E	20.78'
L9	N62°04'36"E	99.67'
L10	N60°05'31"E	130.59'
L11	N59°50'10"E	243.96'
L12	N57°57'05"E	141.06'
L13	N59°15'20"E	83.77'
L14	N68°48'28"E	17.60'
L15	N68°48'29"E	29.85'
L16	N85°28'48"E	58.52'
L17	N62°30'00"E	75.31'
L18	N51°26'35"E	67.61'
L19	N60°25'27"E	41.90'
L20	N69°38'05"E	104.80'
L21	N70°19'17"E	160.32'
L22	N02°21'46"E	5.99'
L23	N76°01'49"E	24.76'
L24	N84°26'49"E	16.41'
L25	N88°26'48"E	33.04'
L26	S89°02'48"E	29.47'
L27	N70°43'34"E	36.26'
L28	S86°07'54"E	57.93'
L29	S86°23'21"E	195.23'
L30	S03°36'39"W	115.44'

LINE TABLE

LINE	BEARING	LENGTH
L31	S86°23'21"E	230.00'
L32	N44°30'39"E	122.18'
L33	S86°23'21"E	50.00'
L34	N44°30'39"E	30.55'
L35	N51°59'39"E	50.40'
L36	S01°22'44"E	57.44'
L37	S16°22'15"W	53.53'
L38	S01°41'04"W	41.08'
L39	S06°34'51"W	57.41'
L40	S01°11'40"E	49.19'
L41	S00°32'07"W	74.28'
L42	S06°23'01"E	45.41'
L43	S15°42'06"E	54.81'
L44	S33°40'34"E	33.78'
L45	S35°08'14"E	45.92'
L46	S39°16'00"E	88.34'
L47	S00°00'00"E	394.86'
L48	S64°03'46"W	32.68'
L49	N78°43'51"W	39.33'
L50	N88°40'13"W	44.37'
L51	N79°31'18"W	32.26'
L52	S54°12'05"W	102.65'
L53	S30°35'44"W	88.76'
L54	S09°56'33"W	137.01'
L55	S16°03'21"W	113.96'
L56	S13°56'17"W	143.90'
L57	S05°57'27"E	74.52'
L58	S29°04'32"E	76.00'
L59	S43°12'55"E	52.09'
L60	S51°20'25"E	157.34'

LINE TABLE

LINE	BEARING	LENGTH
L61	S31°48'31"W	124.09'
L62	S64°55'13"W	79.71'
L63	S61°39'19"W	71.55'
L64	S73°16'00"W	90.30'
L65	S74°43'59"W	86.22'
L66	S66°55'58"W	50.90'
L67	S57°41'40"W	96.82'
L68	S63°31'08"W	363.71'
L69	S03°19'44"W	187.33'
L70	S00°01'33"E	59.95'
L71	S89°44'50"W	1258.75'

EXHIBIT A

PARCEL 1

DRAWN BY: FAM DATE: 05/10/22

REVIEWED BY: TCJ DATE: 05/10/22

PROJECT NO.: 501-032

SCALE: N/A

PACIFIC COMMUNITY DESIGN

12564 SW Main St
Tigard, OR 97223
[T] 503-941-9484
[F] 503-941-9485

PACIFIC COMMUNITY DESIGN

EXHIBIT A

May 10, 2022

LEGAL DESCRIPTION Job No. 501-032
Parcel 2

A portion of "Adjusted Tax Lot 800", as described in Document No. 2017-002188, Washington County Deed Records, in the Southeast Quarter of Section 36, Township 2 North, Range 4 West, Willamette Meridian, Washington County, State of Oregon, more particularly described as follows:

BEGINNING at the Southwest corner of the Northeast Quarter of said Section 36;

thence along the southerly line of said Northeast Quarter, North 89°44' 50" East, a distance of 1258.75 feet to a point on the westerly line of "Adjusted Tax Lot 600", said Document No. 2017-002188;

thence along said westerly line of "Adjusted Tax Lot 600", South 00°04' 25" East, a distance of 557.78 feet;

thence leaving said westerly line, South 65°04' 13" West, a distance of 57.89 feet;

thence South 22°20' 45" West, a distance of 170.65 feet;

thence South 11°41' 27" West, a distance of 84.80 feet;

thence North 59°15' 29" West, a distance of 114.50 feet;

thence North 80°40' 46" West, a distance of 84.68 feet;

thence South 41°04' 06" West, a distance of 76.28 feet;

thence South 14°39' 32" West, a distance of 58.49 feet;

thence South 14°51' 14" West, a distance of 130.12 feet;

thence South 37°00' 06" West, a distance of 152.96 feet;

thence South 26°49' 57" West, a distance of 221.88 feet;

thence South 33°13' 47" West, a distance of 114.05 feet;

thence South 64°39' 22" West, a distance of 52.10 feet;

thence South 45°56' 27" West, a distance of 68.36 feet;

12564 SW Main Street, Tigard, OR 97223 ♦ [T] 503-941-9484 [F] 503-941-9485

thence South 00°27' 34" East, a distance of 53.79 feet;

thence South 25°56' 07" East, a distance of 57.62 feet to a point on the northerly Right-of-Way line of Wilson River Highway No. 6;

thence along said northerly Right-of-Way line, North 82°25' 12" West, a distance of 523.31 feet to a point on the westerly line of the Southeast Quarter of said Section 36;

thence along said westerly line, North 00°01' 28" West, a distance of 1507.08 feet to the POINT OF BEGINNING.

Containing 34.68 acres, more or less.

Basis of bearings being the westerly line of the Southeast Quarter of said Section 36, per Survey No. 30,865, Washington County Survey Records.

REGISTERED
PROFESSIONAL
LAND SURVEYOR

DocuSigned by:
Travis Jansen
33055FEA07B841B...

OREGON
JULY 9, 2002
TRAVIS C. JANSEN
57751

RENEWS: 6/30/2023

Pacific Community Design, Inc.
12564 SW Main Street, Tigard, OR 97223 ♦ [T] 503-941-9484 [F] 503-941-9485

LINE TABLE		
LINE	BEARING	LENGTH
L72	N89°44'50"E	1258.75'
L73	S00°04'25"E	557.78'
L74	S65°04'13"W	57.89'
L75	S22°20'45"W	170.65'
L76	S11°41'27"W	84.80'
L77	N59°15'29"W	114.50'
L78	N80°40'46"W	84.68'
L79	S41°04'06"W	76.28'
L80	S14°39'32"W	58.49'
L81	S14°51'14"W	130.12'
L82	S37°00'06"W	152.96'
L83	S26°49'57"W	221.88'
L84	S33°13'47"W	114.05'
L85	S64°39'22"W	52.10'
L86	S45°56'27"W	68.36'
L87	S00°27'34"E	53.79'
L88	S25°56'07"E	57.62'
L89	N82°25'12"W	523.31'
L90	N00°01'28"W	1507.08'

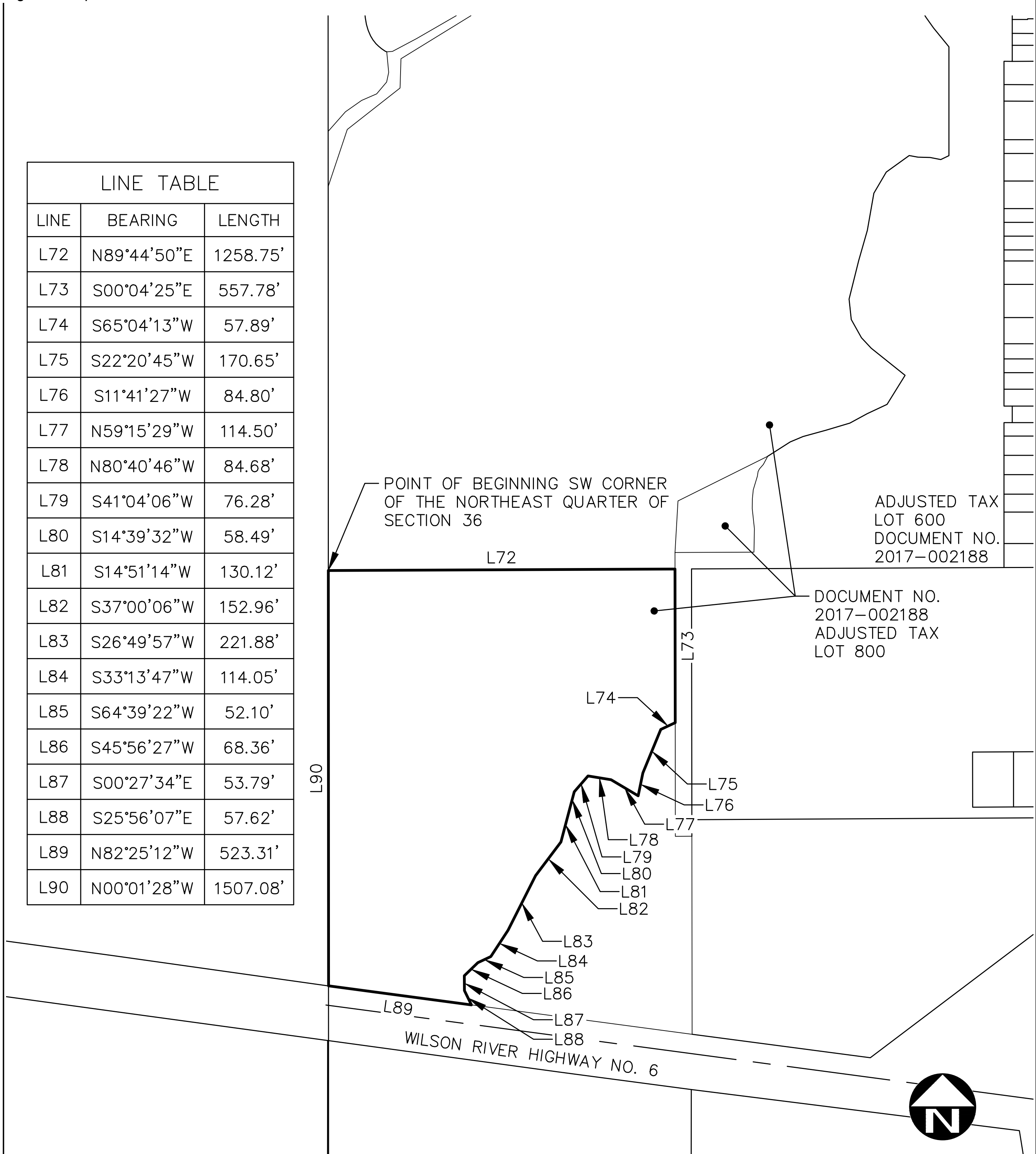

EXHIBIT A
PARCEL 2

DRAWN BY: FAM DATE: 05/10/22
REVIEWED BY: TCJ DATE: 05/10/22
PROJECT NO.: 501-032
SCALE: 1"=500'

PACIFIC COMMUNITY DESIGN
12564 SW Main St
Tigard, OR 97223
[T] 503-941-9484
[F] 503-941-9485

Exhibit B
Preliminary Property Assessment and Warranty
And Preliminary Title Report

PROPERTY ASSESSMENT and WARRANTY for

Dairy Creek Mitigation Bank

This Property Assessment and Warranty ("Property Assessment") is made as of this 3rd day of June, 2022, by *[DCMB LLC]* ("Property Owner"), for the benefit of DSL and the Corps, which agencies are jointly referred to in this Property Assessment as the "Signatory Agencies." Property Owner acknowledges that this Property Assessment and the statements in it may be conclusively relied upon by the Co-chair Agencies in entering into the Mitigation Bank Instrument (MBI) for the Dairy Creek Mitigation Bank.

This Property Assessment provides a summary and explanation of each recorded or unrecorded lien or encumbrance on, or interest in, the Bank Property as defined in Exhibit A, including, without limitation, each exception listed in the Preliminary Title Report issued by [*Fidelity National Title, February 15, 2022, report number 45142036724*].

Property Owner covenants, represents and warrants to each of the Signatory Agencies as follows:

1. Property Owner is the sole owner in fee simple of certain real property in Exhibit A (the "Bank Property"), as legally described in the Preliminary Title Report. Property Owner has, and upon the recordation of the Conservation Easement Property Owner shall have, good, marketable and indefeasible fee simple title to the Bank Property subject only to any exceptions approved in writing by the Signatory Agencies in advance of recordation.

2. The Bank Property is available to be burdened by the Conservation Easement for the conservation purposes identified in the Conservation Easement, in accordance with the MBI.

3. The Bank Property includes legal access to and from [*NW Main Street*]. This access easement will be identified (surveyed) and recorded prior to the first credit release.

4. A true, accurate and complete listing and explanation of each recorded or unrecorded lien or encumbrance on, or possessory or non-possessory interest in, the Bank Property has been provided to the Co-chair Agencies as an attachment and incorporated

by reference in this Property Assessment. Except as disclosed in this attachment, there are no outstanding mortgages, liens, encumbrances or other interests in the Bank Property including, without limitation, mineral interests.

5. Prior to closure of the Bank and/or recordation of the Conservation Easement, or transfer of title to a conservation entity approved by the co-chairs, Property Owner shall certify to the Signatory Agencies in writing that this Property Assessment remains true, accurate and complete in all respects; no further encumbrances have occurred other than as specified in the MBI.

6. Property Owner has no knowledge or notice of any legal or other restrictions upon the use of the Bank Property for conservation purposes, or affecting its Conservation Values, as described in the Conservation Easement, or any other matters that may adversely affect title to the Bank Property or interfere with the establishment of a mitigation bank thereon.

7. Property Owner has not granted any options, or committed or obligated to sell the Bank Property or any portion thereof, except as disclosed in writing to and agreed upon in writing by the Signatory Agencies.

8. The following Attachments are incorporated by reference in this Property Assessment:

a) Attachment 1 – **Preliminary Title Report**
b) Attachment 2 - Summary and Explanation of Encumbrances
c) Attachment 3 – Encumbrance Documents
d) Attachment 4 - Map(s) of any encumbrances that have a location
e) Attachment 5 -Subordination Agreements, as needed

PROPERTY OWNER

Robert Bobosky

Robert Bobosky, Manager, DCMB LLC

6/3/22

date

Fidelity National Title
Company of Oregon

PRELIMINARY REPORT

In response to the application for a policy of title insurance referenced herein Fidelity National Title Company of Oregon hereby reports that it is prepared to issue, or cause to be issued, as of the specified date, a policy or policies of title insurance describing the land and the estate or interest hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an exception herein or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations or Conditions of said policy forms.

The printed Exceptions and Exclusions from the coverage of said policy or policies are set forth in Exhibit One. Copies of the policy forms should be read. They are available from the office which issued this report.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby.

The policy(s) of title insurance to be issued hereunder will be policy(s) of Fidelity National Title Insurance Company, a/an Florida corporation.

Please read the exceptions shown or referred to herein and the Exceptions and Exclusions set forth in Exhibit One of this report carefully. The Exceptions and Exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.

It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects and encumbrances affecting title to the land.

This preliminary report is for the exclusive use of the parties to the contemplated transaction, and the Company does not have any liability to any third parties nor any liability until the full premium is paid and a policy is issued. Until all necessary documents are placed of record, the Company reserves the right to amend or supplement this preliminary report.

Countersigned

5400 SW Meadows Road, Suite 100, Lake Oswego, OR 97035
(503)684-9236 FAX (503)684-7274

PRELIMINARY REPORT

ESCROW OFFICER: Michelle Couch
Michelle.Couch@fnf.com
503-684-9236

ORDER NO.: 45142036724
Supplement 2: Amend the legal description

TITLE OFFICER: Jason Parkrosz

TO: Fidelity National Title Company of Oregon
5400 SW Meadows Road, Suite 100
Lake Oswego, OR 97035

ESCROW LICENSE NO.: 850600361
OWNER/SELLER: Wolverine Financial
BUYER/BORROWER: TBD
PROPERTY ADDRESS: T2N, Section 36, portion of tax lot 800 and all of tax lot 603., Banks, OR 97106

EFFECTIVE DATE: February 15, 2022, 08:00 AM

1. THE POLICY AND ENDORSEMENTS TO BE ISSUED AND THE RELATED CHARGES ARE:

	AMOUNT	PREMIUM
ALTA Owner's Policy 2006 **Owner's Standard**	$ TBD	$ TBD
ALTA Loan Policy 2006 **Extended Lender's** **Proposed Insured:** TBD	$ TBD	$ TBD
OTIRO 209.10-06 - Restrictions, Encroachments, Minerals - Current Violations (ALTA 9.10-06)		$ 100.00
OTIRO 222-06 - Location (ALTA 22-06)		$ 0.00
OTIRO 208.1-06 - Environmental Protection Lien (ALTA 8.1-06)		$ 0.00

2. THE ESTATE OR INTEREST IN THE LAND HEREINAFTER DESCRIBED OR REFERRED TO COVERED BY THIS REPORT IS:

   A Fee

3. TITLE TO SAID ESTATE OR INTEREST AT THE DATE HEREOF IS VESTED IN:

   DCMB, LLC, an Oregon limited liability company

4. THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF WASHINGTON, STATE OF OREGON, AND IS DESCRIBED AS FOLLOWS:

   SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

EXHIBIT "A"

Legal Description

PARCEL I

A portion of the Northeast and Southeast quarters of section 36, Township 2 North, Range 4 West of Willamette Meridian, in Washington County, Oregon and being more particularly described as follows:

Beginning at a point on the East line of the Northwest quarter of said Southeast quarter of Section 36 from which the Southwest corner of "First Addition to Banks" bears North 00°04'24" West, 970.16 feet and North 89°44'51" East, 1134.42 feet; thence leaving said East line from said beginning point, South 89°55'36" West, 60.00 feet; thence parallel and 60.00 feet Westerly of said East line, North 00°04'24" West, 1029.97 feet to a point 60.00 feet, perpendicular measure, Northerly of the North line of said Southeast quarter of Section 36; thence parallel with and 60.00 feet Northerly of said North line, North 89°44'51" East, 286.79 feet to the flood plain line as determined on 'Parcel I' of Deed Document No. 2007-023227 (Washington County Deed Records); thence along said flood plain line the following courses: North 00°56'17" East, 84.82 feet; thence North 06°10'17" West 73.27 feet; thence North 00°43'16" East 34.50 feet; thence North 05°50'20" East 34.13 feet; thence North 17°00'03" East 51.71 feet; thence North 08°17'18" East 17.00 feet; thence North 26°11'12" East 10.75 feet; thence North 42°04'51" East 21.60 feet; thence North 27°25'49" East 33.60 feet; thence North 57°41'40" East 96.82 feet; thence North 66°55'58" East 50.90 feet; thence North 74°043'59" East 86.22 feet; thence North 73°16'00" East 90.30 feet; thence North 61°39'19" East 71.55 feet; thence North 64°55'13" East 79.71 feet; thence North 31°48'31" East 124.09 feet; thence North 51°20'25" West 157.34 feet; thence North 43°12'55" West 52.09 feet; thence North 29°04'32" West 76.00 feet; thence North 05°57'27" West 74.52 feet; thence North 13°56'17" East 143.90 feet; thence North 16°03'21" East 113.96 feet; thence North 09°56'33" East 137.01 feet; thence North 30°35'44" East 88.76 feet; thence North 54°12'05" East 102.65 feet; thence South 79°31'18" East 32.26 feet; thence South 88°40'13" East 44.37 feet; thence South 78°43'51" East 39.33 feet; thence North 64°03'46" East 32.68 feet; thence North 00°00'00" West 394.86 feet; thence North 39°16'00" West 88.34 feet; thence North 35°08'14" West 45.92 feet; thence North 33°40'34" West 33.78 feet; thence North 15°42'06" West 54.81 feet; thence North 06°23'01" West 45.41 feet; thence North 00°32'07" East 74.28 feet; thence North 01°11'40" West 49.19 feet; thence North 06°34'51" East 57.41 feet; thence North 01°41'04" East 41.08 feet; thence North 16°22'15" East 53.53 feet; thence North 01°22'44" West 57.44 feet to the boundary of 'Parcel I' of Deed Document No. 2007-023227; thence leaving said flood plain line along the Northerly boundary of said "Parcel I" the following thirteen (13) courses:
South 51°59'39" West 50.40 feet; thence South 44°30'39" West, 30.55 feet; thence North 86°23'21" West, 50.00 feet; thence South 44°30'39" West, 122.18 feet; thence North 86°23'21" West, 230.00 feet; thence North 03°36'39" East, 115.44 feet; thence North 86°23'21" West, 195.23 feet; thence South 67°29'00" West, 584.12 feet; thence South 79°13'00" West, 158.40 feet; thence South 58°24'00" West, 681.70 feet; thence South 01°48'00" West, 106.30 feet; thence South 51°50'00" West, 243.80 feet; thence South 18°33'00" West, 217.90 feet to the West line of said Northeast quarter of Section 36; thence South 00°01'28" East along said West line, 2900.78 feet to the Northerly right-of-way line of the Wilson River Highway No. 6; thence leaving said West line, South 82°25'12" East along said right-of-way line, 1331.90 feet to said East line of the Southwest quarter of the Southeast quarter of Section 36; thence leaving said right-of-way line, North 00°04'24" West along said East line, 718.43 feet to the point of beginning.

TOGETHER WITH an easement for ingress and egress as described in Deed Recorded January 5, 1966, Book 583, Page 392.

PARCEL II

Beginning at the Southwest corner of the Northeast quarter of Section 36, Township 2 North, Range 4 West of the Willamette Meridian; thence running along the West line of the said Northeast quarter of said Section 36, North 0°03' East 1483.7 feet, more or less, to the center of W. Dairy Creek; thence following up the center of said W. Dairy Creek with all the meanderings thereof in a Northeasterly direction 460.0 feet, more or less, to the junction of said W. Dairy Creek with the Westerly end of drainage ditch; thence following center of said ditch North 58°24'

EXHIBIT "A"

Legal Description

East a distance of 742.0 feet, more or less, to the center of said W. Dairy Creek; thence following up the center of said W. Dairy Creek with all the meanderings thereof in a Northeasterly direction a distance of 283.0 feet, more or less, to the junction of the center of said W. Dairy Creek with the second drainage ditch; thence following up the center of said ditch, North 67°29' East a distance of 340.0 feet, more or less, to the center of said W. Dairy Creek; thence following up the center of said W. Dairy Creek with all the meanderings thereof, in a Northeasterly and Northerly direction a distance of 980.0 feet, more or less, to a point on that North line of said Section 36 which point bears North 89°22' West 422.8 feet from the Northeast corner of said Section; thence along the section line, South 89°22' East 268.0 feet, more or less, to a point on said section line which is North 89°22' West 154.5 feet from the Northeast corner of said Section 26; thence on a line parallel with the East line of said Section 36, South 825.5 feet; thence North 89°22' West 30.0 feet; thence on a line parallel with the East line of said Section 36, South 1835.5 feet to a point on the South line of the Northeast quarter of said Section 36 which point bears South 89°40' West 184.5 feet from the quarter section corner on the East line of said Section 36; thence along the South line of the Northwest quarter of said Section 36, South 89°40' West 2456.9 feet to the place of beginning.

TOGETHER WITH an easement for ingress and egress as described in Deed Recorded January 5, 1966, Book 583, Page 392.

EXCEPT beginning at a point on North section line 356.0 feet North 89°22' West of Northeast section corner; thence South 24°30' West 125.0 feet; thence South 46°0' West 170 feet; thence North 84°54' West 600.0 feet to center of West Dairy Creek; thence meandering Easterly and Northeasterly along said center line to North section line; thence South 89°22' East on North section line 66.8 feet, more or less, to place of beginning.

ALSO EXCEPTING that real property conveyed by Henry J. Vanderzanden, et ux, to the City of Banks by Deed Recorded in Book 583, Page 388, Washington County Records.

AS OF THE DATE OF THIS REPORT, ITEMS TO BE CONSIDERED AND EXCEPTIONS TO COVERAGE IN ADDITION TO THE PRINTED EXCEPTIONS AND EXCLUSIONS IN THE POLICY FORM WOULD BE AS FOLLOWS:

GENERAL EXCEPTIONS:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests or claims, which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.

3. Easements, or claims of easement, which are not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.

4. Any encroachment (of existing improvements located on the Land onto adjoining land or of existing improvements located on adjoining land onto the subject Land), encumbrance, violation, variation or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the subject Land.

5. Any lien or right to a lien for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the Public Records.

SPECIFIC ITEMS AND EXCEPTIONS:

6. [Intentionally Deleted]

7. The Washington County Tax Records disclose a potential additional tax on this account. No liability is assumed for later additions to the tax roll.

   Account No.: R816077
   (Affects Parcel I)

8. The Washington County Tax Records disclose a potential additional tax on this account. No liability is assumed for later additions to the tax roll.

   Account No.: R2201047
   (Affects Parcel II)

9. The Land has been classified as Farmland, as disclosed by the tax roll. If the Land becomes disqualified, said Land may be subject to additional taxes and/or penalties.

10. Rights and easements for navigation and fishery which may exist over that portion of said Land lying beneath the waters of West Fork Dairy Creek.

11. Any adverse claim based upon the assertion that:

    a) Said Land or any part thereof is now or at any time has been below the highest of the high watermarks of West Fork Dairy Creek, in the event the boundary of said West Fork Dairy Creek has been artificially raised or is now or at any time has been below the high watermark, if said West Fork Dairy Creek is in its natural state.

    b) Some portion of said Land has been created by artificial means or has accreted to such portion so created.

    c) Some portion of said Land has been brought within the boundaries thereof by an avulsive movement of West Fork Dairy Creek, or has been formed by accretion to any such portion.

12. Terms and provisions, including obligations for maintenance of easement as established by Oregon Law and by instrument,

    Recording Date: January 5, 1966
    Recording No.: Book 583, Page 392

13. Easement Agreement for sewer and storm water, including the terms and provisions thereof,

    Recording Date: January 24, 1968
    Recording No: Book 678, Page 359
    Between: Henry J. Vanderzanden and Lena Vanderzanden
    And: City of Banks, Oregon, a municipal corporation

14. Existing leases and tenancies, if any, and any interests that may appear upon examination of such leases.

15. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other matters which a correct survey would disclose and which are not shown by the public records.

16. Please be advised that our search did not disclose any open Deeds of Trust of record. If you should have knowledge of any outstanding obligation, please contact the Title Department immediately for further review prior to closing.

17. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below.

Limited Liability Company: DCMB, LLC

a. A copy of its operating agreement, if any, and any and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.

b. If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendment thereto with the appropriate filing stamps.

c. If the Limited Liability Company is member-managed a full and complete current list of members certified by the appropriate manager or member.

d. A current dated certificate of good standing from the proper governmental authority of the state in which the entity was created

e. If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

18. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below.

Limited Liability Company: Wolverine Financial LLC

a. A copy of its operating agreement, if any, and any and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.

b. If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendment thereto with the appropriate filing stamps.

c. If the Limited Liability Company is member-managed a full and complete current list of members certified by the appropriate manager or member.

d. A current dated certificate of good standing from the proper governmental authority of the state in which the entity was created

e. If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

19. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below.

Limited Liability Company: Lone Oak Land & Investment Company, LLC

a. A copy of its operating agreement, if any, and any and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.

b. If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendment thereto with the appropriate filing stamps.

c. If the Limited Liability Company is member-managed a full and complete current list of members certified by the appropriate manager or member.

d. A current dated certificate of good standing from the proper governmental authority of the state in which the entity was created

e. If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

20. Facts, rights, interests or claims which are not shown by the public records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.

To remove this item, the Company will require an affidavit and indemnity on a form supplied by the Company.

21. Any lien or right to a lien for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the public records.

To remove this item, the Company will require an affidavit and indemnity on a form supplied by the Company.

22. Any encroachment (of existing improvements located on the subject Land onto adjoining land or of existing improvements located on adjoining land onto the subject Land), encumbrance, violation, variation or adverse circumstance affecting the title that would be disclosed by an accurate and complete land survey of the subject Land.

The Company will require an inspection of the premises, and this exception may be eliminated or limited as a result thereof.

ADDITIONAL REQUIREMENTS/NOTES:

A. Note: Property taxes for the fiscal year shown below are paid in full.

Fiscal Year: 2021-2022
Amount: $1,817.09
Levy Code: 013.15
Account No.: R816077
Map No.: 2N4360000800
Affects Parcel I

Fiscal Year: 2021-2022
Amount: $22.93
Levy Code: 013.15
Account No.: R2201047
Map No.: 2N4360000603
Affects Parcel II

Prior to close of escrow, please contact the Tax Collector's Office to confirm all amounts owing, including current fiscal year taxes, supplemental taxes, escaped assessments and any delinquencies.

B. Note: We find no Notice of Completion recorded on said Land.

C. Washington County imposes a transfer tax of $1.00 per $1,000 (or fraction thereof) of the selling price in a real estate transfer, unless the county approves an exemption application. Exemption criteria and applications are available at the county's website, see: http://www.co.washington.or.us/AssessmentTaxation/Recording/TransferTaxExemption/index.cfm.

D. In addition to the standard policy exceptions, the exceptions enumerated above shall appear on the final 2006 ALTA Policy unless removed prior to issuance.

E. Note: The name(s) of the proposed insured(s) furnished with this application for title insurance is/are:

No names were furnished with the application. Please provide the name(s) of the buyers as soon as possible.

F. Notice: Please be aware that due to the conflict between federal and state laws concerning the cultivation, distribution, manufacture or sale of marijuana, the Company is not able to close or insure any transaction involving Land that is associated with these activities.

G. Note: The only conveyance(s) affecting said Land, which recorded within 24 months of the date of this report, are as follows:

Grantor: Wolverine Financial LLC, an Oregon limited liability company, as to a 50% tenant in common interest, and Lone Oak Land & Investment Company, LLC, an Oregon limited liability company, as to a 50% tenant in common interest
Grantee: DCMB, LLC, an Oregon limited liability company
Recording Date: February 28, 2020
Recording No: 2020-017584

H. Note: No utility search has been made or will be made for water, sewer or storm drainage charges unless the City/Service District claims them as liens (i.e. foreclosable) and reflects them on its lien docket as of the date of closing. Buyers should check with the appropriate city bureau or water service district and obtain a billing cutoff. Such charges must be adjusted outside of escrow.

I. Recording Charge (Per Document) is the following:

County	First Page	Each Additional Page
Multnomah	$86.00	$5.00
Washington	$81.00	$5.00
Clackamas	$93.00	$5.00

Note: When possible the company will record electronically. An additional charge of $5.00 applies to each document that is recorded electronically.

Note: Please send any documents for recording to the following address:
Portland Title Group
Attn: Recorder
1433 SW 6th Ave.
Portland, OR. 97201

J. Note: Effective January 1, 2008, Oregon law (ORS 314.258) mandates withholding of Oregon income taxes from sellers who do not continue to be Oregon residents or qualify for an exemption. Please contact your Escrow Closer for further information.

K. THE FOLLOWING NOTICE IS REQUIRED BY STATE LAW: YOU WILL BE REVIEWING, APPROVING AND SIGNING IMPORTANT DOCUMENTS AT CLOSING. LEGAL CONSEQUENCES FOLLOW FROM THE SELECTION AND USE OF THESE DOCUMENTS. YOU MAY CONSULT AN ATTORNEY ABOUT THESE DOCUMENTS. YOU SHOULD CONSULT AN ATTORNEY IF YOU HAVE QUESTIONS OR CONCERNS ABOUT THE TRANSACTION OR ABOUT THE DOCUMENTS. IF YOU WISH TO REVIEW TRANSACTION DOCUMENTS THAT YOU HAVE NOT SEEN, PLEASE CONTACT THE ESCROW AGENT.

L. Note: This map/plat is being furnished as an aid in locating the herein described Land in relation to adjoining streets, natural boundaries and other land. Except to the extent a policy of title insurance is expressly modified by endorsement, if any, the Company does not insure dimensions, distances or acreage shown thereon.

M. NOTE: IMPORTANT INFORMATION REGARDING PROPERTY TAX PAYMENTS

Fiscal Year:	July 1st through June 30th
Taxes become a lien on real property, but are not yet payable:	July 1st
Taxes become certified and payable (approximately on this date):	October 15th
First one third payment of taxes is due:	November 15th
Second one third payment of taxes is due:	February 15th
Final payment of taxes is due:	May 15th

Discounts: If two thirds are paid by November 15th, a 2% discount will apply.
If the full amount of the taxes are paid by November 15th, a 3% discount will apply.

Interest: Interest accrues as of the 15th of each month based on any amount that is unpaid by the due date. No interest is charged if the minimum amount is paid according to the above mentioned payment schedule.

EXHIBIT ONE

2006 AMERICAN LAND TITLE ASSOCIATION LOAN POLICY (06-17-06)
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses that arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning) restricting, regulating, prohibiting or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions or location of any improvement erected on the land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not known to the Company, not recorded in the Public Records at Date of Policy, but known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with the applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
6. Any claim, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in the Covered Risk 13(b) of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage.

SCHEDULE B - GENERAL EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof, water rights, claims or title to water.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
5. Any lien for services, labor or material heretofore or hereafter furnished, or for contributions due to the State of Oregon for unemployment compensation or worker's compensation, imposed by law and not shown by the Public Records.

2006 AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY (06-17-06)
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses that arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning) restricting, regulating, prohibiting or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions or location of any improvement erected on the land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not known to the Company, not recorded in the Public Records at Date of Policy, but known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 and 10); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in the Covered Risk 9 of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage.

SCHEDULE B - GENERAL EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof, water rights, claims or title to water.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
5. Any lien for services, labor or material heretofore or hereafter furnished, or for contributions due to the State of Oregon for unemployment compensation or worker's compensation, imposed by law and not shown by the Public Records.

WIRE SAFE™ | Inquire before you wire!

WIRE FRAUD ALERT

This Notice is not intended to provide legal or professional advice.
If you have any questions, please consult with a lawyer.

All parties to a real estate transaction are targets for wire fraud and many have lost hundreds of thousands of dollars because they simply relied on the wire instructions received via email, without further verification. **If funds are to be wired in conjunction with this real estate transaction, we strongly recommend verbal verification of wire instructions through a known, trusted phone number prior to sending funds.**

In addition, the following non-exclusive self-protection strategies are recommended to minimize exposure to possible wire fraud.

- **NEVER RELY** on emails purporting to change wire instructions. Parties to a transaction rarely change wire instructions in the course of a transaction.
- **ALWAYS VERIFY** wire instructions, specifically the ABA routing number and account number, by calling the party who sent the instructions to you. DO NOT use the phone number provided in the email containing the instructions, use phone numbers you have called before or can otherwise verify. **Obtain the number of relevant parties to the transaction as soon as an escrow account is opened.** DO NOT send an email to verify as the email address may be incorrect or the email may be intercepted by the fraudster.
- **USE COMPLEX EMAIL PASSWORDS** that employ a combination of mixed case, numbers, and symbols. Make your passwords greater than eight (8) characters. Also, change your password often and do NOT reuse the same password for other online accounts.
- **USE MULTI-FACTOR AUTHENTICATION** for email accounts. Your email provider or IT staff may have specific instructions on how to implement this feature.

For more information on wire-fraud scams or to report an incident, please refer to the following links:

Federal Bureau of Investigation:
http://www.fbi.gov

Internet Crime Complaint Center:
http://www.ic3.gov

FIDELITY NATIONAL FINANCIAL
PRIVACY NOTICE

Effective January 1, 2021

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- demographic information (*e.g.*, date of birth, gender, marital status);
- identity information (*e.g.* Social Security Number, driver's license, passport, or other government ID number);
- financial account information (*e.g.* loan or bank account information); and
- other personal information necessary to provide products or services to you.

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- information about your transactions with FNF, our affiliates, or others; and
- information we receive from consumer reporting agencies and/or governmental entities, either directly from these entities or through others.

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- browser version, language, and type;
- domain name system requests; and
- browsing history on the FNF Website, such as date and time of your visit to the FNF Website and visits to the pages within the FNF Website.

Like most websites, our servers automatically log each visitor to the FNF Website and may collect the Browsing Information described above. We use Browsing Information for system administration, troubleshooting, fraud investigation, and to improve our websites. Browsing Information generally does not reveal anything personal about you, though if you have created a user account for an FNF Website and are logged into that account, the FNF Website may be able to link certain browsing activity to your user account.

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Cookies. When you visit an FNF Website, a "cookie" may be sent to your computer. A cookie is a small piece of data that is sent to your Internet browser from a web server and stored on your computer's hard drive. Information gathered using cookies helps us improve your user experience. For example, a cookie can help the website load properly or can customize the display page based on your browser type and user preferences. You can choose whether or not to accept cookies by changing your Internet browser settings. Be aware that doing so may impair or limit some functionality of the FNF Website.

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- To improve our products and services.
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- to enable us to detect or prevent criminal activity, fraud, material misrepresentation, or nondisclosure;
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- to nonaffiliated third party service providers with whom we perform joint marketing, pursuant to an agreement with them to jointly market financial products or services to you;
- to law enforcement or authorities in connection with an investigation, or in response to a subpoena or court order; or
- in the good-faith belief that such disclosure is necessary to comply with legal process or applicable laws, or to protect the rights, property, or safety of FNF, its customers, or the public.

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For Nevada Residents: You may be placed on our internal Do Not Call List by calling (888) 934-3354 or by contacting us via the information set forth at the end of this Privacy Notice. Nevada law requires that we also provide you with the following contact information: Bureau of Consumer Protection, Office of the Nevada Attorney General, 555 E. Washington St., Suite 3900, Las Vegas, NV 89101; Phone number: (702) 486-3132; email: BCPINFO@ag.state.nv.us.

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Fidelity National Financial, Inc.
601 Riverside Avenue,
Jacksonville, Florida 32204
Attn: Chief Privacy Officer

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EASEMENT AGREEMENT

1968 THIS AGREEMENT made and entered into this 5th day of January 1967, by and between HENRY J. VANDERZANDEN and LENA VANDERZANDEN, first party, which shall include their heirs, executors, administrators, agents or assignees, where the context so requires or admits, and the CITY OF BANKS, OREGON, a municipal corporation, second party,

WHEREAS, the first party owns and has title to that real estate and real property located in Washington County, State of Oregon, described as follows:

Parcel 1: A parcel of property ten feet wide, the centerline of which is described as follows: Beginning at a point on the east line of the Vanderzanden property, said point being 1051 feet south of and 184.5 feet west of the northeast corner of Section 36, Township 2 North, Range 4 West, W.M., and running thence north 56°41' west 301 feet to a concrete box 36" x 54" square, running thence north 54°42' west 905 feet to the point of discharge into West Dairy Creek.

Parcel 2: A parcel of land ten feet wide, the centerline of which is as follows: Beginning at a point on the east line of Vanderzanden property, said point being 2042 feet south of and 184.5 feet west of the northeast corner of Section 36, Township 2 North, Range 4 West, W.M.; and from which point a concrete box 30" x 36" square bears east 2.0 feet; running thence south 80°26' west 148 feet; thence north 88°34' west 420 feet to the point of discharge.

and

WHEREAS, the party of the second part desires to obtain an easement over and across the before described property for the purpose of maintaining and operating sewer lines thereon.

NOW THEREFORE, in consideration of the premises, the mutual covenants hereinafter set forth, and the sum of Seven Hundred Twenty Dollars ($720.00), it is agreed as follows.

The first party does hereby grant, assign and set over to the second party an easement on Parcel 1 for the purpose of maintaining a sewer line thereon, said right to include the right and privilege to enter upon the said easement at any time for the purpose of operating or maintaining said sewer line, it being distinctly understood and agreed, however, that the said sewer line shall be maintained below plow depth, and except for such time that it may be necessary to repair said sewer line, shall not beused in such a way as to

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interfere with the operation for farm purposes of the first party.

The first party does also grant, assign and set over to the second party an easement over and across Parcel 2 hereinbefore described, for the purpose of maintaining a storm sewer thereon, it being agreed, however, that said storm sewer shall not exceed a diameter of ten inches, shall be buried below plow depth, and shall be maintained in such a way as not to interfere with the farm operation of the first party thereon, save and except the second party shall have the right to enter over and upon the said easement for the purpose of maintaining, repairing, or replacing said sewer line.

The first party shall fully use and enjoy the aforesaid premises except as to the rights herein granted, and the second party hereby agrees to hold and save the first party harmless from any and all damage arising from its use of the right, easement and right of way herein granted, and agrees to pay any damage or damages which may arise to the property, premises, or rights of the first party through the second party's use, occupation and possession of the rights herein granted.

TO HAVE AND TO HOLD the said easement, right and right of way unto the party of the second part, its successors or assigns forever, and under the specific conditions, restrictions and considerations hereinbefore set forth.

IN WITNESS WHEREOF, the first party hereto have set their hands and seals, and the City of Banks, Oregon, second party, pursuant to authority conferred by the city council has caused this document to be executed by its mayor and recorder, the day and year first hereinabove written.

Henry J. Vanderzanden

Lena Vanderzanden

FIRST PARTY

No Corporate Seal officer N.C.

CITY OF BANKS, OREGON

By R. S. Smith Mayor

By Estelle Medearis Recorder

SECOND PARTY

STATE OF OREGON

County of Washington . . . ss. ~~December~~ January 5th 1968

Personally appeared the above named Henry J. Vanderzanden and

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Lena Vanderzanden, and acknowledged the foregoing instrument to be their voluntary act and deed.

Before me:

Notary Public for Oregon
My commission expires: Aug 25, 1967

STATE OF OREGON
County of Washington . . . ss.

On this 12TH day of ~~December~~ January, ~~1967,~~ 1968 before me appeared Norman Smith and Estelle Medearis, both to me personally known, who being duly sworn, did say that he, the said Norman Smith is the mayor, and she, the said Estelle Medearis is the clerk of City of Banks, Oregon, the within named municipal corporation, and that the seal affixed to said instrument is the corporate seal of said corporation, and that the said instrument was signed and sealed in behalf of said municipal corporation by authority of its city council, and said Norman Smith and Estelle Medearis acknowledged said instrument to be the free act and deed of said municipal corporation.

In Testimony Whereof, I have hereunto set my hand and affixed my official seal the day and year last above written.

Notary Public for Oregon
My Commission expires:

INDEXED

STATE OF OREGON
County of Washington } ss Deeds

I, Roger Thomssen, Director of Records and Elections and Ex-Officio Recorder of Conveyances for said county, do hereby certify that the within instrument of writing was received and recorded in book 678 in the Records of of said County.

Witness my hand and seal affixed.
ROGER THOMSSEN, Director of Records & Elections

Deputy

JAN 24 3 32 PM '68

BOOK 878 PAGE 361

1842

E A S E M E N T

KNOW ALL MEN BY THESE PRESENTS, that the City of Banks, a Municipal Corporation, of Washington County, Oregon, does hereby grant to Henry J. VanderZanden and Lena E. VanderZanden, husband and wife, their heirs and assigns, an easement and right of way over the following described real property situated in the State of Oregon, County of Washington, to wit:

> Beginning at the northeast corner of Section 36, T2N, R4W, W.M., Washington County, Oregon, and running thence West 356.00 feet, along the north line of said Section 36, to the northeast corner of that tract of land conveyed to the City of Banks, Oregon, as recorded in Deed Book 159 at page 614, of the Washington County Deed Records; thence S 23° 52' W 16.84 feet to the southerly boundary line of County Road No. 1938 and the true beginning point of the tract of land herein described; thence continuing S 23° 52' W 153.85 feet; thence S 52° 51' W 128.58 feet, to the southeast corner of said Banks tract; thence S 45° 22' W 26.46 feet; thence N 85° 32' W 50.00 feet; thence N 4° 28' E 86.43 feet to the center of a creek; thence up the center of said creek as follows; S 56° 27' 50" E 31.26 feet, N 85° 15' 16" E 29.28 feet, N 61° 18' 59" E 36.41 feet, N 40° 34' 52" E 83.78 feet, N 29° 03' 36" E 55.23 feet and N 17° 31' 19" W 35.79 feet to the southerly boundary line of Road No. 1938; thence S 88° 29' E 68.53 feet to the true point of beginning.

This easement is granted for the purpose of allowing the grantees the right of ingress and egress over said property from the property of the grantees to the County Road No. 1938.

IN WITNESS WHEREOF, the City of Banks pursuant to authority conferred by the City Council, has caused this document to be executed by its Mayor and Recorder this 22 day of ~~November~~ December, 1965.

CITY OF BANKS

Norman S. Smith

By Norman S. Smith (SEAL)
Mayor

By Estelle Medearis (SEAL)
Recorder

CITY OF BANKS CORPORATE SEAL OREGON

STATE OF OREGON)
) ss.
County of Washington)

~~November~~ December 22, 1965

Personally appeared the above named Norman S. Smith and Estelle Medearis who acknowledged to me that they are the Mayor and Recorder respectively of the City of Banks, Washington County, Oregon, and that they executed the within document pursuant to authority conferred by the City Council of the City of Banks,

Before Me:

J. Wimmer

Notary Public for Oregon
My Commission Expires:

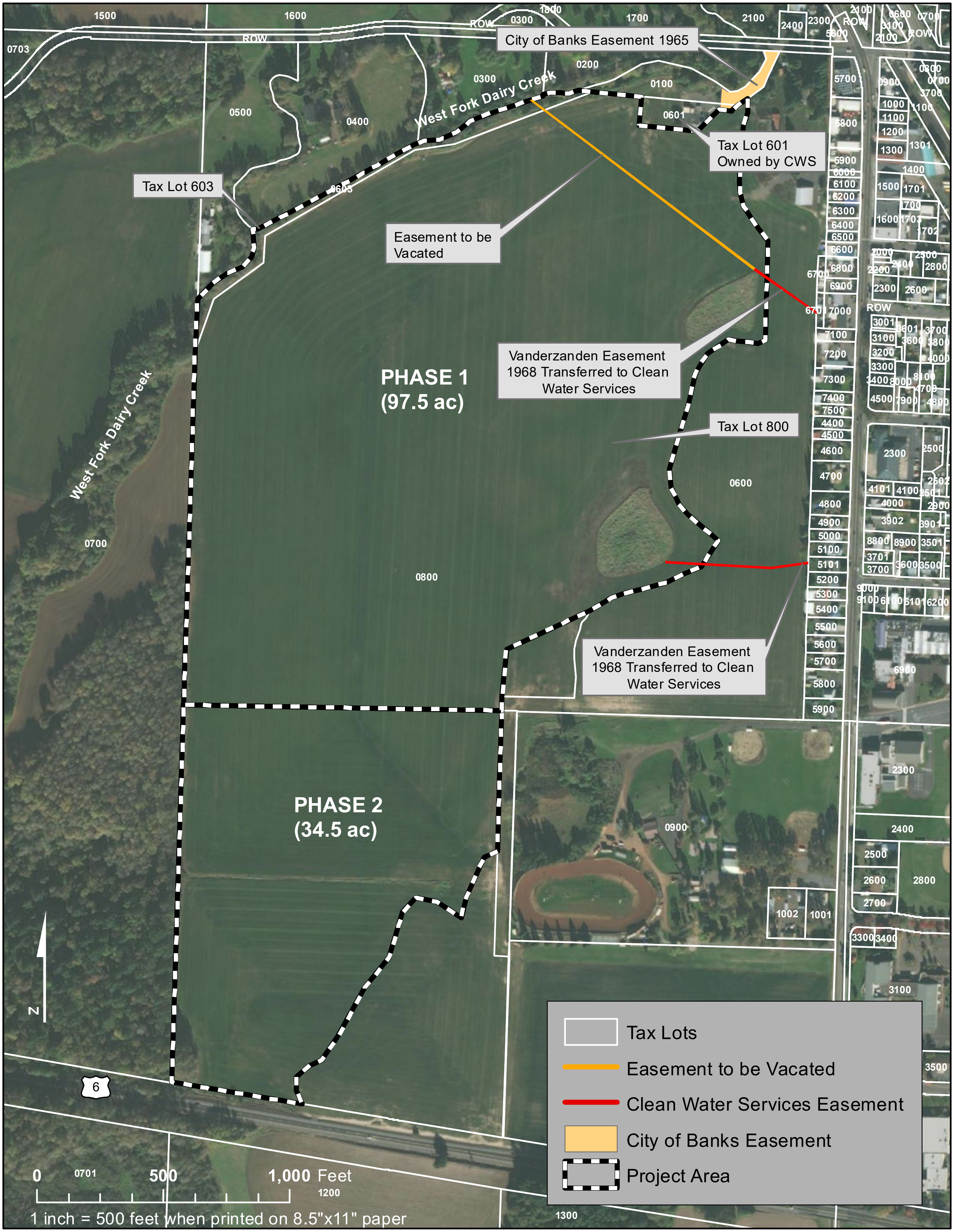
NOTARY PUBLIC FOR OREGON
My Commission Expires May 27, 1969

NOTARY PUBLIC STATE OF OREGON

Filed for record Jan 5 1966 at 2:08 P.M.
ROGER THOMSSEN, Director of Records & Elections
By .... Deputy

BOOK 583 PAGE 392

Exhibit B



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Tax Lot Layer provided by RLIS.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Exhibit B 220127.mxd

Map created by Miles Eubanks.
Ver. 1.22

greenbanks

Clean Water Services

To Whom it May Concern:

Clean Water Services (District) has agreed to vacate the storm sewer easement located on tax lot 2N4360000800 in Banks, Oregon and recorded in Washington County Deed Records at Book 678 and Page 359, contingent upon Greenbanks, LLC completing the project for a wetland mitigation bank on the tax lot and working with District to have the storm outfall at a different location. The District took over the storm sewer assets from the City of Banks in 1990, however, since the easement is still officially in the City of Banks name, District will work with the City of Banks to finalize the vacation documents.

Sincerely,

Meredith Armstrong

Easement Acquisition Specialist

Exhibit C
Mitigation Plan

June 8, 2022

EXHIBIT C:

MITIGATION PLAN FOR THE DAIRY CREEK MITIGATION BANK

Sponsored by: DCMB LLC
6770 Canyon Drive
Portland, Oregon 97225

Prepared by: C. Jonas Moiel, Senior Ecologist
Green Banks LLC
14200 SE McLoughlin Blvd, Suite A
Milwaukie, Oregon 97267
(503) 477-5391

Assistance from: David Gorman, P.E., Ecosystem Restoration Engineer
Miles Eubanks, GIS Mapping (Green Banks)
Margret Harburg, Scientific Studies (Green Banks)

greenbanks

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APPENDICES

1.0 INTRODUCTION

The Dairy Creek Mitigation Bank (DCMB) is proposed on 132 acres located in Banks, Oregon (Figure 1); Township 2 North, Range 4 West, Section 36, utilizing a portion of tax lot 800 (144.40 ac), and the entirety of tax lot 603 (1.76 ac.) (Figure 2); Longitude -123.121295, Latitude 45.616498. Much of the project area is within the FEMA 100-year floodplain of the West Fork Dairy Creek. The northern to northwestern edge of tax lot 800 is bound by the W. Fork Dairy Creek. The project is proposed to be constructed in two Phases; Phase 1 is 97.5 acres, and Phase 2 is 34.5 acres.

The DCMB project area has been in agricultural use for over 100 years, primarily in grass seed and grain production. The land was historically dominated by wetland and upland forests, with lesser amounts of shrub and emergent wetlands. The land alterations which occurred to make it suitable for agriculture included: clear-cutting and removing the historic forest, leveling the ground (removing micro-topography), installing agricultural drain-tile and ditching, and berming and armoring of the W. Fork Dairy Creek top-of-bank to reduce the frequency of flooding. These alterations to the land have degraded the functionality of the historic wetlands and waters, disconnected the W. Fork Dairy Creek from its floodplain, and caused a loss of aquatic and terrestrial habitat, making it an exceptional opportunity for ecological restoration.

The DCMB is proposing to generate wetland and stream mitigation credits. Enhancement of the perennial channel of the W. Fork Dairy Creek and intermittent “Straight Channel”, and creation of intermittent side-channels, will generate stream mitigation credits. Restoration, creation and enhancement of wetlands and upland buffers will generate wetland mitigation credits. Wetland mitigation credit types will include Riverine and Slope/Flats Hydrogeomorphic (HGM) Classes; and Palustrine Emergent (PEM), Palustrine Forested (PFO), and Palustrine Scrub-Shrub (PSS) Cowardin classes.

Clean Water Services (CWS), a local water and sewer provider for Washington County, has a program to protect upland buffers (Vegetated Corridors) that surround sensitive areas such as wetlands and streams. An upland area of approximately 11.99 acres within the DCMB Phase 1 project area will be designated for CWS offsite Vegetated Corridor mitigation; credit accounting for this area will be tracked separately from the wetland and waters credits to ensure that no “double dipping” of credits occurs.

2.0 BANK GOALS AND OBJECTIVES

The purpose of the DCMB is to restore, create and enhance wetlands; enhance and create streams (perennial and intermittent); and develop buffers, to generate wetland and stream mitigation credits within the Tualatin River watershed. The following section defines the goals of the project, as well as each objective which will be completed to achieve these goals.

Goal 1: To establish a highly functioning forested wetland that is dominated by native species, requires low-maintenance, and is sustainable for the long-term.

Objectives: Vegetation objectives include: 1a) Establish a plant community dominated by native species; 1b) Establish a plant community with a high level of native species cover and low

level of non-native invasive species cover; 1c) Establish a native plant community with a high level of diversity; 1d) Establish a dense forest that will require a low level of maintenance; and 1e) Establish a plant community that is dominated by hydrophytic plant species.
Hydrology objectives include: 1f) Restore wetland hydrology to its unaltered, natural condition by reversing sources of degradation; and 1g) Restore wetland hydrology in the riverine wetlands by improving the floodplain connection with the W. Fork Dairy Creek;
Habitat objectives include: 1h) Improve wetland function by increasing topologic variation in areas that have been leveled for agriculture.

Goal 2: To establish highly functioning willow dominated scrub-shrub wetland, that is dominated by native species, requires low-maintenance, and is sustainable for the long-term.

Objectives: Vegetation objectives include: 2a) Establish a plant community dominated by native species; 2b) Establish a plant community with a high level of native species cover and low level of non-native invasive species cover; 2c) Establish a native plant community with a high level of diversity; 2d) Establish a dense scrub-shrub community that will require a low level of maintenance; and 2e) Establish a plant community that is dominated by hydrophytic plant species.
Hydrology objectives include: 2f) Restore wetland hydrology to its unaltered, natural condition by reversing sources of degradation; 2g) Restore wetland hydrology in the riverine wetlands by improving the floodplain connection with the W. Fork Dairy Creek;
Habitat objectives include: 2h) Improve wetland function by increasing topologic variation in areas that have been leveled for agriculture.

Goal 3: To establish highly functioning sedge and rush dominated emergent wetland that requires low-maintenance, and is sustainable for the long-term.

Objectives: Vegetation objectives include: 3a) Establish a plant community dominated by native emergent species; 3b) Establish a plant community with a high level of native species cover and low level of non-native invasive species cover; 3c) Establish a native plant community with a high level of diversity; 3d) Establish a plant community that is dominated by hydrophytic plant species.
Hydrology objectives include: 3e) Restore wetland hydrology to its unaltered, natural condition by reversing sources of degradation; 3f) Restore wetland hydrology in the riverine wetlands by improving the floodplain connection with the W. Fork Dairy Creek.
Habitat objectives include: 3g) Improve habitat for wildlife such as raptors by installing snags in the emergent areas as they will not be planted with trees; 3h) Improve wetland function by increasing topologic variation in areas that have been leveled for agriculture.

Goal 4: To establish mixed forest and shrub dominated buffers to protect and improve the functionality of the wetland and waters resources.

Objectives: Vegetation objectives include: 4a) Establish a plant community dominated by native species; 4b) Establish a plant community with a high level of native species cover and low level of non-native invasive species cover; 4c) Establish a native plant community with a high level of diversity; 4d) Establish a dense forested and shrub dominated community that will require a low level of maintenance; and 4e) Establish densely vegetated buffers that will reduce pollutant influx (air, water, noise), deter domestic animals and humans (trespass), and limit invasive species spread and establishment.

<u>Goal 5</u>: To enhance the functionality of approximately 0.95 acres (1,080 linear feet) of perennial W. Fork Dairy Creek.

Objectives: <u>Enhancement objectives include</u>: 5a) Repair and recontour highly eroded stream banks; 5b) Restore historic top-of-bank elevations through the removal of artificial berms and debris; 5c) Establish a native dominated riparian forest in areas where stream bank repairs and/or recontouring has occurred; 5d) Establish a semi-aquatic herbaceous and shrub dominated plant community below the stream OHWM (2-Year reoccurrence interval); 5e) Enhance existing riparian forested areas through the removal of non-native species and planting of natives; 5f) Improve habitat functions through the placement of large and medium sized wood in areas where stream bank repairs and/or recontouring has occurred.

<u>Goal 6</u>: To enhance the functionality of approximately 1.3 acres (715 linear feet) of intermittent side-channel (Straight Channel) to the W. Fork Dairy Creek.

Objectives: <u>Enhancement objectives include</u>: 6a) Repair and recontour highly eroded stream banks; 6b) Restore historic top-of-bank elevations through the removal of artificial berms and debris; 6c) Establish a low-elevation aquatic ”bench” (area of nearly flat topography) to improve habitat for aquatic species; 6d) Establish a native dominated riparian forest in areas where stream bank repairs and/or recontouring has occurred; 6e) Establish a semi-aquatic herbaceous and shrub dominated plant community below the stream OHWL (2-Year reoccurrence interval); 6f) Improve habitat functions through the placement of large and medium sized wood in areas where stream bank repairs and/or recontouring has occurred; and 6g) Improve stream function by creating additional intermittent side-channel habitat.

<u>Goal 7</u>: To create approximately 3.2 acres (3,602 linear feet) of highly functioning intermittent side-channel to the W. Fork Dairy Creek.

Objectives: <u>Establishment objectives include</u>: 7a) Establish 3,602 linear feet of intermittent side-channel habitat in an area that shows evidence of historic flows; 7b) Establish intermittent channels with similar physical, chemical, and biological characteristics to stream reference sites; 7c) Establish intermittent channels with a downward gradient and stable inlets and outlets to the W. Fork Dairy Creek; 7d) Establish a native dominated riparian forest within in the higher elevation areas of the created stream banks; 7e) Establish a semi-aquatic herbaceous and shrub dominated plant community below the stream OHWL (2-Year reoccurrence interval); and 7f) Improve habitat functions through the placement of large and medium sized wood within the created channels.

<u>Goal 8</u>: To establish approximately 11.99 acres of upland native forest for Clean Water Services' Offsite Vegetated Corridor (riparian forested buffer) Mitigation.

Objectives: Vegetation objectives include: 8a) Establish an upland forest dominated by native species; 8b) Establish a dense forested and shrub dominated community that will require a low level of maintenance;

Goal 9: To finalize and execute a long-term management plan, protection mechanism, and endowment funding for long-term management of the Bank.

Objectives: Objectives include: 9a) Finalize agreements with a Long-Term Land Manager; 9b) Finalize a Long-Term Management Plan; 9c) Fund an endowment for the Bank that is non-wasting to ensure that funds are available for management in perpetuity; and 9d) Finalize and execute a long-term protection mechanism.

Table 1 displays a summary of the proposed mitigation types and acreages.

Table 1: DCMB Proposed Mitigation Types

Wetland Mitigation Type	Acres	Credits
Wetland Restoration (1:1)	23.60	23.60
Creation (1:1) (no modifier, historic hydric)	53.68	53.68
Creation (1.5:1) (-0.5 modifier: historic hydric with soil disturbance)	10.31	6.87
Wetland Enhancement (3:1)	3.41	1.13
Baseline Wetland No Credit	3.59	0.00
Buffer- Wetland (5:1)	5.35	1.07
Buffer- Riparian Upland (10:1)	6.02	0.60
Buffer- Upland (10:1)	6.08	0.61
TOTAL Wetland Mitigation	112.04	87.56
Cowardin- PFO	61.14	
Cowardin- PSS	23.79	
Cowardin- PEM	9.66	
HGM- Riverine Impounding	43.9	
HGM- Slope/Flats	58.6	

Stream Mitigation Type	Acres	Linear Feet	Credits
Perennial Stream Enhancement- W. Fork Dairy Creek	0.95	1,080	
Intermittent Stream Enhancement- Straight Channel	1.29	715	
Intermittent Stream Creation- side-channel	3.2	3,602	
TOTAL Perennial Stream Mitigation	0.95	1,080	
TOTAL Intermittent Stream Mitigation	4.5	4,317	

3.0 SITE SELECTION

The DCMB site location was selected for several reasons including: having the potential to address local watershed needs; having a high potential for wetland restoration due to the existence of drained hydric soils and small amount of baseline wetland acreage; the locations of active agricultural tiling and ditches are known and can be reversed; the project area is in close proximity to, and includes portions of the W. Fork Dairy Creek; the project area includes an artificially created intermittent side-channel off of the W. Fork Dairy Creek with potential for functional improvement; de-watered historic swales and/or stream channels are known to exist within the project area and can be restored; baseline conditions for the wetlands and waters within the project area are low functioning and can be lifted; nearly all of the baseline plant communities are in agriculture and can be converted to native communities; and the DCMB is directly adjacent to the Killin Wetlands Nature Park and is well connected to other natural habitats through the W. Fork Dairy Creek stream corridor.

The primary hydrology sources are natural and presumed to be permanent, primarily in the form of precipitation, ground water seepage, and over-bank flooding from the W. Fork Dairy Creek. Historic aerial imagery, tiling maps, communication with the land owner, and observations of drainage features, berms and armoring, provide evidence that the project area hydrology is degraded; and, is an opportunity for hydrologic restoration because the locations of drainage features are known and can be removed and/or de-activated. Historic stream channels are also mapped through the project area (DOGAMI, NWI, Oregon Explorer), which no longer exist, and can re-established.

Water Rights are not needed for the DCMB project as the site will not be irrigated and no water control structures will be installed.

3.1 LOCAL WATERSHED ASSESSMENT

The DCMB is located within the Dairy-McKay sub-basin within the Tualatin River Watershed. The Tualatin River Watershed Council (TRWC) provided a description of major watershed issues in their Dairy-McKay Watershed Analysis (2001), these issues are similar to those identified in the larger Tualatin River watershed; there is currently a newer watershed assessment being developed for the sub-basin but will not be available until around 2021 (pers. comm. TRWC 1/27/20). The major issues included:

- Erosion; primarily in areas with timber harvest, agriculture, and along stream channels. "*The West Fork of Dairy Creek, in particular, appeared to be particularly susceptible to stream bank erosion problems*.";
- Hydrology issues such as wetland drainage and stream canalization. "*Stream banks were built up to facilitate log driving. These activities contributed to hydrologic disconnection of streams from their floodplain.*";
- Water quality issues such as high temperature, phosphorus and bacteria levels. The West Fork of Dairy Creek has "*summertime dissolved oxygen levels limiting to aquatic life*";
- Aquatic species habitat loss related to channelization, de-forestation, water quality issues, and impassible culverts. Several salmonid species utilize Dairy Creek,

including steelhead trout, cutthroat trout and Coho salmon. Lamprey also occupy the watershed. Amphibian species of concern are found within the watershed including red-legged frog, tailed frog, and Columbia torrent salamander;

- Terrestrial species habitat loss caused by de-forestation and conversion to agriculture.
- Vegetation conversion from native forests and prairies for agriculture. Riparian corridors "*have been diminished and are generally narrow*". "*Invasive weed species are present throughout disturbed and non-forested portions of the watershed. Himalayan blackberry, reed canarygrass, and Scotch broom are particularly notable examples*.";

The Dairy-McKay watershed issues identified can be interpreted to be watershed "needs" that should be considered when designing restoration projects. The DCMB provides an opportunity to address some of these watershed needs, and improve locally important functions and values by: reducing erosion (turbidity) by re-grading vertical stream banks and the planting of perennial native plants; restoring historic hydrology through the removal of drainage features and creek channel berming/ armoring; improving water quality parameters by increasing shade and native plant density to remove nutrients and retain sediment; and improving aquatic, semi-aquatic, and terrestrial species habitat through the addition of topological complexity, placement of large wood, increased wetland acreage and conversion to native plant communities. It is predicted that there will be functional lift in most ORWAP and SFAM categories if the project is implemented; therefore, some level of functional lift would occur for most locally important functions.

3.2 WATER QUALITY LIMITED STREAM

The W. Fork Dairy Creek is a 303d listed stream by DEQ for temperature, dissolved oxygen, E. coli, and phosphorus; the DCMB project has the potential to improve some of these issues by planting native species that will provide shade and water filtration/ nutrient uptake. Fertilizer will not be used for the DCMB which may also reduce the phosphorus levels onsite.

3.3 RARE, THREATENED AND ENDANGERED SPECIES

An Endangered Species Act (ESA) listed fish, the Upper Willamette River Steelhead (*Oncorhynchus mykiss*) may exist in the West Fork Dairy Creek, and the creek is designated as Essential Salmonid Habitat (ESH) by DSL and ODFW. The baseline ESH habitat is degraded with nearly vertical stream banks, minimal or non-existent forested buffers, and is mostly unvegetated below the Ordinary High-Water Mark (OHWM). A straight, deep (10-14 feet), artificial channel (canal) which is connected to the W. Fork Dairy Creek exists within the project area, which provides an opportunity for substantial improvement to the ESH habitat. The stream banks have also been armored and bermed with concrete and other artificial materials, which will be removed during project construction.

Green Banks LLC requested rare, threatened and endangered plant and animal records from the Oregon Biodiversity Information Center (ORBIC) in February of 2020. Five element occurrence records were noted within a 2-mile radius of the site; the species observed included bald eagle (*Haliaeetus leucocephalus*) and steelhead (*Oncorhynchus mykiss* pop.33) Upper Willamette

River ESU, winter run. Both of these species are likely to utilize the project habitat after implementation.

3.4 OREGON CONSERVATION STRATEGY

The Oregon Conservation Strategy (OCS) identified Killin Wetlands, also known as Banks Swamp (COA ID:062) as a Conservation Opportunity Area (https://oregonconservationstrategy.org/conservation-opportunity-area/banks-swamp/). The DCMB project area is also shown as an ODFW Conservation Opportunity Area on the OCS Conservation Opportunity Areas online mapping interface. The recommended conservation actions include:

-Promote beaver activity to aid in wetland restoration
-Protect and enhance amphibian and turtle habitat.
-Remove/ breach dikes to restore natural hydrology to site.
-Restore degraded wetland and riparian habitats.
-Restore ditched streams to braided, meandering channels.

The DCMB mitigation design incorporates all of these OCS recommended conservation actions for wetland, stream, and floodplain restoration.

3.5 TYPES OF WETLANDS AND WATERS ANTICIPATED FOR IMPACT

The DCMB will provide wetland and stream mitigation for impacts within the Tualatin River watershed. Based on a review of removal/fill permits submitted within the watershed over the last decade, most of the wetland impacts are to Riverine and Slope/Flats, HGM class wetlands. The impacted wetlands are typically low-functioning for biological functions, with a range of functionality for chemical functions. Stream impacts typically occur to both perennial and intermittent streams within the watershed.

The Local Wetland Inventory (LWI) map data were available for ten cities within the proposed service area: Banks, Beaverton, Cornelius, Forest Grove, Hillsboro, North Plains, Sherwood, Tigard, Tualatin, and West Linn. The LWI map data provided coarse mapping and general summary information about the wetlands that were located within the urban growth boundaries of these cities. There was a total of approximately 1,890 acres of wetlands identified on these LWI maps, a majority of which were associated with a stream or river. The most common hydrogeomorphic (HGM) wetland classes identified were Riverine Flow-Through, Riverine Impounding, Slopes/Flats and Depressional Outflow. The predominant Cowardin vegetation class within these wetlands was Palustrine Emergent (PEM), encompassing approximately 930 acres, or 50% of the total wetlands identified. There were approximately 520 acres of Palustrine Forested (PFO) wetlands, which was approximately 30% of the total wetlands identified. The less common wetland types were Palustrine Scrub-Shrub (PSS) (~15%) and Palustrine Open Water (POW(~5%)), with approximately 440 acres total. Historically, there was a much higher proportion of PFO wetlands within the watershed, but deforestation for agriculture has transitioned many of them into degraded PEM wetlands and uplands.

The DCMB will restore the wetland types most commonly found within these urban growth areas that are most likely to be impacted by development. The DCMB is proposing to develop Riverine and Slopes/Flats HGM class wetlands, which are common within these urban areas. The DCMB is also proposing to restore PEM, PSS, and PFO, Cowardin class types. These wetland vegetation class types will likely be impacted by future development as they were the most common class types identified in the LWI data for the cities within the Bank service area.

The DCMB will mitigate for functions and values lost at the removal fill site(s) as it is predicted to have functional gains in nearly all categories of ORWAP and SFAM. Most wetland and stream impact sites within the watershed are not highly functioning; therefore, the DCMB will replace and potentially provide a net gain of wetland and stream function.

3.6 LANDSCAPE POSITION AND HABITAT CORRIDORS

The DCMB is sited in an appropriate landscape position to develop the wetland, stream and vegetation class types proposed. The area was historically dominated by Riverine and Slope/Flats wetlands (pre-settlement) and a majority of the soils are mapped as hydric by NRCS. A hydric soil survey conducted by Green Banks LLC in 2019 and 2020 verified that the NRCS mapping was relatively accurate and determined that hydric soils extend throughout the wetland restoration and creation areas (described in Section 4.6). The proposed intermittent stream channels follow the approximate historic flood patterns displayed during the 1996 flood event and other historic high-water events; prior to conversion to agriculture, there were intermittent swales within the project area.

The DCMB is directly adjacent to the Killin Wetlands Nature Park, a 590-acre nature preserve managed by Metro. The project area is also connected to many other natural areas through a series of forested and aquatic corridors, such as along the West Fork Dairy Creek which runs along the north and northwestern project area boundaries. Many streams and small tributaries also connect to the West Fork Dairy Creek, providing additional terrestrial and aquatic corridor connections to the project area. Clean Water Services' 725-acre Jackson Bottom Wetlands Preserve is approximately 12 miles southeast. The eastern edge of Tillamook state forest is approximately 8 miles to the west.

3.7 ABSENCE OF CONTAMINANTS

A small area of approximately one acre, adjacent to the eastern project area boundary (Phase 1), has been determined to be contaminated with lead. Historically, there was a shooting range on the adjacent property that resulted in the deposition of lead shot in this area. The area is known to DEQ as the Wolverine Property (Site ID: 5918; Facility ID: 132843).

The contaminated area is currently enrolled in DEQ's Voluntary Cleanup Program (VCP) (ECSI #5918), and assessment work that has been completed to date has been conducted with oversight from Kevin Dana, the assigned DEQ project manager. Farallon Consulting LLC (Farallon) consulted with DEQ in December 2021 to provide updated information relative to the wetland bank project and to develop a stepwise strategy to ensure that the Bank project is protective of both human and ecological receptors once constructed. Farallon and DEQ conducted a follow up meeting on January 10, 2022, to review the approach and develop concurrence from DEQ going forward. There are two overall objectives going forward: 1) ensure through additional assessment and/or cleanup that the area within the project boundary is protective of receptor populations once constructed; and 2) ensure that the southern area of Tax Lot 600 that is impacted from the shooting range is assessed and cleaned up in the future consistent with planned commercial/ industrial uses.

Kevin Dana will remain the assigned DEQ cleanup project manager through each phase of the cleanup project for both Tax Lots 600 and 800, and through DEQ's VCP will review and approve requisite work plans and submittals. For the first phase relative to the Bank project, the following was discussed with DEQ on January 10, 2022, and approval was obtained for implementation subject to additional details, work plans and information:

- In the Spring of 2022, additional discrete soil sampling will be conducted along the Tax Lot 600 and 800 border in the vicinity of known lead impacts to shallow soil. In addition, Incremental Sampling Methodology (ISM) will be conducted within the project area on Tax Lot 800 to evaluate overall risk to ecological receptor populations. Results of the ISM sampling will be compared to DEQ-approved screening levels, or to documented regional background concentrations to determine if unacceptable risk is present. A letter report will be prepared for DEQ review that summarizes the results of the additional sampling activities, risk assessment, conclusions, and recommendations.
    - If no unacceptable risk is documented and with DEQ-agreement and approval, additional action within the current project area would not be required.
    - If unacceptable risk to receptors is documented, a removal action would be conducted with follow up confirmation sampling to document that the removal action area is protective. Lead concentrations within the project area, based on several datapoints from prior investigations, are below residential risk-based screening levels. Therefore, subject to final DEQ approval, the removal action (if required) may consist of relocation of soils from the project area to Tax Lot 600 during the course of construction for the project.
    - Under either scenario, long term management or restrictions would not be required as the project area will be approved by DEQ either through additional assessment or removal action.
- Prior to implementing additional sampling and ecological risk assessment for the project area, Farallon will submit a detailed Work Plan to DEQ for review and approval. Implementation of the sampling activities will not be conducted prior to DEQ's approval of the Work Plan. DEQ is aware that the Work Plan will be submitted for review during Q1 of 2022, and that a summary report of the findings will be submitted in Q2 2022.
- Farallon also discussed the small portion of Tax Lot 800 that has been excluded from the Bank due to more elevated concentrations which exceed human health risk-based screen levels. DEQ understands that area will be cleaned up during the course of the project, or that the lot line will be adjusted and that portion of Tax Lot 800 would be cleaned up concurrent with planned future development of Tax Lot 600.

The Bank sponsor will keep the IRT up to date with progress regarding this monitoring and cleanup effort and include these updates in the annual monitoring reports. If the contamination outside of the Bank project area is not cleaned up prior to the long-term management phase of Phase 1, the sponsor will complete a tax lot line adjustment to remove the area from the Bank tax lot 800.

3.8 COMPATIBILITY WITH ADJACENT LAND USES

The DCMB lands are zoned for Exclusive Farm Use (EFU), with similarly zoned lands to the north, west, and south. The lands adjacent to the eastern perimeter of the DCMB project area are currently mostly in EFU; however, they will likely be converted to residential zoning in the future. The eastern project area boundary is in close proximity to residential and commercial development. The southern project area boundary (of Phase 2) is bound by Highway 6. The potential negative impacts from the adjacent development include noise, air, and water pollution; as well as invasive species transport and human related disturbance such as trespass, littering, domestic pets, and vandalism. In an effort to reduce these potential impacts, densely forested and shrub dominated buffers will be established adjacent to the eastern and southern project area boundaries. Perennial and evergreen plants with varying height classes will be used as much as possible, to establish a vegetated barrier around the site. Forested and shrub wetlands will also be established adjacent to these upland buffers to expand the effective buffer width with regard to several of these potential impacts (e.g. noise, air, weed seed transport). Additional information about the DCMB buffers is included in Section 5.1.2.

As the region becomes more urbanized and population growth continues there is potential for changes to the hydrology of the DCMB. Urbanization requires the use of more water to sustain the growing population. However, the DCMB is located in a low elevation floodplain which will likely receive increased runoff (indirectly) from an increase in impervious surface as a result of urbanization. Any trending changes to the hydrology of the region would occur on timescales of decades to centuries and are not likely to be noticeable in the short term.

3.9 POTENTIAL OFFSITE EFFECTS OF PROPOSED ACTIVITIES

The DCMB project is located in a low-elevation floodplain and there is a low risk of potential offsite effects; the project will improve flood storage and lessen the potential effects of flooding downstream. The eastern edge of the project area is near to the floodplain boundary elevation, which was not reached or exceeded during large flood events such as in the spring of 1996. The DCMB project will not have any effect on flood characteristics of medium to large flood events (ie 10-Year, 50-Year, 100-year) but will increase frequency of flooding into the project area for small events such as the annual and 2-Year events, primarily into the proposed intermittent channels as they will be excavated to depths similar to the Straight Channel; a 2-Year event will fill the proposed channels and cause them to spill into the floodplain at many locations as shown in Figures 10 and 11. Presently, these small events reach or exceed the top-of-bank of the Straight Channel and project construction will lessen the chances of flooding on adjacent properties by directing water into the DCMB, which is lower in elevation than the adjacent properties to the north. The project design also includes removal of an artificial berm located along the Straight Channel top-of-bank which will greatly reduce flood potential on adjacent properties by allowing water to enter the DCMB floodplain, rather than being channelized. The larger flood events have historically inundated much of the site and the project design will have no effect on these events.

Residential properties located at T2N R4W S36 tax lots 400 and 500 are directly north of the project area and are at low elevations within the floodplain; these properties are adjacent to the location where stream mitigation is proposed. The stream mitigation design will lessen the potential for flooding adjacent properties by directing surface water into the floodplain and allowing for additional surface water storage. The DCMB project area and proposed side-channels are also lower in elevation than these properties. The northern bank of the Straight Channel is located within tax lot 400, which had eroding vertical banks during the baseline. Restoration and re-contouring of the southern bank should improve the condition of the northern bank by reducing the potential for continued erosion. The northern bank is outside of the DCMB project area and will be monitored by capturing photos at established photo-points to document any changes to the northern bank over time; these photos will be provided in the annual monitoring reports (approximate locations displayed on Figure 14).

In order to evaluate the potential for increased frequency of flooding as the result of proposed grading changes to the Straight Channel on the properties to the north of the channel, a HEC-RAS hydraulic model was used to compare existing and proposed conditions (Section 4.4.2). To accomplish this, modifications were made to the hydraulic model input for section RS 17.25 to reflect the proposed grading of the left bank, including the bench and the slope lay back. Model RS 17.25 cuts through the proposed channel modifications.

The model was run for existing and proposed conditions and the model output for water surface elevation and velocity were compared. The proposed modifications result in a slight decrease in water surface elevations (hundredths of a foot) for all flood events except for the 100-year event. For the 100-year event there was no change in the water surface elevation under the proposed conditions. The proposed modifications to the Straight Channel will also result in a slight decrease in average flow velocities (hundreds to tenths of feet per second) for all flood events; the precise values are unimportant. The value of the comparison is the relative change from existing conditions to proposed conditions. The numbers indicate that the proposed changes to the Straight Channel will not make flooding or erosion worse. This is in agreement with what would be expected by increasing the cross-sectional area of a channel.

Tax lots 200 and 300 are also north of the project area, along the W. Fork Dairy Creek, but are adjacent to a portion of the project that will have little to no soil disturbance or flow alteration. The southern bank of the W. Fork Dairy Creek will be enhanced in this area by removing artificial debris, controlling invasive species, and placing woody debris.

Surface water which enters the floodplain during flood events flows southwesterly, exits the project area, and flows through two culverts under Highway 6. These culverts are activated during 2-year flow events, and a 100-year event is predicted to flood the Highway. Please refer to Appendix D for offsite drainage information. The DCMB project will not have any effect on large flood events, such as the 100-year event, but will increase the frequency of flooding from smaller annual events. Therefore, the DCMB project will not impact the flow through these culverts as they have been designed for larger flood events. Properties downstream of these culverts are in agriculture and the surface water from these culverts enter a ditch system which flows back into the W. Fork Dairy Creek.

Tax lot 900 (Sunset Park) is directly east of the Phase 2 project area and includes a depressional wetland that receives hydrology from groundwater seepage and precipitation. This wetland is ponded nearly year-round. Hydrology from this offsite wetland naturally seeps into the project area from groundwater discharge and surface water overflow during large precipitation events. The DCMB mitigation plan involves de-activating agricultural tiling in close proximity to this offsite wetland. One tile is located at a lower elevation than the offsite wetland and is draining onsite wetlands A and B (described in Section 4.1); de-activating the tile should not affect the hydrology of this wetland as the tile is not connected to it. Additionally, some historic tiling is known to exist which extends from the offsite wetland southwesterly into the east-west ditch within the project area. This tiling will be de-activated and removed within the project area, allowing groundwater flow to occur more naturally. The offsite wetland is located at a much lower elevation (greater than 10 feet lower) than Sunset Park infrastructure and any change to the wetlands' hydrology as a result of the project will be minimal or unnoticeable.

A narrow strip of tax lot 600 is located between the Bank tax lot 800 and the Sunset Park tax lot 900. Since groundwater discharge and surface water overflow occurs from tax lot 900 into the Bank through tax lot 600, the co-chair agencies request that an easement be recorded across this portion of tax lot 600 to protect the natural flow across it; or alternatively to complete a lot line adjustment to merge this narrow strip of tax lot 600 into the Bank tax lot 800. This area is providing hydrology for the Phase 2 project area, and will be addressed either through a recorded easement or lot-line adjustment prior to the first credit release of Phase 2.

4.0 EXISTING CONDITIONS

The DCMB is proposed on 132 acres, most of which is within the 100-year floodplain of the W. Fork Dairy Creek. Three floodplain lines have been identified for the DCMB: the 100-year floodplain was delineated on-the-ground by Alpha Engineering Inc. in 2004 (also identified as floodplain line in tax lot legal description), the FEMA 100-Year floodplain line, and the FEMA zone-X which is the area between the 100-Year and 500-Year that is protected by levees. The FEMA 100-Year floodplain line is located at the approximate extent of the 1996 flood event. The baseline wetlands and waters were delineated by Pacific Habitat Services Inc. (PHS) in 2019, and included six PEM, Slope/Flats and Riverine wetlands, and two ditches (delineated as wetland) totaling 7.59 acres. In 2021, DSL stated that they believe there is a year-round growing season for the site and that the delineation needed to be updated. In response, Green Banks LLC modified the 2019 delineation in the spring of 2021 by adding three small wetlands that were not previously delineated and expanding the size of two wetlands from the PHS delineation; these changes resulted in an increase in wetland acreage to a total of 9.12 acres (Appendix A). A small portion of the W. Fork Dairy Creek (waters) exists within the project area, totaling 0.9 acre (PHS 2019). The proposed mitigation treatment will cause a large increase in acreage from the baseline wetlands and waters, with a predicted 97.2 acres of wetlands and 5.45 acres of waters.

The DCMB has three primary hydrology sources: surface water and a high groundwater table associated with the W. Fork Dairy Creek, groundwater seeps from the gentle hillslopes along the eastern portion of the project area, and precipitation.

Please refer to Figures 3-9 which display the baseline conditions at the DCMB; and Appendices A-I which include data, graphs, and figures from various baseline studies.

4.1 BASELINE WETLANDS

There were nine wetlands delineated (Wetlands A-I) and two ditches totaling 9.12 acres. Wetland A-F were delineated by PHS in 2019; wetlands A and B were modified by Green Banks LLC in 2021. Wetland C is outside of the DCMB project area. Wetlands G-I were added in 2021. Wetlands A, B, D, and F are Slope/Flats wetlands; wetlands E, G, H and I are Riverine Impounding. All of the baseline wetlands are in PEM vegetation class; however, their historic state would have likely been forested or shrub dominated wetland.

Wetlands A, B, D, and F receive primary hydrology from hillside seeps and precipitation, with some additional hydrology in the form of stormwater runoff from adjacent developed properties within the City of Banks. During high-water events on the W. Fork Dairy Creek, floodwaters will at times flow into Wetland A and then flow southeasterly in the approximate location of a historic swale; this can be viewed on the historic aerial photograph from February of 1968 (Figure 8b). These wetlands are dominated by reed canarygrass (*Phalaris arundinacea*) and tall fescue (*Schedonorus arundinaceus*). An active drain tile-line starts at the southern end of Wetland A and moves southeasterly connecting to Wetlands B and D, and outfalls in the East-West ditch in the Phase 2 area. The outfall location of this drain tile was located in the spring of 2021 and is shown on Figure 7 and Appendix B. The outfall pipe is 12-inch PVC and displayed heavy flows, likely at volume capacity, in the spring of 2021. These drain tiles are the primary form of hydrologic degradation in these wetlands as they move surface water out of the wetlands rapidly, which has reduced the size of the wetlands and de-watered historic wetlands downslope. The hydrologic degradation is described in detail in Section 4.5.

Wetland E, G, H and I are in the Riverine Impounding HGM class and are located in a low elevation floodplain area with clayey soils. The primary hydrology sources are overbank flooding from the W. Fork Dairy Creek and a high groundwater table associated with the Creek. These wetlands are located in a large polygon of hydric soil (Wapato silty clay loam), most of which is drained from tiling and ditching. Historically, these wetlands would have received surface water more frequently from the creek, but the construction of an earthen berm to raise the top-of-bank has partially disconnected them from smaller (e.g. annual) flood events.

Two ditches were delineated, referred to as East-West and North-South totaling 0.74 acres. These ditches were excavated to improve site drainage and are dominated by reed canarygrass. Surface water from the North-South Ditch flows out of the project area near the southern project area boundary through a culvert under Highway 6. During high water events some surface water from the North-South ditch also enters a natural swale in the adjacent tax lot to the west and flows through a second, more westerly culvert under Highway 6 (see Figure 10).

Please refer to Section 4.8.1 for a summary of the baseline wetlands functions and values, and Section 4.5: Hydrologic Degradation for more information about drain-tile, ditching, and floodplain disconnection.

4.2 BASELINE STREAMS

The W. Fork Dairy Creek runs along the northern and northwestern project area boundary. Portions of the W. Fork Dairy Creek are located within the Bank (0.9 ac), including approximately 1,080 linear-feet of the Creek (perennial; 0.7 ac), and 715 linear-feet of artificially created intermittent channel (0.2 ac), referred to as the Straight Channel. The PHS' waters boundaries were delineated by conducting a top-of-bank survey. The slopes of the Creek's banks are nearly vertical (<1:1) with signs of active erosion (sloughing). Concrete rip-rap and other debris was historically placed along the banks of approximately 1,200 linear-feet of the Creek, likely to reduce bank erosion and flooding into the adjacent land to the South; this armoring extends higher in elevation than the natural top-of-bank. There are some medium and small sized pieces of downed-wood which are providing some habitat complexity. The substrate of the Creek bed is primarily clay and silt.

The perennial channel of the Creek is degraded from several sources. It has unvegetated banks, with non-native species such as Armenian blackberry (*Rubus armeniacus*) dominating the top-of-bank. There is a narrow-forested buffer 10 to 20 feet wide in most areas, with limited tree cover (Figure 5). Concrete and other debris is scattered along the banks, mostly near the top-of-bank and some elevated berms have been built higher than the historic top-of-bank which has disconnected the Creek from its floodplain. Other litter such as car tires and appliances, are also commonly observed. As mentioned previously, the Creek banks are nearly vertical with signs of active erosion.

The Straight Channel was constructed over 100 years ago, likely to reduce flooding on the neighboring properties; it can be viewed in our earliest aerial photograph from 1940 (Figure 8c). This channel is approximately 10 to 14 feet deep and 15 to 30 feet wide. Its banks are nearly vertical, unvegetated, and show signs of erosion. There is very little in-channel roughness or variation, and some medium to small woody debris. The channel bottom is clay and the banks are clay and silt. This intermittent channel has surface water from around December through April annually, with water reaching its top-of-bank on an annual basis, and water extending past the top-of-bank during 2-Year flow events and higher flows (see Section 4.4). In the summer, the channel is mostly dry, with several scattered small pools (<0.1 acre). In August of 2020, these small pools (4) were observed, which had water depths of a foot or more. Please refer to Appendix B for ground-level photographs of the Straight channel.

4.3 WETLAND HYDROLOGY STUDY

Please refer to Appendix C for background data and information from the wetland hydrology study. Between February 14th and March 18th, 2019, 53 soils/hydrology plots were augered in a grid throughout the project area (Figure 6). The purpose of establishing these plots was to delineate the hydric soils boundary and to conduct hydrology monitoring. The plots were augured to 24-inches below ground surface (or slightly lower), and were regularly "cleaned out" or re-augured to maintain a depth of at least 24 inches. In January 2020, five shallow observation tubes with digital data-loggers were installed within the Bank to track ground and surface water levels, with measurements recorded every 4 hours. These observation tubes were installed with slotted PVC pipe below ground surface (to allow for water infiltration), surrounded by a layer (2 inches) of coarse sand below surface, and capped with a bentonite layer and native soils on the surface. The observation tubes were installed to a maximum depth of 30-inches below ground surface. During hydrology monitoring events these observation tubes were regularly "bailed" to remove any water turbidity and ensure that the slotted pipe had active flow (not plugged). A barometric pressure data-logger was also installed within the project area to improve the accuracy of the water-level data. Please note that Shallow Observation Tube #2 was located within the Straight Channel and was lost during a winter flood event in 2020.

According to the WETS table for Hillsboro, the typical growing season commences on February 23rd and ends on November 18th, based on the average last and first dates of 28° F, tabulated between 1971 and 2000. In 2021, DSL stated that there is a year-round growing season for the project.

Wetland hydrology monitoring took place between February 14th and April 23rd in 2019, and January 6th and February 28th in 2020.

In 2019 and 2020, the hydrology plots were monitored approximately one to two times per week for the duration of the study. During each monitoring event, the depth to ground water was measured at each plot using a tape-measure and data were recorded in field books. In order to determine soil saturation, we estimated the "capillary fringe" at many plot locations and determined that it ranged from approximately 3 to 5 inches. For the hydrology study, we assume a capillary fringe of 4-inches above the "free-water" observed in a monitoring plot; therefore, a plot having free-water at 16-inches below ground surface would have saturation at 12-inches below ground surface. The surface water levels of the W. Fork Dairy Creek were also monitored by placing pin-flags at surface water elevations on various dates and recording the flow rate shown on the East Fork Dairy Creek gage (there is no gage on the West Fork, this will be discussed further in Section 4.4.3); this helped to correlate West Fork water levels with East Fork gage data. The groundwater level data collected at the four shallow observation tube locations (1,3,4,5) were downloaded several times in 2020 and are included in Appendix C.

Precipitation totals for the 2019 and 2020 hydrology monitoring periods, were generally below average. In 2019, January had 54% of average rainfall (based on WETS table for Hillsboro), February had 105%, and March had 34.6%. In 2020, January had 124.6% of average rainfall, February had 31.5%, and March had 53.9%. Both 2019 and 2020, had approximately 60%-70% of average rainfall for the "Water Year to Date" for the monitoring period which took place between February and March.

In 2019, 5 of the 53 plots displayed (or were very close to displaying) wetland hydrology for approximately 14 or more consecutive days (~5%) within the monitoring period. In 2020, 6 of the 53 plots displayed (or were very close to displaying) wetland hydrology. In 2020, there was above average rainfall in late January with 2.93 inches (based on Hillsboro NWS station) falling between the 23rd and 30th, which caused inundation and saturation at many of the plot locations. The soils within the Bank are clayey in texture and would typically have a longer duration of saturation but artificial drainage features such as ditching and tiling have caused accelerated de-watering. Even though the rainfall for February was below average in 2020, this high volume of rainfall in late January caused several of the plots to be close to displaying wetland hydrology.

We anticipate that removal and de-activation of drainage features will greatly increase the frequency and duration of saturation within the project area.

4.4 STREAM HYDROLOGY STUDY

The W. Fork Dairy Creek and Straight Channel hydrology were studied in the following ways: A hydrology model was developed for the site based on the direct drainage basin and local precipitation data; A hydraulic model was developed to predict the flow rates and surface water elevations in the Creek based on the hydrology model; and field observations were made during various flow events on the W. Fork of Dairy Creek based on local gage data (East Fork), and exact surface water level elevations were determined (surveyed) for those events.

The baseline topography has a vertical datum of NAVD 88 and was developed from LiDAR (2007). It is relatively accurate but areas such as the W. Fork Dairy Creek and Straight Channel had inaccuracies due to tree cover and surface water in the Creek. In order to improve the accuracy of the topography in those areas, elevation benchmarks were installed throughout the site by a civil surveyor (Pacific Community Design 2020), and elevation transects were established through the areas to determine exact elevations. The elevation transect points were surveyed with GPS and then overlaid on the LiDAR topography to make accuracy adjustments to the topography in problematic areas.

4.4.1 Hydrology Model (HydroCAD)

The hydrology model was built in HydroCAD by Ecological Engineering LLC (Gorman 2020). The drainage basin which directly drains to the DCMB project area was delineated to be approximately 30,962 acres. Most of the land is covered by forest and agriculture. The Hillsboro Airport NWS precipitation data were used to predict the various events produced by the model. The model was calibrated to the FEMA 100-year peak flow from the 2018 Flood Insurance Study (FEMA 2018).

The annual rainfall event (24-hour total) is estimated to be 1.5 inches, which is predicted to produce an annual peak flow of 315 cfs. The model predicts the 2-year event to produce a peak flow of 1,171 cfs. Other peak flows are predicted for the 5-year, 10-year, 25-year, 50-year, and 100-year events and are included in the HydroCAD report in Appendix D. These peak flows were used in a hydraulic model to predict surface water elevations within the project area and to inform the stream mitigation design.

4.4.2 Hydraulic Model (HEC-RAS)

Hydraulic modeling data were acquired for the W. Fork Dairy Creek. The only available data were in the HEC-2 format (scanned “punch card” forms) from the 1970’s (Corps 1980). These data were converted to HEC-RAS for use in the hydraulic model. Data were included from slightly upstream of the DCMB near Cedar Canyon Road, to slightly downstream of the project area. Three river stations (17.65, 17.299, and 17.25) with HEC-2 data were in useful locations for the project design: Station 17.65 is along the W. Fork Dairy Creek near the northeastern project area boundary; Station 17.299 is located in close proximity to the eastern end of the Straight Channel; and Station 17.25 is near the western end of the Straight Channel (Figure 6, and Appendix D: HEC-RAS). The HEC-RAS model can predict surface water elevations for various flow rates at those Station locations.

Flow rates predicted for various rainfall events from the HydroCAD model were input into the HEC-RAS model to determine surface water elevations for those events. Please refer to Table 2 which includes a summary of surface water elevation information.

Table 2:

Dairy Creek Wetland Mitigation Bank
Water Surface Elevations and Flow Velocities at Constructed Channel Inlets
Data from HEC-RAS Hydraulic Model

Reach	River Sta	Profile	Flow Total	Min Chan.	W.S.	Channel
				Elevation	Elevation	Flow Velocity
			(cfs)	NAVD (ft)	NAVD (ft)	(ft/s)
Lower	17.65	Annual Event	315	179.6	191.33	1.45
Lower	17.65	2-Year Event	1171	179.6	194.95	2.19
Lower	17.65	100-Year Event	8240	179.6	197.85	2.8
Lower	17.299*	Annual Event	315	179.6	189.84	1.55
Lower	17.299*	2-Year Event	1171	179.6	192.56	2.37
Lower	17.299*	100-Year Event	8240	179.6	195.26	2.89
Lower	17.25	Annual Event	315	179.6	189.66	1.37
Lower	17.25	2-Year Event	1171	179.6	192.25	2.17
Lower	17.25	100-Year Event	8240	179.6	194.99	2.71

The hydraulic model predicts a 2-year flow event to have a surface water elevation of approximately 194.95 feet (NAVD 88) adjacent to the Straight Channel which correlates with the approximate elevation of the top-of-bank of the Straight Channel. Please see Figure 10 for the approximate extent of inundation of a 2-year event based on the hydraulic model and supported by drone photos after an approximate 2-year precipitation event. *Note that the baseline waters boundary was delineated based on field indicators and the top-of-bank. The 2-year event extent displayed on Figure 10 also includes inundation from ponding in poorly drained soils (as viewed from drone). Most of the surface water onsite during this event was very shallow, from less than an inch, to a few inches deep.*

4.4.3 Stream Gage Study

There is no long-term stream gage in close proximity to the site on the W. Fork Dairy Creek; however, there is a USGS gage on the East Fork Dairy Creek near Meacham Corner (Figure 1). The West and East Forks of Dairy Creek have similar land use types, soils, topography, and geology, so we believe that the flows are similar for both creeks. Green Banks' scientists have visited the project area during high flow events displayed on the East Fork gage, to calibrate recorded flows with the surface water elevations at the DCMB. This will allow us to use the East Fork gage as a predictor of West Fork water levels onsite, as well as evaluate long-term data from the gage as a means of investigating long-term trends in the Creek.

Based on the East Fork gage data (with no West Fork conversion) from 1999-2019, the 2-year event (Ordinary High-Water Flow) was approximately 750 cfs, and the annual event is approximately 400 cfs (Appendix D).

On January 29, 2020, the East Fork gage displayed a flow rate of approximately 566 cfs, near to the 2-year event, which resulted in a surface water elevation at the Straight Channel of 195.45 feet. This is a reassuring correlation as the hydraulic model predicts a 2-year surface water elevation to be approximately 194.95 feet based on the hydrology model flow. Other smaller flood events with flows ranging from 200-300 cfs (E. Fork gage) were also monitored in the winter of 2019-2020 which yielded surface water elevations of 189-190.65 feet on the West Fork.

4.5 HYDROLOGIC DEGRADATION

The DCMB project area has been in agricultural production for over 100 years. During this time, many changes have occurred which have altered the hydrology from historic (pre-settlement) conditions. Please refer to Figure 7: Hydrologic Degradation Map, historic aerial photographs (Figure 8b-c), and Appendices E and F which include a 2006 tiling map and drone photos.

4.5.1 Floodplain Disconnection and Wetland Swale

The W. Fork Dairy Creek has earthen berms and concrete debris piled above the historic top-of-bank, reducing the frequency and duration of the surface water connection between the Creek and floodplain. These earthen berms are approximately 2-3 feet higher than the historic top-of-bank. During our hydrology study we noted that a 2-Year flood event would fill the Creek and Straight Channel to the approximate top-of-bank (artificial, bermed) and spill into the floodplain in areas where the berm was damaged or eroded (see photos in Appendix F). This implies that annual flood events would not enter the floodplain and that the 2-Year event would cause there to be 2-3 feet of surface water at the northern end of the site. Removal of this debris and recontouring the Creek's banks to the approximate historic natural grade will re-connect the Creek to the floodplain and greatly improve the functionality of the riverine wetlands.

Drone photos captured of the DCMB in September of 2020, display the footprint of a swale which is connected to the W. Fork Dairy Creek and enters the project area near the northeast corner. This historic swale likely had seasonal hydrology. It is only about 4-6 inches deeper than the surrounding topography. It flows to the south and southwest and is located primarily in the eastern portion of the site, with a fork that runs toward the southwest within the Phase 1 area. Historically, surface water would enter this swale during high flow events on the W. Fork Dairy Creek, flow through the project area and enter a natural swale to the west of the Bank, currently located within the Killin Wetlands Nature Park. This historic swale was mapped by GPS (Figure 6) at the time of a drone flight and it was noted that the footprint does not appear to flow downhill in all areas, implying that the footprint signature is likely the result of soil type, texture, and nutrient content, and not defined by a change in topography. Decades of farming activities such as discing and tilling have likely "flattened" or "softened" the topography of this historic swale. Please note that a historic swale is displayed on OregonExplorer (ORWAP and SFAM map viewer) in the Oregon Department of Forestry (ODF) stream dataset layer in a similar location to the swale system identified by drone; it is classified as a small stream by ODF (Appendix I).

The Straight Channel is also de-watering the floodplain by allowing surface water to rapidly exit the system, bypassing the natural curve in the W. Fork Dairy Creek. Some of this water would likely enter the floodplain, if this channel were removed or altered.

4.5.2 Drained Wetlands

The Hydrologic Degradation Map (Figure 7), Drone Photo Pages (Appendix F), and ground-level photos (Appendix B) display the drain-tiling and ditch systems that we have identified through the review of aerial photos from 1940 to 2019, communication with the contractor (Hostetler 2020) who installed drain-tiles in 2006 and tiling map they provided, observation of active drains in the spring of 2021, and Drone photos captured in the late summer (September 2020) which show drain-tile lines and the historic swale.

The 2006 tile-line installation and repair of historic tiling included installing a total of 542 feet of 12-inch diameter pipe, 1,820 feet of 8-inch diameter pipe, and 6,280 feet of 4-inch diameter pipe. The drain tile-line work was completed surrounding Wetlands A and B and also connecting them to the East-West Ditch through a primary tile-line that runs along eastern edge of the project area. The outfall of this primary tile-line was observed in the spring 2021, with heavy flows in February and March. The outfall is a 12-inch diameter pipe and displayed on Figure 7 and Appendix B.

Drain tile-lines that were viewed from the drone, were surveyed on the ground using GPS and given identification numbers. Based on the 2006 tiling map, many more tile-lines exist than can be viewed from the drone; this may be in part due to the depth of some of the tiles. Wetland A has two visible tile-lines (A1 and A2) coming from the east near the City of Banks, outside of the project area. Wetland A is connected to Wetland B by the primary tile-line (PR1-A). Wetland B has two visible tile-lines (B1 and B2) coming from the east near the City of Banks, outside of the DCMB. Wetland B, and Wetland A, are drained by the primary tile-line 1 (PR1-A and PR1-B) which runs from the southwest corner of Wetland B southwesterly and outfalls into the East-West Ditch. Several other tile-lines (C1, C2, C3) which originate offsite to the east also outfall at the eastern end of the East-West Ditch.

In the spring of 2021, the outfall of another active tile system was identified, referred to as secondary tile-line, which drains wetlands G, H, and I. This tile system runs from north to south and then westerly to outfall in the North-South ditch. This is an 8-inch diameter ceramic tile system which was installed roughly 30 years ago. Heavy flows were observed from this tile system in the spring of 2021.

Other historic drain tile systems are likely to exist within the DCMB in the locations shown on Figure 7. It is unknown if these historic drainage systems are still active but an attempt to locate and de-activate them will be made during project construction.

Two ditches exist within the DCMB. The East-West Ditch which drains Wetlands A and B, as well as much of the eastern portion of the project area; and a North-South Ditch which runs along the western edge of the Bank that drains all of the wetlands (and hydric soil) upslope. The East-West ditch is approximately 925 feet in length, 8 feet wide and 5 feet deeper than natural grade.

The North-South Ditch begins as a subtle linear depression which becomes deeper as it moves to the south with a total length of 1,800 feet. A majority of the ditch is approximately 10 feet wide and 3 to 5 feet deep. The North-South Ditch runs along the western project area boundary and small portions (slivers) of the ditch may extend onto the Killin Wetlands Nature Park property which is owned by Metro. Metro has indicated that they would support filling of the N-S ditch as it is degrading the Killin Wetlands Nature Park by de-watering historic floodplain areas. The Bank Sponsor will coordinate with Metro regarding construction in this area.

The North-South ditch was noted to have amphibians present during the Prospectus site visit by ODFW, and it was suggested to avoid or minimize impacts to that habitat. During the summer, surface water in this ditch is only present at the southern end within the Phase 2 area. We are proposing to partially fill in the northern portion of the ditch, within the Phase 1 area, during the summer when surface water is no longer present, which will minimize any effect to those semi-aquatic species. Construction of the Phase 2 will also include partial filling of the some of the North-South ditch. The southern end of the North-South ditch will not be altered because it connects to a culvert under the highway and we do not want to affect this drainage. If surface water is present in the ditch during construction of Phase 2, it will be pumped to the southern end of the ditch to allow for construction (e.g. partial filling, recontouring) in dry conditions. Semi-aquatic organisms such as amphibians will be salvaged and relocated to the southern end of the ditch if present. Additionally, the construction of the DCMB project will increase the acreage and quality of this type of habitat, making any acute effects of project construction negligible.

The approximate "zone of influence" for each drainage feature is shown on Figure 7 to display the approximate area affected by the drainage of each feature, and to identify which baseline wetlands qualify for enhancement credit.

4.6 SOILS

Please refer to Figure 4: Baseline Soils and NRCS Soils Map, and Appendix G: Wetland Data Sheets- Soils Survey.

The NRCS soil survey maps approximately 93.1 acres of hydric Wapato silty clay loam within the project area; 59.6 acres within Phase 1, and 33.5 acres within Phase 2 (Figure 4). McBee silty clay loam is mapped on approximately 35.5 acres, with 35.1 acres within Phase 1, and 0.4 acres within Phase 2. McBee silty clay loam is a non-hydric soil with hydric inclusions. A small portion of the project area (approximately 3.9 acres) is mapped as non-hydric Woodburn silt loam.

Green Banks' scientists have conducted a soils survey of the project area with 53 data plots, organized in transects running roughly east to west across the Bank, to locate areas of hydric soils and evaluate the soil characteristics (e.g. textures, colors); data were collected at these plots in 2019. In 2020, 21 additional data plots were added (Plots A-U) to delineate a large (24.5 acre) drained hydric soil area. Please note that we did not collect much data in the locations of wetlands delineated by Pacific Habitat Services in 2019; our focus was on areas of drained hydric soils. We did not attempt to locate tiny pockets of hydric soils due to the relatively low-gradient topography which makes delineating tiny areas problematic. Additionally, we augured many soil plots between each "paired" plot to determine the hydric soil boundary due to the ground being very flat, making it difficult to place "paired" plots in close proximity to each other (<20 feet apart).

In general, the NRCS' soils mapping is roughly accurate with some areas of hydric soils extending further than shown, and some areas of non-hydric soils within the Wapato soil type. A poorly drained, clay-loam to clay textured layer exists, starting within about 6 to 16 inches of the soil surface in the Wapato mapped soils. These clayey textures were also observed in many areas mapped as McBee silty clay loam. It was noted that even though the soil textures and colors were fairly consistent throughout the Wapato mapped series, that some of the soil test locations did not meet the definition of a hydric soil based on the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Valleys, Mountains and Coast Region* (Version 2.0, 2010). The most common hydric soil indicator observed was Redox Dark Surface (F6), which by definition starts within the top eight inches of the soil profile and must be at least 4 inches thick. In some cases, a matrix value of 3 or less with a chroma of 2 or less with 5% or more distinct or prominent redox concentrations (parameters of F6) were observed starting slightly below eight inches of the ground surface. The NRCS' soil description for the Wapato series describes a change in soil layer Ap to A occurring between 9 to 16 inches (we noted it to occur between 6 to 16 inches); the A layer has redoximorphic features and the Ap layer does not. This implies that the Wapato series would not meet indicator F6 for a hydric soil from the Regional Supplement, even though the series is classified as hydric by NRCS. The soils series descriptions are known to be presented as a range in depths and colors, and a variation in soil break by a couple of inches would still be considered the same soil type.

The hydric soil survey focused on identifying areas that meet the definition of a hydric soil based on the Regional Supplement to determine the restoration areas. The survey also investigated the distribution of various soil types within the project area to identify historic hydric soil locations. Of the 74 soil plots investigated, 62 of them matched (or within range) the Wapato soil series description. The Wapato series description describes a soil layer change (A to Bgl) from 16 to 22 inches, indicated by a change in color from 10YR 3/2 to 10YR 4/2. This distinct color change was observed at all 62 soil plots determined to be within the Wapato series.

The project area has been in agriculture for more than 100 years and some plowing and discing of soils has occurred, as well as soil movement associated with the constructing and de-commissioning of ditches and access roads. It is likely that farming practices have removed micro-topography and leveled areas causing the historically hydric Wapato series soils to be disturbed. The movement of topsoil, related to ground leveling, likely added topsoil to much of area covered by historic Wapato soils. This has likely caused many areas within the Wapato soils series to not meet the definition of a hydric soil based on the Regional Supplement.

During our soils investigation, we noted evidence of shallow soil disturbance (<13 inches in depth) in a few areas likely due to farming practices. The most recent shallow soil disturbance occurred approximately seven years ago when installing the current tall fescue crop.

4.7 VEGETATION

Nearly all of the project area is currently planted in tall fescue (*Schedonorous arundinaceus*) and very few weeds exist within the farmed area (Figure 5). Some of the weedy species commonly observed include annual bluegrass (*Poa annua)*, perennial ryegrass (*Lolium perenne),* Canada thistle (*Cirsium arvense)*, Queen Anne's lace (*Daucus carota)* and curly dock *(Rumex crispus).* The current fescue crop was installed approximately seven years ago (2014). The area has also been planted in other crops such as wheat and clover.

The baseline Wetlands A and B are dominated by reed canarygrass with field horsetail *(Equisetum arvense)* and Queen Anne's lace around the perimeter. Wetlands D, E, F, G, H, and I are actively farmed and planted in tall fescue. The ditches are dominated by reed canarygrass with some unvegetated portions.

There is a narrow (15-30ft wide) forested buffer along the W. Fork Dairy Creek and Straight Channel dominated by Oregon white oak (*Quercus garryana*), Douglas hawthorne *(Crataegus douglasii)*, red alder (*Alnus rubra*) and big leaf maple (*Acer macrophyllum)*. The shrub layer is dominated by non-native blackberry (Rubus sp.) with lesser amounts of beaked hazelnut (*Corylus cornuta*), serviceberry (*Amelanchier alnifolia),* pea-fruit rose *(Rosa pisocarpa),* and tall Oregon grape *(Mahonia aquifolium).* The herbaceous layer is dominated by a mix of native and non-native species including: common nettle (*Urtica dioica*), velvet grass (*Holcus lanatus*), nipplewort (*Lapsana communis*), dock species (*Rumex* sp.), poison hemlock (*Conium maculatum*), cow parsnip (*Heracleum maximum*), thistles (*Cirsium* sp.), bedstraw (*Galium aparine*), and English ivy (*Hedera helix*).

There is potential for the import of weed seed into the project area from flood events on the W. Fork Dairy Creek. Based on our observations of non-native species distributions in the Creek, reed canarygrass is the most likely invasive species to enter the project area from flood events. Other common invasive species such as purple loosestrife (*Lythrum salicaria*), yellow flag iris (*Iris pseudacorus*), and garlic mustard (Alliaria petiolate) have not been observed within the project area or adjacent properties.

The western project area boundary is adjacent to the Killin Wetlands Nature Park and an intact mixed (deciduous and coniferous) forest. The mixed forest is located on the adjacent property but trees and shrubs provide shade into the DCMB project area. The offsite adjacent forest includes a mix of tree species such as Oregon ash (*Fraxinus latifolia*), Oregon white oak, Douglas fir (*Pseudotsuga menziesii*)*,* Grand fir *(Abies grandis),* black cottonwood (*Populus balsamifera spp. tricocarpa*) and big leaf maple. Commonly observed shrubs included bitter cherry (*Prunus emarginata*), Indian plum (*Oemleria cerasiformis*), willow species (*Salix*), red-osier dogwood *(Cornus sericea),* beaked hazelnut, trailing blackberry (*Rubus ursinus),* and snowberry *(Symphoricarpos albus).* A small population of quaking aspen (*Populus tremuloides*) exists near the southwestern project area boundary.

4.8 FUNCTION AND VALUES ASSESSMENTS

Function and Values assessments were completed for baseline conditions and predicted post-construction conditions (approximately 5-10 years after project implementation).

4.8.1 Oregon Rapid Wetland Assessment Protocol (ORWAP)

ORWAP assessments were completed for the baseline conditions as well as the predicted conditions approximately 5 to 10 years after project construction; these assessments were completed for the Slope/Flats and Riverine wetlands separately, as well as for all of the wetlands combined. The Slopes/Flats and Riverine wetlands were evaluated separately to determine functional lift predicted after project construction to qualify for enhancement credit. Additional assessments were completed on the all wetlands combined, or grouped, to more accurately display the functional lift of the entire project; The project area is a wetland complex of Riverine and Slope/Flats wetlands and separating them by HGM class inaccurately reduces the functional lift prediction of each type of wetland. The combined assessment scores will also be used to determine if the DCMB is a suitable match for permittees requiring mitigation. ORWAP Version 3.2 (Adamus et al. 2020) was used to complete the assessments. Please refer to Appendix H, which includes the ORWAP reports and various other maps and supporting information used for the assessments.

Riverine Wetlands

Baseline and predicted ORWAP assessments were completed for Riverine wetlands E, G, H and I. The Assessment Area (AA) was defined as the delineated wetland boundaries of those wetlands. Please refer to Table 3 for ORWAP Baseline conditions of the Riverine wetlands.

TABLE 3: Riverine Baseline	**Dairy Creek Mitigation Bank- Wetland E, G, H, I (Riverine) Baseline Conditions**
Investigator Name:	**C. Jonas Moiel**
Date of Field Assessment:	**Various dates in 2020 (including 7/22)**
Scores will appear below after data are entered in worksheets OF, F, T, and S. See Manual for definitions and descriptions of how scores were computed and ratings assigned.	

	Normalized Scores & Ratings for this Assessment Area (AA):					
Specific Functions or Values:	**Function** Score	Function Rating	Rating Break Proximity	**Values** Score	Values Rating	Rating Break Proximity
Water Storage & Delay (WS)	6.29	Moderate		8.33	Higher	
Sediment Retention & Stabilization (SR)	3.38	Lower	LM	3.75	Moderate	LM
Phosphorus Retention (PR)	3.96	Moderate		4.30	Moderate	
Nitrate Removal & Retention (NR)	2.80	Lower		3.53	Lower	LM
Anadromous Fish Habitat (FA)	6.00	Moderate		10.00	Higher	
Resident Fish Habitat (FR)	0.00	Lower		0.00	Lower	
Amphibian & Reptile Habitat (AM)	6.25	Moderate		2.25	Lower	
Waterbird Nesting Habitat (WBN)	8.02	Higher		2.28	Moderate	
Waterbird Feeding Habitat (WBF)	3.89	Moderate		2.92	Moderate	LM
Aquatic Invertebrate Habitat (INV)	1.00	Lower		1.42	Lower	
Songbird, Raptor, Mammal Habitat (SBM)	1.71	Lower		5.00	Moderate	
Water Cooling (WC)	2.22	Lower	LM	0.00	Lower	
Native Plant Diversity (PD)	4.97	Moderate		6.67	Moderate	MH
Pollinator Habitat (POL)	5.36	Moderate		4.64	Moderate	
Organic Nutrient Export (OE)	4.89	Moderate				
Carbon Sequestration (CS)	2.46	Lower				
Public Use & Recognition (PU)				2.76	Lower	

Other Attributes:	Score	Rating	Rating Break Proximity
Wetland Sensitivity (SEN)	0.92	Lower	

Wetland Ecological Condition (EC)	0.00	Lower	
Wetland Stressors (STR)	6.79	Higher	

GROUPS	Selected Function	Function Rating	Rating Break Proximity	Values Rating	Rating Break Proximity
Hydrologic Function (WS)	Water Storage & Delay (WS)	Moderate		Higher	
Water Quality Support (SR, PR, or NR)	Phosphorus Retention (PR)	Moderate		Moderate	
Fish Habitat (FA or FR)	Anadromous Fish Habitat (FA)	Moderate		Higher	
Aquatic Habitat (AM, WBF, or WBN)	Waterbird Nesting Habitat (WBN)	Higher		Moderate	
Ecosystem Support (WC, INV, PD, POL, SBM, or OE)	Native Plant Diversity (PD)	Moderate		Moderate	MH

The baseline Riverine ORWAP functional scores are primarily "Moderate", with 8 of 16 functions rated as "Moderate", 7 of 16 functions rated as "Lower", and 1 of 16 functions rated as "Higher". Values scores are primarily "Moderate" to "Lower" in most categories, however are "Higher" for Water Storage and Delay (WS) and Anadromous Fish Habitat (FA).

Please refer to the following Table 4 for Riverine predicted ORWAP scores approximately 5 to 10 years after project construction.

Table 4: Riverine Predicted	**Dairy Creek Mitigation Bank- Wetland E, G, H, I (Riverine) Predicted Conditions**
Investigator Name:	**C. Jonas Moiel**
Date of Field Assessment:	**Predicted Conditions 5-10 Years after Construction**
Scores will appear below after data are entered in worksheets OF, F, T, and S. See Manual for definitions and descriptions of how scores were computed and ratings assigned.	

	Normalized Scores & Ratings for this Assessment Area (AA):					
Specific Functions or Values:	**Function** Score	Function Rating	Rating Break Proximity	**Values** Score	Values Rating	Rating Break Proximity
Water Storage & Delay (WS)	6.78	Moderate		8.33	Higher	
Sediment Retention & Stabilization (SR)	4.71	Moderate		3.91	Moderate	LM
Phosphorus Retention (PR)	4.93	Moderate		3.93	Moderate	
Nitrate Removal & Retention (NR)	4.67	Moderate		3.22	Lower	LM
Anadromous Fish Habitat (FA)	6.82	Moderate		10.00	Higher	
Resident Fish Habitat (FR)	0.00	Lower		0.00	Lower	
Amphibian & Reptile Habitat (AM)	6.44	Moderate	MH	3.95	Lower	
Waterbird Nesting Habitat (WBN)	6.77	Moderate	MH	1.72	Moderate	LM
Waterbird Feeding Habitat (WBF)	4.12	Moderate		2.08	Lower	LM
Aquatic Invertebrate Habitat (INV)	7.18	Higher	MH	2.22	Lower	
Songbird, Raptor, Mammal Habitat (SBM)	3.32	Lower	LM	5.00	Moderate	
Water Cooling (WC)	2.96	Moderate	LM	0.00	Lower	
Native Plant Diversity (PD)	8.07	Higher		10.00	Higher	
Pollinator Habitat (POL)	8.44	Higher		6.70	Higher	
Organic Nutrient Export (OE)	5.42	Moderate				
Carbon Sequestration (CS)	4.71	Moderate				
Public Use & Recognition (PU)				4.47	Moderate	LM

Other Attributes:	Score	Rating	Rating Break Proximity
Wetland Sensitivity (SEN)	7.33	Higher	
Wetland Ecological Condition (EC)	4.22	Moderate	
Wetland Stressors (STR)	6.34	Higher	MH

GROUPS	Selected Function	Function Rating	Rating Break Proximity	Values Rating	Rating Break Proximity
Hydrologic Function (WS)	Water Storage & Delay (WS)	Moderate		Higher	
Water Quality Support (SR, PR, or NR)	Sediment Retention & Stabilization (SR)	Moderate		Moderate	LM
Fish Habitat (FA or FR)	Anadromous Fish Habitat (FA)	Moderate		Higher	
Aquatic Habitat (AM, WBF, or WBN)	Waterbird Nesting Habitat (WBN)	Moderate	MH	Moderate	LM
Ecosystem Support (WC, INV, PD, POL, SBM, or OE)	Native Plant Diversity (PD)	Higher		Higher	

The predicted Riverine ORWAP functional scores are primarily “Moderate”, with 11 of 16 functions rated as “Moderate”, 3 of 16 functions rated as “Higher”, and 2 of 16 functions rated as “Lower”. This is a substantial increase in functionality from the baseline conditions, raising four functional categories from “Lower” to “Moderate”, one category from “Lower” to “Higher” (Aquatic Invertebrate Habitat), two functional categories from “Moderate” to “Higher”. One functional category, Waterbird Nesting Habitat (WBN), was predicted to have reduced function after project implementation. This is due to conversion of the herbaceous grass field into primarily forested wetlands, which caused a drop in WBN non-tidal function indicators: distance to herbaceous open land, unshaded herbaceous vegetation, and upland trees as percent of perennial cover.

The removal of earthen berms along W. Fork Dairy Creek, tiling, and ditch systems, will restore the hydrology to drained riverine wetlands and enhance the hydrology of the baseline wetlands. These improvements as well as conversion from agriculture to native plant communities will greatly improve the functionality of the Riverine wetlands.

Slope/ Flats Wetlands

Baseline and predicted ORWAP assessments were completed for Slope/Flats Wetlands A, B, and D; wetland F was not evaluated by ORWAP because it will not have enough hydrologic improvement to qualify for enhancement credit. The Assessment Area (AA) was defined as the delineated wetland boundaries of those wetlands. Please refer to Table 5 for ORWAP Baseline conditions of the Slope/Flats wetlands.

Table 5: Slope/Flats Baseline	Dairy Creek Mitigation Bank- Wetlands A, B, D (Slope/Flats) Baseline Conditions
Investigator Name:	C. Jonas Moiel
Date of Field Assessment:	Various dates in 2020 (including 7/22)
Scores will appear below after data are entered in worksheets OF, F, T, and S. See Manual for definitions and descriptions of how scores were computed and ratings assigned.	

	Normalized Scores & Ratings for this Assessment Area (AA):					
Specific Functions or Values:	**Function** Score	Function Rating	Rating Break Proximity	**Values** Score	Values Rating	Rating Break Proximity
Water Storage & Delay (WS)	5.97	Moderate		8.33	Higher	
Sediment Retention & Stabilization (SR)	4.18	Moderate	LM	4.81	Moderate	
Phosphorus Retention (PR)	3.69	Moderate		3.76	Moderate	
Nitrate Removal & Retention (NR)	3.84	Lower	LM	3.08	Lower	LM
Anadromous Fish Habitat (FA)	0.00	Lower		0.00	Lower	
Resident Fish Habitat (FR)	0.00	Lower		0.00	Lower	
Amphibian & Reptile Habitat (AM)	6.09	Moderate		4.50	Moderate	LM
Waterbird Nesting Habitat (WBN)	8.58	Higher		5.19	Moderate	
Waterbird Feeding Habitat (WBF)	4.04	Moderate		6.67	Moderate	MH
Aquatic Invertebrate Habitat (INV)	2.71	Lower		2.86	Lower	LM
Songbird, Raptor, Mammal Habitat (SBM)	1.96	Lower		5.67	Moderate	
Water Cooling (WC)	9.84	Higher		0.00	Lower	
Native Plant Diversity (PD)	0.00	Lower		0.00	Lower	
Pollinator Habitat (POL)	5.32	Moderate		6.29	Higher	
Organic Nutrient Export (OE)	6.03	Moderate				
Carbon Sequestration (CS)	1.62	Lower				
Public Use & Recognition (PU)				3.34	Lower	

Other Attributes:	Score	Rating	Rating Break Proximity
Wetland Sensitivity (SEN)	0.95	Lower	
Wetland Ecological Condition (EC)	0.02	Lower	
Wetland Stressors (STR)	6.79	Higher	

GROUPS	Selected Function	Function Rating	Rating Break Proximity	Values Rating	Rating Break Proximity
Hydrologic Function (WS)	Water Storage & Delay (WS)	Moderate		Higher	
Water Quality Support (SR, PR, or NR)	Sediment Retention & Stabilization (SR)	Moderate	LM	Moderate	
Fish Habitat (FA or FR)	Anadromous Fish Habitat (FA)	Lower		Lower	
Aquatic Habitat (AM, WBF, or WBN)	Waterbird Nesting Habitat (WBN)	Higher		Moderate	
Ecosystem Support (WC, INV, PD, POL, SBM, or OE)	Water Cooling (WC)	Higher		Lower	

The baseline Slope/Flats ORWAP functional scores are primarily “Moderate” and “Lower”, with 7 of 16 functions rated as “Moderate” and “Lower”, 2 of 16 functions rated as “Higher”. Values scores are primarily “Moderate” to “Lower” in most categories, however scored “Higher” for Water Storage and Delay (WS).

Please refer to the following Table 6 for Slope/Flats predicted ORWAP scores approximately 5 to 10 years after project construction.

Table 6: Slopes/Flats Predicted	**Dairy Creek Mitigation Bank- Wetlands A, B, D (Slope/Flats) Predicted Conditions**
Investigator Name:	**C. Jonas Moiel**
Date of Field Assessment:	**Various dates in 2020 (including 7/22)**
Scores will appear below after data are entered in worksheets OF, F, T, and S. See Manual for definitions and descriptions of how scores were computed and ratings assigned.	

	Normalized Scores & Ratings for this Assessment Area (AA):					
Specific Functions or Values:	**Function** Score	Function Rating	Rating Break Proximity	**Values** Score	Values Rating	Rating Break Proximity
Water Storage & Delay (WS)	6.26	Moderate		8.33	Higher	
Sediment Retention & Stabilization (SR)	4.67	Moderate		4.81	Moderate	
Phosphorus Retention (PR)	3.30	Moderate	LM	3.76	Moderate	
Nitrate Removal & Retention (NR)	4.49	Moderate	LM	3.08	Lower	LM
Anadromous Fish Habitat (FA)	0.00	Lower		0.00	Lower	
Resident Fish Habitat (FR)	0.00	Lower		0.00	Lower	
Amphibian & Reptile Habitat (AM)	6.23	Moderate		4.54	Moderate	LM
Waterbird Nesting Habitat (WBN)	7.82	Higher		5.19	Moderate	
Waterbird Feeding Habitat (WBF)	4.35	Moderate		6.67	Moderate	MH
Aquatic Invertebrate Habitat (INV)	4.50	Moderate	LM	3.64	Moderate	
Songbird, Raptor, Mammal Habitat (SBM)	3.26	Lower	LM	6.33	Moderate	
Water Cooling (WC)	10.00	Higher		0.00	Lower	
Native Plant Diversity (PD)	7.25	Higher	MH	6.67	Moderate	MH
Pollinator Habitat (POL)	7.71	Higher	MH	6.80	Higher	
Organic Nutrient Export (OE)	6.07	Moderate				
Carbon Sequestration (CS)	5.86	Moderate	MH			
Public Use & Recognition (PU)				5.28	Moderate	

Other Attributes:	Score	Rating	Rating Break Proximity
Wetland Sensitivity (SEN)	2.77	Moderate	
Wetland Ecological Condition (EC)	4.27	Moderate	
Wetland Stressors (STR)	6.79	Higher	

GROUPS	Selected Function	Function Rating	Rating Break Proximity	Values Rating	Rating Break Proximity
Hydrologic Function (WS)	Water Storage & Delay (WS)	Moderate		Higher	
Water Quality Support (SR, PR, or NR)	Sediment Retention & Stabilization (SR)	Moderate		Moderate	
Fish Habitat (FA or FR)	Anadromous Fish Habitat (FA)	Lower		Lower	
Aquatic Habitat (AM, WBF, or WBN)	Waterbird Nesting Habitat (WBN)	Higher		Moderate	
Ecosystem Support (WC, INV, PD, POL, SBM, or OE)	Pollinator Habitat (POL)	Higher	MH	Higher	

The predicted Slope/Flats ORWAP functional scores are primarily "Moderate", with 9 of 16 functions rated as "Moderate", 4 of 16 functions rated as "Higher", and 3 of 16 functions rated as "Lower". This is a substantial increase in functionality from the baseline conditions, raising three functional categories from "Lower" to "Moderate", one category from "Lower" to "Higher" (native plant diversity), and one category from "Moderate" to "Higher".

The deactivation of tiling and ditch systems, will enhance the hydrology of the baseline wetlands. These improvements as well as conversion from agriculture to native plant communities, addition of microtopography, etc. will greatly improve the functionality of the Slope/Flats wetlands.

Entire Wetland Area Combined (all HGM classes)

For the purpose of these assessments, the Assessment Area (AA) was defined as the total area of wetland mitigation for both phases (100 acres), not including upland buffers or waters. The AA was determined following the procedure described in the ORWAP User's Manual V 3.2, Appendix F, Section 2 "Delimiting the Assessment Area for Regulatory Uses of ORWAP", pertaining to defining the AA for projects with more than one wetland. The AA was determined this way because the baseline condition has multiple relatively small wetlands of different HGM classes, and the entire area will be wetland after project construction. The results of these assessments will also be used by permittees to determine if the DCMB is a suitable ecological match for mitigation. Please refer to Table 7 for ORWAP baseline scores on the entire wetland area.

Table 7: Entire Wetland Baseline	**Dairy Creek Mitigation Bank- Baseline Conditions all Wetlands; entire project area within predicted wetland boundary**
Investigator Name:	**C. Jonas Moiel**
Date of Field Assessment:	**Various dates in 2020 (including 7/22)**
Scores will appear below after data are entered in worksheets OF, F, T, and S. See Manual for definitions and descriptions of how scores were computed and ratings assigned.	

	Normalized Scores & Ratings for this Assessment Area (AA):					
Specific Functions or Values:	**Function** Score	Function Rating	Rating Break Proximity	**Values** Score	Values Rating	Rating Break Proximity
Water Storage & Delay (WS)	6.09	Moderate		8.33	Higher	
Sediment Retention & Stabilization (SR)	5.23	Moderate		5.98	Moderate	MH
Phosphorus Retention (PR)	4.00	Moderate		4.81	Moderate	
Nitrate Removal & Retention (NR)	5.35	Moderate		3.96	Moderate	LM
Anadromous Fish Habitat (FA)	6.56	Moderate		10.00	Higher	
Resident Fish Habitat (FR)	4.50	Moderate		3.37	Moderate	
Amphibian & Reptile Habitat (AM)	5.51	Moderate		2.80	Lower	
Waterbird Nesting Habitat (WBN)	7.61	Higher		3.53	Moderate	
Waterbird Feeding Habitat (WBF)	3.85	Moderate		4.17	Moderate	
Aquatic Invertebrate Habitat (INV)	4.99	Moderate		2.37	Lower	
Songbird, Raptor, Mammal Habitat (SBM)	3.70	Lower	LM	5.00	Moderate	
Water Cooling (WC)	10.00	Higher		0.00	Lower	
Native Plant Diversity (PD)	5.78	Moderate	MH	10.00	Higher	
Pollinator Habitat (POL)	6.44	Moderate		4.23	Moderate	

Organic Nutrient Export (OE)	6.83	Higher	MH			
Carbon Sequestration (CS)	3.85	Moderate	LM			
Public Use & Recognition (PU)				3.54	Lower	LM

Other Attributes:	Score	Rating	Rating Break Proximity
Wetland Sensitivity (SEN)	5.78	Higher	
Wetland Ecological Condition (EC)	3.30	Moderate	LM
Wetland Stressors (STR)	6.79	Higher	

GROUPS	Selected Function	Function Rating	Rating Break Proximity	Values Rating	Rating Break Proximity
Hydrologic Function (WS)	Water Storage & Delay (WS)	Moderate		Higher	
Water Quality Support (SR, PR, or NR)	Sediment Retention & Stabilization (SR)	Moderate		Moderate	MH
Fish Habitat (FA or FR)	Anadromous Fish Habitat (FA)	Moderate		Higher	
Aquatic Habitat (AM, WBF, or WBN)	Waterbird Nesting Habitat (WBN)	Higher		Moderate	
Ecosystem Support (WC, INV, PD, POL, SBM, or OE)	Organic Nutrient Export (OE)	Higher	MH	0.00	0.00

The entire wetland baseline ORWAP functional scores are primarily "Moderate", with 12 of 16 functions rated as "Moderate", 3 of 16 functions rated as "Higher", and 1 of 16 functions rated as "Lower". Values scores are primarily "Moderate" to "Lower" in most categories, and "Higher" for Water Storage and Delay (WS) and Anadromous Fish Habitat (FA).

Please refer to the following Table 8 for predicted ORWAP scores on the entire wetland area approximately 5 to 10 years after project construction.

Table 8: Entire Wetland Predicted	**Dairy Creek Mitigation Bank- Predicted Conditions 5-10 Years after construction; all Wetlands; entire project area within predicted wetland boundary**
Investigator Name:	**C. Jonas Moiel**
Date of Field Assessment:	**Future predicted condition after construction 5-10 years**
Scores will appear below after data are entered in worksheets OF, F, T, and S. See Manual for definitions and descriptions of how scores were computed and ratings assigned.	

	Normalized Scores & Ratings for this Assessment Area (AA):					
Specific Functions or Values:	**Function** Score	Function Rating	Rating Break Proximity	**Values** Score	Values Rating	Rating Break Proximity
Water Storage & Delay (WS)	5.08	Moderate		8.33	Higher	
Sediment Retention & Stabilization (SR)	5.29	Moderate		5.51	Moderate	MH
Phosphorus Retention (PR)	3.45	Moderate	LM	4.41	Moderate	
Nitrate Removal & Retention (NR)	6.14	Moderate		3.62	Lower	LM
Anadromous Fish Habitat (FA)	8.18	Higher	MH	10.00	Higher	

Resident Fish Habitat (FR)	5.94	Moderate	MH	4.53	Moderate	MH
Amphibian & Reptile Habitat (AM)	6.32	Moderate	MH	5.24	Moderate	
Waterbird Nesting Habitat (WBN)	7.89	Higher		3.53	Moderate	
Waterbird Feeding Habitat (WBF)	9.01	Higher		4.17	Moderate	
Aquatic Invertebrate Habitat (INV)	7.27	Higher		4.29	Moderate	
Songbird, Raptor, Mammal Habitat (SBM)	7.23	Higher		6.67	Moderate	MH
Water Cooling (WC)	9.12	Higher		8.88	Higher	
Native Plant Diversity (PD)	9.65	Higher		10.00	Higher	
Pollinator Habitat (POL)	9.86	Higher		6.19	Higher	
Organic Nutrient Export (OE)	6.52	Moderate	MH			
Carbon Sequestration (CS)	5.55	Moderate				
Public Use & Recognition (PU)				5.39	Moderate	

Other Attributes:	Score	Rating	Rating Break Proximity
Wetland Sensitivity (SEN)	7.62	Higher	
Wetland Ecological Condition (EC)	4.54	Moderate	
Wetland Stressors (STR)	4.53	Moderate	

GROUPS	Selected Function	Function Rating	Rating Break Proximity	Values Rating	Rating Break Proximity
Hydrologic Function (WS)	Water Storage & Delay (WS)	Moderate		Higher	
Water Quality Support (SR, PR, or NR)	Sediment Retention & Stabilization (SR)	Moderate		Moderate	MH
Fish Habitat (FA or FR)	Anadromous Fish Habitat (FA)	Higher	MH	Higher	
Aquatic Habitat (AM, WBF, or WBN)	Waterbird Nesting Habitat (WBN)	Higher		Moderate	
Ecosystem Support (WC, INV, PD, POL, SBM, or OE)	Water Cooling (WC)	Higher		Higher	

The predicted post-construction ORWAP scores on the entire wetland area display function lift in the categories of: Anadromous Fish Habitat (FA) from Moderate (baseline) to Higher (post-construction); Waterbird Feeding Habitat (WBF) from Moderate to Higher; Aquatic Invertebrate Habitat (INV) from Moderate to Higher; Songbird, Raptor, Mammal Habitat (SBM) from Lower to Higher; Native Plant Diversity (PD) from Moderate to Higher; and Pollinator Habitat (POL) from Moderate to Higher. The Wetland Stressors (STR) score varied from Higher for the baseline conditions, to Moderate post-construction. Values scores of "10" are displayed for both baseline and post-construction assessments in the categories of Anadromous Fish Habitat and Native Plant Diversity.

Based on the comparison between baseline and post-construction ORWAP scores for the entire wetland area, most functional categories will have functional lift if the project is implemented. It is important to note that the acreage of wetland increase between the baseline and post-construction is not directly accounted for in ORWAP. The baseline conditions include 9.12 acres of wetland and the post-construction wetlands will total approximately 100 acres. Not only will the construction of the project cause an increase in functional lift to the existing wetlands but a large amount of lift for areas that are proposed for wetland restoration and creation; these upland areas would have assumed functional scores of “0” in all categories (since they are not presently wetland).

The ORWAP assessments assume that both Phases will be built. If only Phase 1 is built, the post-construction ORWAP assessments can be modified during the post-construction delineation of Phase 1 and updated at that time.

4.8.2 Stream Functional Assessment Method (SFAM)

Stream functional assessments were completed on the W. Fork Dairy Creek using SFAM 1.1 (Nadeau et al. 2020) to document baseline conditions as well as predicted conditions approximately 10 years after project implementation. SFAM assessments were completed to document the baseline conditions with fieldwork completed on September 24th and 25th 2020, and March 18th 2021; one assessment evaluated the baseline conditions of the perennial W. Fork Dairy Creek, and the other evaluated the intermittent Straight Channel which is a side-channel to the Creek. The predicted post-construction SFAMs were completed by adjusting certain field scores from the baseline that are predicted to change 10 years after project implementation; please note that the SFAM office component which informs the “Values” scores were not altered from the baseline to the post-construction assessments. Predicted SFAM assessments were completed on the perennial W. Fork Dairy Creek, as well as the intermittent Straight Channel.

The proposed intermittent channels (creation) are currently upland and therefore have baseline SFAM scores of zero. A predictive SFAM (10 years after project implementation) will be completed for the proposed intermittent channels at Year 1 and included in the annual monitoring report. The predictive SFAM will be completed after construction because the method requires collection of field measurements which would not be possible until the channels are created.

Please refer to Appendix I which includes the SFAM reports, StreamStats reports, maps, assessment reasoning, and data.

Perennial W. Fork Dairy Creek

For the perennial W. Fork Dairy Creek assessments, the SFAM Project Area (PA) is defined as the direct area of impact; this included approximately 1,050 linear feet (measured with SFAM Map Viewer) of streambank enhancement on the perennial channel of the Creek. The Proximal Assessment Area (PAA) has the same length as the PA, but the width is equivalent to the “bank full width” multiplied by two, or 50 feet wide, extending from the top-of-bank on both sides of the Creek. The Extended Assessment Area (EAA) is suggested to extend five “bank full widths” upstream and downstream of the PA, which would be equivalent to 250 feet upstream and downstream of the PA. Due to access restrictions upstream of the PA, we defined our EAA to extend 500 feet downstream of the PA (the recommended total EAA length). Based on visual observations and aerial photographs, the 250 feet upstream of the PA appears to have similar to characteristics to the stream reach downstream of the EAA and therefore should be representative for assessment purposes.

The W. Fork Dairy Creek primary channel meanders to the north, outside of the PA for a portion of the stream reach, at the location where the Straight Channel runs along the northern Bank boundary. This portion of the primary channel was not assessed due to access restrictions; alternatively, the two portions of the primary channel that are within the DCMB were assessed. The Straight Channel is defined as a "side channel" by SFAM and minimal field data is required for side channels other than length. Please see the following Baseline SFAM summary score Table 9.

Table 9: Baseline SFAM Perennial W. Fork Dairy Creek

Project Area Name:	Dairy Creek Mitigation Bank		
Investigator Name:	Moiel, A. Vlahakis, Crissman		
Date of Field Assessment:	9/24 and 9/25/20, and 3/18/21		
Latitude (decimal degrees):	45.6206	Longitude (decimal degrees):	-123.1213

SPECIFIC FUNCTIONS	Function Score	Function Rating	Value Score	Value Rating
Surface Water Storage (SWS)	6.24	Moderate	6.33	Moderate
Sub/Surface Water Transfer (SST)	4.83	Moderate	0.00	Lower
Flow Variation (FV)	4.47	Moderate	6.67	Moderate
Sediment Continuity (SC)	3.30	Moderate	8.08	Higher
Sediment Mobility (SM)	2.85	Lower	5.00	Moderate
Maintain Biodiversity (MB)	4.02	Moderate	6.63	Moderate
Create and Maintain Habitat (CMH)	3.94	Moderate	8.03	Higher
Sustain Trophic Structure (STS)	4.17	Moderate	5.48	Moderate
Nutrient Cycling (NC)	4.30	Moderate	6.76	Moderate
Chemical Regulation (CR)	4.44	Moderate	2.76	Lower
Thermal Regulation (TR)	3.77	Moderate	3.07	Moderate

GROUPED FUNCTIONS	REPRESENTATIVE FUNCTION	Function Group Rating	Value Group Rating
Hydrologic Function (SWS, SST, FV)	Surface Water Storage (SWS)	Moderate	Moderate
Geomorphic Function (SC, SM)	Sediment Continuity (SC)	Moderate	Higher
Biologic Function (MB, CMH, STS)	Create and Maintain Habitat (CMH)	Moderate	Higher
Water Quality Function (NC, CR, TR)	Nutrient Cycling (NC)	Moderate	Moderate

The baseline perennial assessment functional scores are primarily "Moderate", with 11 of 12 functions rated as "Moderate", and 1 of 12 functions rated as "Lower". Grouped functional categories are all rated as "Moderate". Values scores are "Moderate" for Hydrologic and Water Quality function, and "Higher" for Geomorphic and Biologic Function.

The predicted post-construction SFAM was completed by adjusting certain EAA field data scores (occurring within the PAA) based on the DCMB design including Side Channels (F12), Lateral Migration (F13), Wood (F14), and Incision (F15); field scores such as Substrate Embeddedness (F16), Thalweg Depth (F17), and Wetted Width (F17) were not adjusted from the baseline conditions for the post-construction assessment because these characteristics would not likely change as a result of project implementation. Proximal Area Assessment (PAA) field scores were also adjusted for predicted post-construction conditions including: Natural Cover (F1), Invasive Vegetation (F2), Native Woody Vegetation (F3), Large Trees (F4), Riparian Corridor (F5), Exclusion (F7), Armor (F8), and Erosion (F9).

Please refer to Table 10, which summarizes the post-construction predicted SFAM scores for the perennial W. Fork Dairy Creek.

Table 10: Predicted SFAM Perennial W. Fork Dairy Creek

Project Area Name:	Dairy Creek Mitigation Bank		
Investigator Name:	Moiel		
Date of Field Assessment:	NA- Predicted 10 Years after construction		
Latitude (decimal degrees):	45.6206	Longitude (decimal degrees):	-123.1213

SPECIFIC FUNCTIONS	Function Score	Function Rating	Value Score	Value Rating
Surface Water Storage (SWS)	7.82	Higher	6.33	Moderate
Sub/Surface Water Transfer (SST)	7.75	Higher	0.00	Lower
Flow Variation (FV)	4.47	Moderate	6.67	Moderate
Sediment Continuity (SC)	5.27	Moderate	8.08	Higher
Sediment Mobility (SM)	4.35	Moderate	5.00	Moderate
Maintain Biodiversity (MB)	7.12	Higher	6.63	Moderate
Create and Maintain Habitat (CMH)	6.18	Moderate	8.03	Higher
Sustain Trophic Structure (STS)	8.55	Higher	5.48	Moderate
Nutrient Cycling (NC)	7.82	Higher	6.76	Moderate
Chemical Regulation (CR)	8.31	Higher	2.76	Lower
Thermal Regulation (TR)	5.88	Moderate	3.07	Moderate

GROUPED FUNCTIONS	REPRESENTATIVE FUNCTION	Function Group Rating	Value Group Rating
Hydrologic Function (SWS, SST, FV)	Surface Water Storage (SWS)	Higher	Moderate
Geomorphic Function (SC, SM)	Sediment Continuity (SC)	Moderate	Higher
Biologic Function (MB, CMH, STS)	Sustain Trophic Structure (STS)	Higher	Moderate
Water Quality Function (NC, CR, TR)	Nutrient Cycling (NC)	Higher	Moderate

Based on a comparison of the baseline and predicted SFAM scores for the perennial W. Fork Dairy Creek, there should be a substantial increase in functionality of the Creek if the project is implemented. The baseline SFAM scores were moderate for all functions except for Sediment Mobility (SM) which was “lower”. The post-construction predicted scores are higher to moderate for all functions. This predicted increase in SFAM functional scores can be attributed to improving certain stream characteristics such as: reducing the erosion of the stream banks along the PA by re-contouring to gentle slopes, removing artificial debris such as concrete and earthen berms which are disconnecting the Creek from floodplain, planting of forested buffers greater than 330 feet wide, placement of large wood and woody debris, reduced invasive species cover, and increased side channel habitat.

Note that the values for “large tree” on the PAA field forms were the same for the baseline and predicted assessments because there will not be an increase in large trees in a ten-year timeframe; however, since the project is going to be managed and protected in perpetuity, we know that the value for large trees is underestimated by assuming that there will not be an increase in their cover. This causes reduced predicted functional scores for MB and CMH.

Intermittent Side-Channel (Straight Channel)

SFAM assessments were completed for the Straight Channel, an intermittent side-channel to the Creek. The Straight Channel will have improvements to its left bank including re-contouring the severely eroded bank, placement of wood, and planting of native species, as well as the creation of some semi-aquatic habitat in the form of a low-elevation riparian “bench”.

For the Straight Channel assessments, the SFAM Project Area (PA) was defined as the entire length of the Straight Channel, approximately 700 feet (measured with the SFAM Map Viewer). For the purposes of these assessments, the Straight Channel, a side-channel to the Creek was considered the “main channel” because side-channels are not evaluated in SFAM thoroughly. The Proximal Assessment Area (PAA) was 50 feet wide, extending from the top-of-bank on both sides of the Straight Channel. The Extended Assessment Area (EAA) extended five “bank full widths” upstream and downstream of the PA, which was equivalent to 150 feet upstream and downstream of the PA. The EAA was entirely within the Perennial W. Fork Dairy Creek. In order to only evaluate the functional improvements made to the Straight Channel, data from the EAA transects within the perennial Creek were not changed between the baseline and predicted assessments (even though improvements will be made to the perennial Creek).

Please refer to Table 11, which displays the baseline scores of the Straight Channel.

Table 11: Baseline SFAM Straight Channel

Project Area Name:	Dairy Creek Mitigation Bank- Straight Channel		
Investigator Name:	Moiel, Harburg		
Date of Field Assessment:	3/18/2021		
Latitude (decimal degrees):	45.6206	Longitude (decimal degrees):	-123.1213

SPECIFIC FUNCTIONS	Function Score	Function Rating	Value Score	Value Rating
Surface Water Storage (SWS)	5.39	Moderate	6.33	Moderate
Sub/Surface Water Transfer (SST)	4.77	Moderate	0.00	Lower
Flow Variation (FV)	5.58	Moderate	6.67	Moderate

Sediment Continuity (SC)	3.28	Moderate	8.08	Higher
Sediment Mobility (SM)	3.44	Moderate	5.00	Moderate
Maintain Biodiversity (MB)	3.80	Moderate	6.63	Moderate
Create and Maintain Habitat (CMH)	3.79	Moderate	8.03	Higher
Sustain Trophic Structure (STS)	4.89	Moderate	5.48	Moderate
Nutrient Cycling (NC)	5.30	Moderate	6.76	Moderate
Chemical Regulation (CR)	5.27	Moderate	2.76	Lower
Thermal Regulation (TR)	5.44	Moderate	3.07	Moderate

GROUPED FUNCTIONS	**REPRESENTATIVE FUNCTION**	**Function Group Rating**	**Value Group Rating**
Hydrologic Function (SWS, SST, FV)	Flow Variation (FV)	Moderate	Moderate
Geomorphic Function (SC, SM)	Sediment Continuity (SC)	Moderate	Higher
Biologic Function (MB, CMH, STS)	Sustain Trophic Structure (STS)	Moderate	Moderate
Water Quality Function (NC, CR, TR)	Thermal Regulation (TR)	Moderate	Moderate

The Straight Channel baseline functional scores are all “Moderate”, with 12 of 12 functions rated as “Moderate”. Value scores were primarily “Moderate” with “Higher” ratings for Sediment Continuity, and Create and Maintain Habitat.

The predicted SFAM was completed by adjusting certain variables on the PAA and EAA Field Forms. On the PAA Field form, the Natural Cover (F1) was adjusted to account for a shaded plant community in the future; the Riparian Cover (F5) was adjusted to the maximum distance of 330 feet on the left bank; the percent Exclusion (F7) from the floodplain was adjusted from >40-80% on the baseline to >20-40% predicted; adjusted left transect data to display low invasive cover, native woody cover, and large tree cover; and removed armoring and erosion on left bank. On the EAA Field form, the amount of Wood (F14) was doubled; constraints to lateral migration removed (due to berm removal); side-channel length increased to maximum allowed (entire length of EAA) due to the creation of additional intermittent side-channel habitat (note that the side-channel creation will approximately 3,000 feet of new channel, so the 900 feet maximum is less than actual); and the wetted width increased in transects due to re-contouring slope and aquatic bench. The Substrate Embeddedness (F16) and Thalweg Depth (F17) were not adjusted because no work will be done in the Straight Channel bottom.

The Incision values are misleading for the baseline assessment because there were near-to-vertical streambanks with artificial earthen berms built above the top-of-bank with no identifiable difference between the bankfull height and lowest floodplain height, causing the incision scores to be a 1.0; meaning that it is not incised and is well connected to the floodplain. The post-construction conditions will include re-contoured streambanks with 3:1 and 5:1 slopes which will lessen the actual baseline incision and provide a much improved connection to the floodplain. The baseline top-of-bank was artificially bermed (2 to 3 feet higher) to the approximate 2-Year flood elevation and the removal of these berms will reconnect the Straight Channel to the floodplain for annual events.

Please refer to Table 12, which summarizes the post-construction predicted SFAM scores for the Straight Channel.

Table 12: Predicted SFAM Straight Channel

Project Area Name:	Dairy Creek Mitigation Bank- Straight Channel Predicted		
Investigator Name:	Moiel, Harburg		
Date of Field Assessment:	NA		
Latitude (decimal degrees):	45.6206	Longitude (decimal degrees):	-123.1213

SPECIFIC FUNCTIONS	Function Score	Function Rating	Value Score	Value Rating
Surface Water Storage (SWS)	7.52	Higher	6.33	Moderate
Sub/Surface Water Transfer (SST)	8.76	Higher	0.00	Lower
Flow Variation (FV)	5.07	Moderate	6.67	Moderate
Sediment Continuity (SC)	7.17	Higher	8.08	Higher
Sediment Mobility (SM)	5.06	Moderate	5.00	Moderate
Maintain Biodiversity (MB)	7.19	Higher	6.63	Moderate
Create and Maintain Habitat (CMH)	6.48	Moderate	8.03	Higher
Sustain Trophic Structure (STS)	8.52	Higher	5.48	Moderate
Nutrient Cycling (NC)	8.31	Higher	6.76	Moderate
Chemical Regulation (CR)	8.76	Higher	2.76	Lower
Thermal Regulation (TR)	6.55	Moderate	3.07	Moderate

GROUPED FUNCTIONS	REPRESENTATIVE FUNCTION	Function Group Rating	Value Group Rating
Hydrologic Function (SWS, SST, FV)	Sub/Surface Water Transfer (SST)	Higher	Lower
Geomorphic Function (SC, SM)	Sediment Continuity (SC)	Higher	Higher
Biologic Function (MB, CMH, STS)	Sustain Trophic Structure (STS)	Higher	Moderate
Water Quality Function (NC, CR, TR)	Nutrient Cycling (NC)	Higher	Moderate

Based on a comparison of the baseline and predicted SFAM scores for the intermittent Straight Channel, there should be a substantial increase in functionality of the Straight Channel if the project is implemented. The baseline SFAM grouped functions were "Moderate" for all categories but were predicted to all increased to "Higher" if the project is implemented. Additionally, the following specific functions increased from "Moderate" for the baseline to "Higher" post-construction: Surface Water Storage (SWS), Sub/Surface Water Transfer (SWS), Sediment Continuity (SC), Maintain Biodiversity (MB), Sustain Trophic Structure (STS), Nutrient Cycling (NC), and Chemical Regulation (CR).

Note that the values for "large tree" on the PAA field forms were the same for the baseline and predicted assessments because there will not be an increase in large trees in a ten-year timeframe; however, since the project is going to be managed and protected in perpetuity, we know that the value for large trees is underestimated by assuming that there will not be an increase in their cover. This causes reduced predicted functional scores for MB and CMH.

4.9 SITE CONSTRAINTS

The city of Banks has two small easements that were established in 1968 for sewer pipes that are 10 feet wide and enter the DCMB Phase 1 project area (Figure 1); the management responsibility of these easements was transferred to Clean Water Services within the last decade. These easements are described as to not effect farming activities with a maximum sewer pipe size of 10-inch diameter installed below “plow depth”. The easements do specify that access will be needed for the 10-foot-wide areas if pipe repairs are necessary. The easements also state that the easement holder will pay for any damages which may arise to the property, premises, or rights of the landowner through the use of the easement (Exhibit B, Easement 5783). Green Banks LLC has been in discussion with CWS and the city of Banks regarding vacating the northern easement that extends into Dairy Creek. CWS and the city of Banks have agreed to vacate a large portion of the northern easement which crosses the stream mitigation area. Please see the memo from CWS which is included in Exhibit B.

The CWS stormwater easements which enter the DCMB intercept stormwater runoff from NW Main Street in the city of Banks. These easements are permitted through Oregon DEQ under a watershed-based NPDES waste discharge permit. This permit includes terms, conditions, and requirements applicable to the CWS districts Municipal Separate Storm Sewer System (MS4), file number 108014; EPA reference number ORS108014. Clean Water Services (previously known as the Unified Sewerage Agency of Washington County) applied for its first MS4 permit in 1993 and has a mature MS4 program that has been in place for more than 25 years. The Stormwater Management Plan (SWMP) was developed through a comprehensive process involving multiple stakeholders and technical experts. This group identified local stormwater quality problems, identified 130 candidate BMPs to address the problems, evaluated and screened the BMPs, and selected a final set of 40 BMPs for inclusion into the SWMP (CWS MS4 Permit 2020). The BMPs related to municipal operations include pollution prevention, illicit discharge detection and elimination, and education and outreach. Pollution prevention includes minimizing the discharge of pollutants from streets through street sweeping (12 times per year), fall leaf collection, deicing management, catch basin cleaning (1 time per year), water quality manhole cleaning (2 times per year), line cleaning and inspection, and herbicide and fertilizer pollutant reduction. Street sweeping public curbed streets occurs 12 times per year, and the sweepers that are used “effectively remove fine sediment (regenerative air sweepers or equivalent water quality sweepers)” (CWS MS4 Permit 2020).

The MS4 permit also states that CWS will conduct programmatic monitoring to evaluate whether program elements are being implemented as set forth in the SWMP, and environmental monitoring. CWS conducts stormwater, instream, biological, physical, and pesticide monitoring to address monitoring objectives defined in the permit. Monitoring locations may change as a result of adaptive management. Monitoring of stormwater outfalls such as the ones which enter the DCMB are done qualitatively (visual observation), not through water quality sampling; water quality sampling is completed on streams and water quality facilities.

CWS has stated that they will install two water quality manholes on NW Main Street to intercept stormwater prior to the outfalls in the DCMB within the next couple of years. The CWS MS4 permit BMPs, monitoring, and installation of water quality manholes for outfall pretreatment will ensure that any surface water entering the DCMB will have a low likelihood of containing pollutants of concern. Additionally, the surface water entering the DCMB from these easements is considered an artificial source and therefore was not considered a source of hydrology for the mitigation wetlands. The quantity of surface water entering the DCMB from these easements is not sufficient for the development of wetlands as they have been in place for roughly 50 years and the project area is primarily upland. The easement outfall locations are also adjacent to wetland areas (Wetlands A and B) which are not receiving any mitigation credit.

The intermittent stream design was also somewhat constrained from flowing southwesterly through the Phase 2 area due to degraded agricultural ditch systems that exist south of the project area below Highway 6, which we determined were not a preferred route for aquatic species for annual flood events. The 2-Year flood event on the W. Fork Dairy Creek currently causes overbank flow of surface water across the Bank site and into two culverts under Highway 6. Fish and other aquatic species move through those culverts and into a ditch system that eventually re-connects with the W. Fork Dairy Creek. Our intermittent stream design will have flows annually, and 2-Year events will spill out of the proposed channels and into the two culverts under Highway 6 as they currently do. The proposed intermittent channels will have annual flows with surface water approximately 3 feet deep which will attract fish and other aquatic species and in order to ensure they can safely re-enter W. Fork Dairy Creek, we have routed those channels to outfall into the perennial Creek rather than through the culverts and agricultural ditches to the south.

5.0 MITIGATION WORK PLAN

The DCMB project will be constructed in two phases, Phase 1 is proposed for the summer of 2022. Phase 2 earthwork will be completed approximately three years later; Phase 2 may need an amendment to the MBI if constructed more than three years after Phase 1. We do not anticipate a need to delay the construction of Phase 2 and plan to implement the Phase while there are credits available from the Phase 1 area. The project has been split into Phases because it is a large area and phasing the implementation will improve the likelihood of success with respect to achieving project goals. Some potential causes for delay of the Phase 2 implementation include: economic slowdown and resulting decreased credit need, deficiencies within the Phase 1 area which may affect the Phase 2 area, and delays related to agency permits or approvals. The Phase 2 area is within the floodplain and currently in agriculture; if any delays occur, the area will remain in agriculture as the land is not suitable for development.

Phase 1 is 97.5 acres, and includes the stream mitigation component and a majority of the earthwork. Phase 2 is 34.5 acres and includes connecting additional acreage to the floodplain and removing ditching and tiling. The project can be phased with regard to hydrologic improvements because the drainage features can be de-activated in Phase 1, while leaving ditches and tiling in Phase 2 intact (active), without much degradation to the Phase 1 wetlands. However, it is anticipated that the implementation of Phase 1 will increase the hydrology in Phase 2 by reconnecting the W. Fork Dairy Creek to the floodplain and decreasing the rate of surface and ground water removal.

Please note that Section 5 describes the wetland and waters mitigation concepts for the entire DCMB project (Phase 1 and 2) and then breaks down mitigation actions by Phase in Sections 5.1.1 and 5.2.4.

5.1 WETLAND RESTORATION, CREATION, ENHANCEMENT, AND BUFFERS

The DCMB project will include the restoration (rehabilitation) of wetlands in areas of drained hydric soils; creation (establishment) of wetlands in areas that historically had hydric soils and meet the Wapato soil series description; and enhancement of baseline wetlands through the removal of artificial drainage features. In general, all wetland areas will have hydrology restored by de-activating agricultural tiling and ditches, and by re-connecting the W. Fork Dairy Creek to the floodplain. Please refer to the Grading Plan Map (Figure 11), Hydrologic Degradation Map (Figure 7), and Determination of Credits Map (Figure 13).

The primary hydrology sources for the wetlands include a high groundwater table associated with the W. Fork Dairy Creek, surface water runoff into the floodplain from the Creek, groundwater seeps along the eastern perimeter of the project area and floodplain, and precipitation.

Wetland restoration, creation and enhancement will be completed by locating drain-tiling, removing the drain pipe, and filling tiling locations with native soils. The locations of known and assumed drain tiling are displayed on Figure 7; “known” drain-tiles were identified by locating tile outfall pipes and observing active water flow. Known drain-tiles are shown on Figure 7 with ground level-photographs in Appendix B. The locations of the some of the “known” tiles are also displayed on a 2006 tiling map and supported by 2020 drone photos (Appendices E and F). “Assumed” tiling locations were estimated from historic aerial photos. Drain tile will be located by excavating narrow trenches perpendicular to the approximate locations of identified tiling (known and assumed). Based on communication with the contractor that installed tiling in 2006, most of the recent tiling was installed between 3 to 5 feet below ground surface. Once tiling lines are located, they will be dug up and removed; or crushed if already damaged or broken. Native soils will be re-laid in areas where soil disturbance occurs from tile removal activities. All located drain tile lines will also be documented and photographed during construction; this information will be provided in the Year 1 Monitoring Report for each Phase.

There are two ditch systems within the DCMB. The North-South ditch runs from north to south along the western project area boundary in the Phase 1 and Phase 2 areas. This ditch is approximately 3 to 5 feet deep, 5 to 10 feet wide, and 2,000 feet in length. Water from the North-South ditch flows to the south and leaves the DCMB near the southwest project area boundary and into a culvert under Highway 6. Water has been observed in portions of the ditch year-round; in September of 2020, water was observed to be as deep as two feet deep near the middle to south end of the ditch, within the Phase 2 area, this may have been in part due to beaver activity offsite to the south near the highway culvert. This ditch is the primary drain for the low elevation riverine wetlands and wetlands upslope.

The East-West ditch is located in the Phase 2 project area and runs from east to west, outfalling into the North-South ditch near the western project area boundary. The East-West ditch is approximately 2 to 4 feet deep, 5 to 7 feet wide, and 1,000 feet in length. At least three active tile lines flow into the East-West ditch near the eastern end as shown in Appendix F and Figure 7.

Wetland enhancement is proposed for wetlands D, E, G, H, I. Please see the “zone of influence” of ditching and tiling systems displayed on Figure 7. Based on the Darcy’s Law Equation (Darcy

1856), which is described in further detail in Section 5.2.2, predicts a de-watering effect of approximately 50 horizontal feet from the active ditches (due to them being 5 feet deep) and 40 horizontal feet from active tile lines (due to them being 3 to 5 feet below surface). The "zone of influence" for wetland D exceed the wetland boundaries, implying that it is significantly drained. Wetlands E, G, H, and I are all within the "zone of influence" of the drainage systems, however, not completely affected. These wetlands are riverine wetlands that area also affected by the artificial berm on the W. Fork Dairy Creek which is reducing the frequency and duration of flooding into the wetlands.

Wetland creation is proposed adjacent to restoration and enhancement wetlands, in areas with similar landscape position and soil types (Wapato series). Shallow excavation (4 to 6 inches) and grading will occur within some of the creation areas (10.3 acres). The depth of excavation required for some creation areas was based on the results of the 2019 and 2020 wetland hydrology study, and depth to redoximorphic features observed in soil data plots. Many of the soils plots within the creation area had strong redoximorphic features such as iron mottling and depleted matrix which occurred between 9 to 16 inches below ground surface. In areas where soils displayed strong redox at 16 inches below ground surface for example, we are proposing to remove approximately 4 inches of soil with the assumption that this will bring the seasonal saturation level to 10 to 12 inches below ground surface, creating wetland. It is also assumed that throughout the time the land has been in agricultural production that leveling of site topography has occurred; it is likely that much of the creation area was historically wetland that has been gradually filled and de-watered as a result of farming activities. The wetland creation areas are not just relying on shallow excavation to create wetlands, but also on the restoration of hydrology sources described previously. Please note that the primary drain tile-line that runs between Wetland A and B in Phase 1, and into the East-West ditch in Phase 2, is located upslope of the proposed creation wetlands; it is assumed that removal of this drainage feature will cause wetting downslope into the creation areas. Additionally, the historic wetland swale which runs along the eastern portion of the project area that will be reconnected to the W. Fork Dairy Creek, will provide additional hydrology to the wetland creation areas.

The wetland creation areas have been separated into two categories: wetland creation (1:1) in historically hydric soils (Wapato series) that will not be disturbed, and wetland creation (1.5:1) in historically hydric soils that will be disturbed.

5.1.1 Restoration of Historic Wetland Swale

A historic wetland swale begins near the northeast corner of the DCMB, in close proximity to the location of the inlet for the proposed intermittent Channel 1. This feature has been viewed on drone photographs and aerial photography. Hydrology to the historic wetland swale system will be restored by creating a gentle swale, or spill point, off of intermittent Channel 1 that will supply surface water to the swale when water elevations in the W. Fork Dairy Creek exceed 194 feet. As mentioned in the previous section, this will occur at a frequency of approximately once in every two years or less. The de-activation of drain tile-lines surrounding Wetlands A and B and the primary tile-line 1 (PR1) will also restore hydrology to the historic wetland swale. The footprint will not be deepened; alternatively, the wetland swale will be gently graded (less than 6 inches in some areas) to ensure that it flows downslope and allowed to re-develop naturally. Please note that this historic feature will be considered a wetland swale for mitigation crediting purposes.

The ecological goals of improving the historic wetland swale include providing additional aquatic and semi-aquatic habitat for wildlife such as amphibians, birds, plants and insects. Restoring the hydrology will convert it from its current condition, upland, to a wetland swale. This will have many ecological benefits such as a large increase in ORWAP predicted scores from zero (upland) to moderate to highly functioning wetland; the wetland swale meanders through Slope and Riverine wetlands but has a primary hydrology source of overbank flooding which indicates that it is a riverine feature.

5.1.2 Wetland Mitigation Buffers

"A buffer is an upland or wetland area immediately adjacent to or surrounding a wetland or other water that is set aside to protect against conflicting adjacent land use and to support ecological functions" (Removal-Fill Guide). The objectives of the buffers include: reducing runoff of sediment, nutrients and other pollutants; controlling noise levels; and enhancing terrestrial and aquatic habitat.

The eastern edge of the project area (Phase 1 and 2) is in close proximity to residential and commercial development. Currently, there is agricultural land directly adjacent to the eastern project area boundary but the area will likely be converted to residential use in the next decade or so. The southern project area boundary, within Phase 2, is adjacent to Highway 6. Due to the potential for reduced function on the eastern and southern project area boundaries we are proposing buffers in those areas. The northern and western project area boundaries are adjacent to natural forest and agriculture which have less potential for reduced function due to adjacent land use. The W. Fork Dairy Creek, Straight Channel, and proposed intermittent channels have smaller width buffers (Riparian Upland) proposed because they are not as necessary to protect from adjacent land uses, however, they are within the width of the waters boundaries to be evaluated in future SFAM assessments; therefore, the Riparian Upland is necessary to improve and maintain the functionality of the waters resource.

We referred to *Conservation Buffers: Design Guidelines for Buffers, Corridors, and Greenways* (Bentrup, G. 2008) to inform the DCMB buffer design. Variable width buffers are commonly specified for projects surrounded by varied land uses, slopes, and other factors. Due to the fact that the eastern and southern project area boundaries are adjacent to residential, commercial, and highway, all of which have similar buffer objectives, we are proposing 100-foot buffers along those areas. The 100-foot width is based on several factors including water quality, and aquatic and terrestrial habitat width recommendations. The recommended width for water filtration of surface runoff ranges from 15-feet to 200-feet with most of the trapping efficiency within the first 100-feet depending on factors such as soil type, slope, pollutant type. Based on the soil types within the DCMB buffer areas (primarily silty clay loam texture), slope, and current and potential pollutant types, the recommended buffer width for high trapping efficiency would be 100-feet or less. When evaluating buffer wide to enhance aquatic and terrestrial habitat the minimum buffer width recommended for all organisms is 100-feet; including plants, invertebrates, aquatic species, reptiles and amphibians, birds, and mammals. Due to the minimum buffer width recommendation for these organisms, we are proposing 100-foot buffers along the eastern edge of the Phase 1 project area, and the eastern and southern edges of the Phase 2 project area.

The wetland and upland buffer areas along the eastern and southern perimeters will be planted densely with native tree, shrub and herbaceous species to ensure establishment of highly functioning buffer which will reduce the impacts of noise, visual disturbance, pollutant and invasive species influx to the mitigation wetlands. It will also buffer the project area from domesticated animals and humans through the planting of dense shrub areas which will reduce potential traffic.

The W. Fork Dairy Creek, Straight Channel, and proposed intermittent channels have 50-foot Riparian Upland buffers proposed. These Riparian Upland buffers are in close proximity to existing and predicted waters boundaries and will be included in future SFAM assessments; SFAM evaluates 2x the width of the channel width which would be approximately 80-feet, however we are proposing 50-foot wide Riparian Upland buffers because the areas beyond the first 50-feet will be planted in other types of native habitat (forested wetlands, Clean Water Services' buffer). The first 50-feet from the waters' boundaries are also areas which will have frequent flooding and potential for erosion or channel movement; therefore, we propose that they be classified as Riparian Upland.

5.1.3 Clean Water Services' Offsite Vegetated Corridor

Clean Water Services (CWS), a local water and sewer provider in Washington County, requires upland riparian buffers called "Vegetated Corridors" be enhanced surrounding wetland and waters resources. CWS requires evaluation and potential enhancement of Vegetated Corridors on tax lots where development applications are submitted. Vegetated Corridor areas are required to have a deeded easement with CWS and a financial performance bond in place until they have been deemed successful and maintained for 2 years, upon which time will be released from maintenance obligations by CWS.

The DCMB is proposing to enhance 11.99 acres of CWS' offsite Vegetated Corridor for a single user. We are not proposing to create CWS "credits", rather we are providing the offsite Vegetated Corridor for a local development project. The 11.99-acre area will be planted and seeded similarly to the mitigation buffers, primarily in mixed upland forest habitat type. This area is not proposed for mitigation credit; therefore, there will be no potential for "double-dipping" or added accounting complexity.

5.1.4 Phasing of Wetland Restoration, Creation, and Enhancement

<u>Phase 1 implementation</u> will include the removal of agricultural tiling surrounding and between Wetlands A and B, and throughout the Phase 1 project area, and partial filling of the North-South ditch to the Phase 2 boundary. Shallow excavation and grading will occur in some of the wetland creation areas as shown on Figure 11.

<u>Phase 2 implementation</u> will include removal of agricultural tiling, the filling of the East-West ditch, and the partial filling of the North-South ditch. The N-S ditch will be partially filled to allow surface water to flow into the historic natural swale at the Killin Wetlands Nature Park property to the west. Surface water currently flows into this natural swale during 2-Year events and larger, and any change due to project construction will be minimal. The southern end of N-S ditch will only be partially filled to retain the connection with the Highway 6 culvert.

5.2 STREAM ENHANCEMENT AND CREATION

The stream mitigation concept has a several components including: the enhancement of the perennial W. Fork Dairy Creek, the enhancement of an intermittent side-channel to the W. Fork Dairy Creek (Straight Channel), and creation of the intermittent side-channels.

Several stream reference site locations were identified on the W. Fork Dairy Creek to inform the stream design (Figure 1). The project site is located in the middle of the watershed, therefore we targeted reference locations in the same vicinity and stream reach. In an attempt to locate a least altered reference, we observed multiple locations but noted that the Creek had similar forms of degradation as observed within the project area; no high functioning reference site was found. Forms of degradation such as eroding stream banks, minimal width or non-existent forested buffers, channel straightening, high cover by invasive species (primarily reed canarygrass), and altered floodplain connections, were observed.

Two reference locations were observed upstream of the project area in proximity to Highway 26. These locations had steep stream banks with narrow forested buffers and unforested areas dominated by reed canarygrass. There were some areas with low elevation wetlands below OHWM and a medium to high frequency of medium to large woody debris. It is assumed that these reference site locations provide low to medium functions for hydrologic, geomorphic, biological, and water quality grouped functions.

Three locations within Killin Wetlands Nature Park were evaluated as reference sites, two of which were located on the perennial channel and one was on an intermittent channel. The most northern perennial reference location was just downstream of the project area and within the perennial channel SFAM Extended Assessment Area. This location had steep banks with a high level of erosion, a moderate amount of large wood, and a narrow-forested buffer dominated primarily by native species, and several low elevation aquatic “benches”. The deeply incised channel likely disconnects the stream from its floodplain for annual flow events similarly to the stream reach within the DCMB project area.

The highest functioning perennial reference reach was located within the Killin Wetlands Nature Park just north of Highway 6. This location had moderately steep banks with less erosion than other reference locations, forested buffers, a braided stream channel with low elevation wetlands, and a high frequency of large wood. This reach also appeared to be more connected with its floodplain with no evidence of berming or armoring, except for being confined by the highway to the south.

An intermittent stream reference site was identified within the Killin Wetlands Nature Park, in an area of mature Oregon ash forest. This reference site had a gently sloped, sinuous, intermittent channel that had surface water for an approximate four-month period from December through March in 2020-2021.The intermittent channel bed was approximately 10 feet wide and 2 to 3 feet lower than the surrounding upland. A low to moderate amount of large wood was noted within this reference. There was very little evidence of erosion, or bare ground within the channel or banks; most of the channel was vegetated with emergent vegetation, with native shrubs established on the stream banks. This intermittent channel was well connected with the floodplain as a result of its shallow depth and unaltered bed and banks.

During the stream reference site evaluations, we also documented native plant species observed within the stream channels and stream banks, and in the adjacent uplands above top-of-bank; these observed species were included in the planting plans for the stream mitigation areas. Many of the stream reference sites had degraded plant communities, and areas of bare ground as a result of erosion, making it difficult to identify high quality reference areas for vegetation.

5.2.1 Enhancement of the Perennial West Fork Dairy Creek

The enhancement of the perennial W. Fork Dairy Creek will include the removal of artificial armoring and/or berming of the southern bank (left) of the Creek, re-contouring of the nearly vertical streambanks, placement of large wood, installation of native plants, and enhancement of the Straight Channel. Even though the Straight Channel is an intermittent side-channel, improvements to the Straight Channel will improve the functionality of the perennial Creek. In areas where streambank armoring/berming is found, the artificial materials (or fill dirt) will be removed and the streambanks will be re-contoured to gentle 5:1 slopes; the locations of known streambank armoring/berming are shown on Figure 7. Most of the streambanks along the W. Fork Dairy Creek have near-to-vertical slopes and the re-contouring of some of the streambanks within the project area and removal of berms, will not only stabilize the banks but allow for a better connection to the floodplain.

5.2.2 Enhancement of the Intermittent Straight Channel

The intermittent Straight Channel will be enhanced by removing armoring/berming along the left top-of-bank, recontouring the near-to-vertical left bank of the channel, placement of large wood, installation of native plants, and creation of an aquatic "bench" at similar elevations to aquatic wetland areas observed on the perennial Creek.

An aquatic "bench", or near to flat area of topography, will be created approximately 20-feet wide and slightly higher than the thalweg of the Straight Channel. During our SFAM assessment of the W. Fork Dairy Creek we identified areas of flat topography, or wetland "benches" of approximately five to twenty feet wide, that provide aquatic habitat diversity and complexity. These natural "bench" areas exist slightly higher in elevation than the summertime wetted-width, and are only exposed (not inundated), during times of low flow. This type of habitat is valuable for aquatic species such as fish, lamprey, amphibians, insects, and other wildlife. The aquatic "bench" is proposed to be created along the Straight Channel as a means of improving the aquatic habitat along the channel, since filling or removing the channel is not a viable option due to the potential flood risks on neighboring properties.

The reduction of the south streambank slope and creation of a floodplain bench on the Straight Channel will increase the channel cross sectional area. The flow velocity for the 100-Year event through this section of the existing channel has been modeled to be 2.71 feet per second. The proposed channel modifications are expected to reduce flow velocities across the section thereby slightly reducing the potential for flood damage to adjacent properties.

5.2.3 Creation of Intermittent Side Channels to the W. Fork Dairy Creek

The creation of intermittent side channels are proposed in areas where we have evidence of historic surface water flows and suitable topography. The intermittent channel design is somewhat constrained because historic flows into the project area have been drastically altered by the berming of the top-of-bank of the Creek; therefore, we are proposing to <u>partially</u>

reconnect the intermittent side channel and floodplain swale system to avoid the potential for notable changes to the flood regime. Through the removal of berms, the proposed design will increase the frequency of flooding into the floodplain and within the proposed channels for small flood events (ie annual, semi-annual). This surface water will be captured within the proposed intermittent channels and outfall back into W. Fork Dairy Creek, rather than flow southerly through the project area. Constraints to the design are also described in Section 4.9.

The intermittent channel design provides a means to greatly improve the aquatic habitat of the Straight Channel and functions of the W. Fork Dairy Creek. We are not proposing to fill the Straight Channel; alternatively, we are proposing to utilize it as a connection point(s) for an intermittent channel system. The Straight Channel currently has intermittent flows because the thalweg of the channel is approximately 8 feet higher in elevation than the thalweg of the perennial channel. Therefore, frequency of flow in the Straight Channel will be lower than in the perennial channel. The intermittent side channels will have channel bottom elevations that are higher than the thalweg of the Straight Channel, resulting in lower flow frequencies than both the Straight Channel and the perennial channel.

Please refer to Figures 11a-d, which display the intermittent channel system. The Primary Channel, Channel 1, enters the DCMB near the northeast corner of the property and flows to the southwest, outfalling near the northwest corner of the property. It is approximately 2,250 feet in length with a slope of 0.1%. Channel 2 and Channel 3 inlets are located in the Straight Channel, flowing to the south until they connect with the Primary Channel. Channel 2 is 869 feet in length, and Channel 3 is 483 feet. The invert elevation of the Primary Channel at its downstream confluence with Dairy Creek is 185.79 feet NAVD88. Water surface elevations in Dairy Creek at this confluence for the design flow of 315 cfs and the 2-Year event flow of 1171 cfs have been calculated to be 188.78 feet NAVD88 and 191.02 feet NAVD88, respectively. For the case of the design flow, the water surface elevation in Dairy Creek will be 3 feet above the invert elevation of the Primary Channel. The flow depth in the Primary Channel is expected to be less than 3 feet deep, indicating that a backwater condition will be present with flow velocities that will be less than the average flow velocities in the Primary Channel. It is expected that erosive forces on the Primary Channel will be lower at its downstream confluence with Dairy Creek than at other locations along the channel length.

The proposed Channels 1, 2, and 3, will have channel bottoms approximately 10 feet wide with channel banks sloped at a 5:1 ratio; the southern bank of the Primary Channel will have a 3:1 slope to reduce its footprint. The intermittent side channels will have a dewatering effect similar to a ditch system which was considered when developing the design. Darcy's Law Equation (Darcy 1856) can be used to estimate the effect of soil dewatering as a result of soil removal and groundwater flows. Based on the soil types within the project area and groundwater slope, it was estimated that the excavation of a 5-foot-deep channel with a 10-foot bottom width would have a de-watering effect approximately 50 horizonal feet from each side of the channel bottom. The channel slopes are proposed to be 5:1 and 3:1 which would create a total channel footprint of approximately 50 feet. The de-watering effect on the project site resulting from the channels should be minimal. Please refer to Appendix D for information on use of Darcy's Law Equation to calculate the potential de-watering effect of the intermittent channels.

A US Army Corps of Engineers (Corps) HEC-RAS hydraulic model was used to inform the design of the intermittent channels so that annual flow events would result in surface water approximately 2 feet deep within the channels. The Federal Emergency Management Agency (FEMA) was contacted to obtain a copy of the most current HEC-RAS model for Dairy Creek. FEMA indicated that no existing HEC-RAS model for the W. Fork Dairy Creek existed, but the Corps had prepared a HEC-2 hydraulic analysis for the Flood Insurance Rate Study (FIS) completed in November of 1980. HEC-2 was the hydraulic model precursor to HEC-RAS. FEMA was able to provide a PDF format copy of the HEC-2 model input prepared by the Corps. The cross-sectional data, section location, channel roughness values, and other input data was deciphered from the PDF and used to convert the HEC-2 into a HEC-RAS model. The assembled HEC-RAS model was run and calibrated to replicate the model output presented in the FIS.

There is no working stream gauge data on the W. Fork Diary Creek to provide flow data input to the hydraulic model. There is a working gauge on the East Fork Dairy Creek and an approximate conversion for the flows from the East Fork to the West Fork was calculated. However, it was felt that the results were not accurate and reliable for design purposes. To provide more reasonable and reliable peak flow values for use in the hydraulic model a Hydro-Cad hydrologic model was prepared for the W. Fork Diary Creek to obtain peak flow values for a range of return interval storms from the annual event through the 500-year event. The hydrologic model produced the peak flow values presented below that were then used in the hydraulic model to estimate water surface elevations under various flow scenarios.

Return Interval Storm Event	**Peak Flow (cfs)**
Annual Event	315
2-Year Event	1171
5-Year Event	2253
10-Year Event	4890
50-Year Event	7190
100-Year Event	8240
500-Year Event	11410

The hydraulic model was run to estimate water surface elevations at points of interest along the W. Fork Dairy Creek through the project reach. Points of interest were primarily the proposed locations of constructed channel inlets. Water surface elevations predicted by the model were used to establish the invert elevations of the constructed channels to have flow at the desired frequency.

The annual flow event is estimated to be approximately 315 cfs which would cause inundation to elevations of approximately 189.6-191.3 feet in elevation (NAVD88) within the channels. Annual flow events are predicted to occur between December and March. Please note that in most years, the annual flow event will occur multiple times and/or be followed by larger flow events.

Through the use of rain gage data from the Hillsboro Airport, the hydrology model, and the hydraulic model, the frequency that the channels will have flowing water in them has been estimated to be between 10 and 36 times per year. This was achieved by iteratively running the hydraulic model with lower and lower flow values until the model predicted minimal flow in the constructed channels. The hydrologic model was then run iteratively for different precipitation values until the resultant peak flow matched the minimal flow necessary to activate the constructed channels. Once the minimum precipitation necessary to activate the channels was known, it was compared to the daily precipitation records for the Hillsboro Airport for the last ten years to estimate the frequency of channel activation.

It is not practical to estimate the duration of water surface elevations and durations of overbank flows over an extended timeframe due to the lack of stream gage data for W. Fork Dairy Creek. However, a Dairy Creek overbank event that occurred on January 13, 2021 was associated with a 1.85-inch rainfall in the watershed. Based on this event and the daily precipitation records from the Hillsboro Airport for the last 10 years, it is estimated that overbank events can be expected to occur, on average, approximately 0.8 times per year.

The 2-Year flow event is estimated to be approximately 1,171 cfs, which would cause inundation to an elevation of approximately 194.95 feet adjacent to the Straight Channel; this would result in overbank flooding in nearly all areas of the Channels 1, 2, and 3 (due to top-of-bank elevations being lower than 194.95 feet). Figures 11b-d display the areas predicted to have overbank flooding (dashed line) within the proposed side-channels. The 2-Year flow event would cause minor surface water flow into the floodplain and also charge the hydrology of the historic wetland swale. The historic wetland swale will receive surface water when the water level in the W. Fork Dairy Creek exceeds 194 feet in elevation, which occurs more frequently than the 2-Year event.

The erosion potential of the channels was determined by comparing maximum flows predicted by the Hydraulic Model for various events, and the erosion coefficients of the soil types (Wapato silty-clay loam, McBee silt loam) within the construction footprint. It was determined that there is potential for erosion when surface water flows exceed 3.5 feet per second (Gorman 2020). The Hydraulic Model predicts flows between 1.9 and 3.2 feet per second for various flow events in the channels; these flow rates are less than 3.5 feet per second and therefore would not be a concern for erosion.

The design discharge of the proposed intermittent channels was determined as described in the following paragraph. Flow in the constructed channels will be diverted from the flow in the mainstem at the inlet for each of the constructed channels. The inlets have been designed to start diverting water from the Creek at mainstem flows that are less than the peak annual flow. The flow in the proposed constructed stream channels within the DCMB was estimated for the annual flow event and the 2-Year flow event in the mainstem W. Fork Dairy Creek. Flow estimates for the constructed channels are based on total mainstem flows, cross sectional flow areas of the mainstem channel and the constructed channels, and invert elevations of both the mainstem and the constructed channels. The potential flow estimate for each constructed channel is based on the fraction resulting from the division of the constructed channel flow area by the mainstem flow area for a given flow, which was then multiplied by the mainstem flow and a diversion factor. The diversion factor is an estimate of the fraction of the potential flow to the constructed channel to account for the momentum of mainstem flow and the associated hydraulic head loss at the entrance to the constructed channel. Results of the analysis are presented below.

Intermittent Channels Flow Estimates

Channel Designation	Channel Inlet River Mile	Annual Event Peak Flow (cfs)	2-Year Event Peak Flow (cfs)
Dairy Creek Mainstem	N/A	315.0	1171.0
Constructed Channel 1	17.65	26.5	105.0
Constructed Channel 2	17.31	15.5	70.0
Constructed Channel 3	17.25	13.0	65.5
Total Construct Channel Flow	N/A	55.0	240.5
Constructed Channel Flow As A Fraction of Dairy Creek Mainstem Flow		0.17	0.21

5.2.4 Phasing of Stream Enhancement and Creation

Construction activities related to stream enhancement and creation will only occur in the Phase 1 project area. The historic wetland swale runs through the Phase 2 project area but minimal grading is proposed for the historic swale footprint. Construction of Phase 1 will likely increase the groundwater and surface water hydrology within the Phase 2 area; however, the East-West Ditch and a portion of the North-South ditch will remain intact until Phase 2 is constructed which will keep the area artificially drained to some extent.

5.3 HABITAT ELEMENTS

Habitat elements that will be installed during construction will consist of the large and medium sized woody debris, snags, basking (surface-placed) logs, and micro-topography (roughness).

ODFW (MBI guidance letter, 2020) made the following recommendation regarding Large Woody Debris (LWD): "*In high quality habitat reference sites the number of key pieces of LWD (greater than 60cm and 10m in length) is three pieces per 100 meters, and just as important is volume of LWD at a size greater than* $30m^3/100m$". Based on this recommendation, the perennial stream enhancement (1,080 linear feet) would require 10 pieces of LWD, the intermittent Straight Channel (715 linear feet) 7 pieces of LWD, and the intermittent side-channels (3,602 linear feet) 33 pieces of LWD. The approximate placement of keyed wood is shown on Figure 11a, and exceeds the recommended number of LWD per ODFW guidance.

Please note that the definition of LWD from ODFW is different from the definition of large wood from SFAM; the monitoring plan and performance standard for large wood, includes the *counting of large wood using the methods described in SFAM. Any keyed, large wood described in this section would be counted during SFAM longitudinal surveys as well as other large wood that meets the SFAM definition (minimum diameter of 4 inches, and minimum length of 5 feet).*

Keyed wood is defined as LWD that is keyed into the ground approximately 1/3 to 2/3 of its length. The length of the portion of wood keyed subsurface will depend on the diameter of the log and location within the project area. Keying wood is a form of "soft engineering" which is commonly used to armor or protect areas from erosion. This sort of "soft engineering" can be considered as a means to confine a stream from movement which is something we are trying to avoid; we want our created side-channels to be dynamic and have opportunity for movement. Therefore, we have proposed keying wood only in areas where we are trying to maintain the designed channel footprint, anticipate a need to reduce erosion, or desire to add roughness to reduce surface water velocities.

The habitat element design also includes the unanchored placement of wood on the ground surface in areas within the floodplain, and within the created intermittent side-channels. Unanchored wood will vary in size from large to small wood. This wood is anticipated to move within the project area and will provide a supply of woody debris for animals such as beaver and amphibians, and improve habitat structure in the early years of the Bank.

Snags (8) are proposed in areas designated as PEM wetlands. Most of the project area is designed to be forested or shrub dominated, and in order to ensure that there are some snags within the PEM areas for species such as raptors, we are proposing to install snags in these areas. Snag installation will include the excavation and installation of a portion of the log subsurface; the depth installed below ground will vary based on the height and diameter of the snag. In general, snags will be a minimum of 30 feet tall (above ground) with approximately 10 feet installed below ground.

The removal of artificial debris along the W. Fork Dairy Creek and Straight Channel, and stream bank re-contouring will result in the removal of many of the existing trees within the construction footprint. A tree survey was conducted in these areas in September 2020 to determine the number, size (dbh and height), and species of trees that may be removed during construction. Please see the following Table 13 which summarizes these data. *Note that impacting large trees will be avoided as much as possible during construction.*

Table 13: Habitat Elements- Baseline Trees available for Large Wood

Species	Height	DBH			Total
	feet	3"-10"	10"-20"	>20"	
Acer Macrophyllum					
	20-40	6	4	1	11
	40-60	2	5	3	10
Fraxinus Latifolia					
	20-40	11	5		16
	40-60	9	17	6	32
	>60			2	2

Populus balsamifera					
	>60		1		1
Prunus species					
	0-20	23	1		24
	20-40	30	1	1	32
Pseudostuga menziesii					
	0-20		3		3
	>60			3	3
Quercus garryana					
	40-60	1		5	6
	>60			1	1
Total		81	37	16	134

All of the trees (greater than 6-inch dbh) which are removed as a result of construction will be re-used within the project area. Please refer to Figure 11, which displays the approximate number and locations of various habitat elements.

Some areas within the DCMB that have been leveled as the result of farming activities, or are within removal or fill areas, will be regraded with minor elevation fluctuations of a couple inches to add micro-topography. We anticipate that micro-topography will develop and/or increase naturally over time but improving the roughness early on in the project life will improve the functionality of the wetlands and waters at the time of project construction.

The incorporation of these habitat elements will meet the Bank objectives. These elements will be quantified through the As-Built report and the completion of post-construction ORWAP and SFAM analyses. Performance standards for large wood within the stream mitigation areas will be quantified by counting pieces of wood through SFAM longitudinal surveys. Placed wood and snags will be quantified through the post-construction ORWAP analysis. We do not propose specifying a no net loss of habitat features but a quantification of them through monitoring to determine if performance standards, and Bank goals and objectives are being met.

6.0 CONSTRUCTION DETAIL

The DCMB project will involve the removal of soils and artificial debris from waters (W. Fork Dairy Creek and Straight Channel), removal and movement of soils in uplands, and filling of ditches that are delineated as wetland. Much of the project area is within the FEMA 100-year floodplain and most of the removal and fill activities will occur within the floodplain; however, a minimum of 100 cubic yards of soil and artificial debris will be removed from the floodplain for each Phase to ensure a removal of volume within the within the FEMA 100-Year floodplain, a balanced cut/fill will be required by Washington County. Excess soil from removal activities will be spread in areas of upland buffer, used for access roads and to fill ditches. Artificial debris (i.e. concrete) will be disposed of offsite. Please refer to Figure 11 which displays areas of removal and fill, staging areas, construction access, and design cross-section locations. Please refer to the following Table 14 which summarizes the proposed removal and fill amounts.

Table 14: Construction Detail

	Removal Upland (cy)	Removal Waters (cy)	Removal Wetland (cy)	Fill Upland (cy) (access roads, etc)	Fill Waters (cy)	Fill Wetland (cy) (ditches)	Net (cy)
Phase 1	14,930	1,027	0	15,600	0	225	132
Phase 2	4,550	0	0	1,767	0	2,681	102
Total	19,480	1,027	0	17,367	0	2,906	234

Soils that are removed as a result of construction will be reused on-site. Topsoil, or approximately the top twelve inches of the soil profile, will be stockpiled and re-spread in areas where sub-soils are reused to ensure soil fertility for native planting. Much of the sub-soil that is excavated from uplands and waters will be used to create a roadbed for the perimeter access road.

Top soil will also be placed over the areas where deeper excavation occurs such as in the Phase 1 proposed intermittent channels and repaired stream banks along W. Fork Dairy Creek. Areas that are predicted to have surface water flow and potential concern for erosion will be secured using erosion fabric such as the channel bottoms of the proposed intermittent channels and aquatic bench on the Straight Channel.

6.1 CONSTRUCTION METHODS

The following section describes construction methods, timing and equipment. The construction of Phase 1 will occur approximately 3 years prior to Phase 2; however, the seasonal work plan described for construction will be the same for both phases.

6.1.1 Federal, State, and Local Permitting

Construction of the Bank will require Federal, State, and local permits. These permits will include a Joint Removal-Fill Permit (Corps/DSL), Clean Water Act- Section 404 Permit, NPDES 1200c Permit (DEQ), Land Use Change Application (Washington County), and Floodplain Alteration (Washington County).

6.1.2 Standard Local Operating Procedure Endangered Species (SLOPES)

The DCMB proposes to complete earthwork within and adjacent to the W. Fork Dairy Creek which has Endangered Species Act (ESA) listed Upper Willamette River Steelhead. The DCMB project components and construction plan have been developed to meet NMFS' SLOPES V (2013) guidance.

The programmatic guidance of SLOPES V addresses 10 categories of aquatic restoration activities; 4 of which are applicable to this project:

◦Large Wood Restoration (cat.3)
◦Off-Channel and Side-Channel Habitat Restoration (cat.4)
◦Set-Back Existing Berms Dikes and Levees (cat.6)
◦Streambank Restoration

The project will be constructed following the SLOPES V Project Design Criteria “General Construction Measures” for the “Types of Action” (Categories) listed above. The “General Construction Measures” are similar to best management practices (BMPs) which describe details such as erosion control, equipment use, staging areas, etc. These measures were used to guide the construction plan.

6.1.3 Construction Timing
Construction activities will take place during the summer months between July and September, when surface water and wetland hydrology are confined to the perennial W. Fork Dairy Creek. All of the earthwork within the top-of-bank of the W. Fork Dairy Creek will be achieved when surface water levels are low, allowing for work in dry conditions. Please note that all work below the top-of-bank will be higher in elevation than the surface water level; the top-of-bank is approximately 15-20 feet higher than the creek thalweg, and the proposed work would only occur at higher elevations on the streambank, which are dry in the summer. The ODFW’s *Oregon Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources* (ODFW 2008) for all Tualatin River tributaries is designated to be July 15th through September 30th; any work within the waters boundary of the W. Fork Dairy Creek will be accomplished during this period.

6.1.4 Construction Access and Unimproved Access Roads
Construction access locations are displayed on the Site Plan Map (Figure 11). For Phase 1 construction, the primary access point will be at the northeast project area boundary. For Phase 2 construction, the primary access point will be near the P1 southeastern project area boundary; near the northeastern edge of the Phase 2 area.

One unimproved (not paved) access road will be utilized during project construction as well as after construction for maintenance. The unimproved road currently partially exists along the northern project area boundary.

6.1.5 Construction Equipment, Vehicles and Power Tools
All equipment, vehicles and power tools used in construction (e.g. excavation, filling, recontouring) will be selected and used in a manner that reduces any adverse effects to the environment. This includes: sizing equipment such as excavators and loaders at the smallest size possible to complete the project without a substantial loss of efficiency; cleaning and decontaminating all equipment of non-native weeds, soils, and chemicals prior to entering the project area; using rubber-tired equipment when feasible; and replacing petroleum based hydraulic fluids with biodegradable products when doing work within 150 feet of a wetland or waters boundary.

6.1.6 Staging, Storage, and Stockpile Areas
Construction staging, including equipment maintenance and fueling, will be done in upland areas; a minimum of 150 feet from any wetland or waters’ resource boundary. Natural materials

such as large wood (trees) that are removed as a result of construction activities that will be used for restoration will be stored in these areas. Artificial materials such as concrete that will be removed from the creek will also be stockpiled in these areas until construction is complete and they are removed from the floodplain. The staging, storage, and stockpile areas will be removed and re-graded after construction is complete and re-vegetated according to the Planting Plan (Section 7).

6.1.7 Erosion Control
Erosion control methods will generally follow approved methods described by Oregon DEQ as required for NPDES 1200c permitting. Mechanical erosion control methods such as the installation of silt fencing, erosion fabric (e.g. coconut coir), establishment of vegetated strips, bio-logs, and fascines, will be utilized to stabilize soils after construction. All areas of the project will also be seeded with a native seed mix after construction is complete, prior to October 1^{st}, which will ensure grass growth of approximately 1-inch tall by November 1^{st}.

The wetland mitigation areas will be seeded and planted for erosion control. Mechanical erosion control methods such as erosion fabric will be installed over the channel inlets and outlets of the proposed intermittent channels and riparian bench along the Straight Channel.

6.1.8 Cultural Resources Site Avoidance
A 100-foot radius avoidance buffer extends around a cultural resources site located offsite near the eastern edge of Phase 2 (Figure 11), which extends into the Phase 2 project area. Earthwork will not occur within this 100-foot avoidance buffer. Specific requirements for working within this area will be detailed in the Joint Removal-Fill permit.

6.1.9 Site Preparation
<u>Phase 1</u>
Site preparation for Phase 1 began in the fall of 2021 with the removal of non-native blackberry (*Rubus armeniacus*) which dominates the northern to northwestern perimeter of the project area along the top-of-bank of the W. Fork Dairy Creek and Straight Channel. The blackberry treatment will include an herbicide application, followed by cutting dead stalks low to the ground. The existing wetlands are dominated by reed canarygrass which will be mowed, allowed to re-grow and then treated with aquatic safe herbicide. The rest of the project area is in agriculture with an active tall fescue crop.

In the late summer of 2021, the Phase 1 area which is in agriculture, was hayed (cut low to ground level), followed by a broad-spectrum herbicide application. A second broad-spectrum herbicide application will be made to the project area in the spring of 2022 to treat any sprouting non-native plants. Construction earthwork will occur in the summer of 2022. Approximately 9.03 acres within the P1 area will have soils disturbed as a result of construction. These areas will be irrigated after construction to promote seed emergence, and a final broad-spectrum herbicide application will be made to the P1 project area in September of 2022. Seeding of the P1 project area will occur by October 1, 2022.

<u>Phase 2</u>
Site preparation for the Phase 2 area will occur approximately 3 years (2026) after implementation of the Phase 1 area. Site preparation for Phase 2 will occur in a similar manner to

Phase 1, with haying of the tall fescue in the late summer of 2025, followed by a broad-spectrum herbicide treatment in the fall of 2025 and spring of 2026. Construction earthwork will occur in the summer of 2026. A final broad-spectrum herbicide treatment will be made to areas of re-sprouting non-native plants in the early fall. Seeding of the P2 project area will occur around October 1, 2026.

7.0 PLANTING PLAN

The planting plan was developed with consideration of the following goals: to create diverse native plant communities based on nearby reference sites, and the *Existing Vegetation and Site Observations at Killin Wetland, Washington County, Oregon* prepared by the Wetlands Conservancy and Oregon Biodiversity Information Center (2015), and our best understanding of the historic plant communities within the project area; to create plant communities that are resilient to pest invasion and environmental factors such as climate change; to create plant communities that are low maintenance; and to establish plant communities with limited herbicide use and the understanding that succession is a natural process and that many of the non-native weeds that may be commonly found in the first few years of plant community establishment will have a reduction in cover over time. Please refer to the Planting Plan Map (Figure 12) and Appendix J for reference site information and planting plan specifications for each habitat type.

Plant species diversity, including interspecies genetic diversity, is important for developing a self-sustaining, native plant community. A diversity of species provides diverse habitats and food sources for wildlife and invertebrates. Plant communities are dynamic and having a diversity of plant species allows for the movement of species, population establishment, and succession over time. Interspecies genetic diversity is important to allow for natural selection within species and avoidance of a genetic "bottleneck" which can occur as a result of a small genetic pool. Genetic diversity is important to sustain populations during abnormal or extreme events which could include pest invasion (i.e. Emerald ash borer), drought, freeze, and climate change. In order to develop diverse plant communities, we have chosen a diverse species palette which takes into account early and late successional stages.

In order to ensure diverse, interspecies genetics, plant material will be sourced from seed collected from multiple local populations or an identified genetically diverse population from a commercial supplier. Bareroot and container stock will be preferably grown from seed rather than clone. Live-cuttings will be harvested from many plant individuals and local populations. Tree and shrub species will be seeded as well as planted in the form of bareroot, container, and live-stake.

The planting plan was developed with the goal of creating low-maintenance plant communities. This will be achieved by seeding of an aggressive, early successional seed mix (natives that are quick to provide cover), which also includes species that are slower to establish and will be competitive in late successional stages. Areas of Palustrine Emergent Wetland (PEM) will be densely planted with bareroot and plugs of sedge, rush, and herbaceous species, as well as seeded. Forested and shrub dominated areas will be planted with a high density of trees and shrubs to ensure the rapid establishment and spread of woody species. Inter-seeding or the practice of seeding more than once, will be completed for the first couple years of plant establishment. Inter-seeding allows for the re-seeding of areas of bare ground that may have been exposed from events such as weed control or erosion. It also provides a means to add additional species diversity or adjust the species composition in areas.

Several reference sites were observed to inform the species palate. These reference sites included the small areas of existing forest within the DCMB property, and several locations within the Killin Wetlands Nature Park; including the mixed forest directly adjacent to western project area boundary, and several other forested and shrub dominated areas within the park, and along the W. Fork Dairy Creek. Tree, shrub and herbaceous species commonly found at the reference sites were selected for the planting plan.

Another goal of the planting plan (and maintenance plan) is to require infrequent herbicide use. The Palustrine Forested (PFO) wetland, Palustrine Scrub-Shrub (PSS) wetland and upland buffer areas will have trees and shrubs installed in meandering rows approximately four to six feet wide to allow for mowing of the herbaceous layer during the early years of establishment. Many of the common early successional weeds in vicinity to the project such as prickly lettuce (*Lactuca serriola*), teasel (*Dipsacus sp*.), Queen Anne's lace (*Daucus carota*), and annual bluegrass (*Poa annua*) do not need to be controlled by herbicide application. These weeds and many other non-native annual and biennial plant species will decrease in cover after the first couple seasons of mechanical treatment, soil settling, and increased competition from native species. More information on our plan to limit herbicide use is included in the Maintenance Plan (Section 12).

7.1 SITE SEEDING

The site will be seeded using a combination of broadcast seeding and pressing, hand seeding, and drilling. The seed mixes for each habitat type are diverse (ten species or more) and due to the many sizes, shapes and weights of seeded species, the preferred method of seeding will broadcast seeding from tractor or ATV, belly grinder, and hand seeding. Some areas of the Bank will have species drilled by tractor; the most suited species for drilling are those which need to be more accurately planted to depth or are meant to be established in dense populations (i.e. sedges). All seeded areas will have soils pressed after seeding using a metal roller/press. The purpose of pressing (with a heavy roller) the seed is to reduce the movement of seed prior to sprouting and to partially sow the seed into the "softened" soils which have been prepared by shallow discing or harrowing.

Inter-seeding will occur in areas of the site by aerial flailing, belly-grinder, and/or hand seeding; the soil surface will not be disturbed during inter-seeding events.

7.2 PLANTING OF BARE ROOT, LIVE-STAKE AND CONTAINER STOCK

Tree, shrub and herbaceous species will be installed using standard planting techniques such as: digging hole depths suitable for each species, preparing plant roots and proper placement in planting hole, breaking up and replacing soils in planting holes to reduce air-pockets, and gently packing ground surface after planting.

Plants will be installed within the optimal seasonal timing for each plant material type. The bare root planting season typically occurs from around January 15th to March 15th each year. The container stock (plugs, pots) planting season typically occurs from October 15th through

December 15th, and February 15th through March 15th. The live-staking season typically begins when deciduous species lose their leaves (around October-November) and ends in the early spring.

7.2.1 Plant Spacing

Most of the project area will be planted as forest or shrub dominated areas with a target density of 1,600 stems per acre. These areas will be planted with woody species in meandering rows to allow for maintenance mowing. In general, the planting rows will be four to six feet wide with woody plantings spaced approximately 4 feet apart within the rows. Some smaller shrub species such as snowberry (*Symphoricarpos albus*) and tall Oregon grape (*Mahonia aquifolium*) will be cluster-planted with two or more individuals of the same species planted near to each other (1 to 2 feet apart) within a planting row.

The Palustrine Emergent wetland areas will be planted densely (1 to 2 foot spacing) with plugs and/or bare root of sedges, rushes and herbs. These herbaceous plants will be planted in species populations from several individuals to larger populations of 100 or more plants.

7.2.2 Herbivory Control

The DCMB is in close proximity to the Killin Wetlands Nature Park and other forested corridors along the W. Fork Dairy Creek, and it is assumed that some level of herbivory from deer, elk, nutria, beaver, and birds will occur. However, we do not recommend the installation of plastic or metal browse protection on trees or shrubs due to the size of the project area and large number of woody plants specified. The large volume of metal and plastic debris would likely become a maintenance issue for mechanical control. Additionally, frequent anticipated flood events within the project area would likely damage browse protection, with the potential for browse protection materials to be transported offsite to properties downstream.

7.2.3 Deciduous Wetland Forest (PFO)

The largest plant community proposed within the DCMB is deciduous wetland forest (PFO) with a total of 61.1 acres. The proposed location of the PFO was based on historic aerials, and reference forests in close proximity to the project area with similar landscape position and soil types. The dominant tree species specified for this community include red alder (*Alnus rubra*), quaking aspen (*Populus tremuloides*), Pacific willow (*Salix lasiandra*), with lesser amounts of Oregon ash (*Fraxinus latifolia*), black cottonwood (*Populus tricocarpa* spp. *balsamifera*), Oregon white oak (*Quercus garryana*), and western red cedar (*Thuja plicata*). The common shrubs will include willow species (*Salix* sp.), red-osier dogwood (*Cornus sericea*), Douglas spirea (*Spiraea douglasii*), Pacific ninebark (*Physocarpus capitatus*), and black twinberry (*Lonicera involucrata*). The herbaceous layer will be dominated by species such as slough sedge (Carex obnupta) with lesser amounts of mannagrass (Glyceria sp.), American speedwell (*Veronica americana*), and cow parsnip (*Heracleum lanatum*).

7.2.4 Willow Dominated Shrub Wetland (PSS)

The proposed willow dominated shrub wetland (PSS) area is a total of 23.7 acres and located along the eastern edge of the PFO community. The eastern portion of the project area is in close proximity to the city of Banks and the predicted wetland boundary after project construction is near to the eastern project area boundary, limiting the width of upland buffer along the eastern Bank boundary. In order to limit the influx of pollutants, weed seed, and create a dense barrier of vegetation to limit domestic pet and human entry, we are proposing a PSS area along the eastern portion of the project area. The PSS area will be dominated by species such as roses (*Rosa* sp.), willows, red-osier dogwood, black twinberry, and Pacific ninebark, with lesser amounts of red alder, and Oregon white oak. The herbaceous layer will be dominated by species such as tufted hairgrass (*Deschampsia cespitosa)*, sedge and rush species.

7.2.5 Sedge and Rush Dominated Emergent Wetland (PEM)

Two sedge and rush dominated plant communities (PEM) totaling 9.7 acres are proposed within the riverine wetlands, in the lowest elevation areas of the site; these areas also have very clayey textured soils. These areas are expected to be inundated for several weeks in the winter and saturated through the spring. The PEM areas will be seeded with a mix of native grasses, sedges, rushes, and herbs, with the goal of establishing sedge and rush dominated wetland. The areas will also be densely planted with plugs and/or bareroot herbaceous plants with the goal of establishing rapid, perennial native cover. The anticipated succession within this plant community involves the establishment and expansion of sedge and rush species, and decrease in grass cover over time.

It is assumed that some tree and shrub species will become established within this community and that maintenance will be necessary every few years to remove woody species. A small amount (less than or equal to 5% areal cover) of tree and shrub cover will be allowed in this community because PEM communities commonly have a minor component of woody species; a low amount of cover by tree and shrub species was also observed within the PEM reference plant communities.

7.2.6 Intermittent Side-Channel Planting

The footprint of the proposed intermittent stream channels (Channels 1, 2, and 3) will be planted in two plant community types based on the predicted "wetness" zones post-construction. The hydraulic model predicts that the annual flow event will result in approximately a 2-foot depth of surface water in the intermittent stream channels. The 2-Year event is predicted to spill out of the channel footprint in many areas.

The annual inundation zone is considered the wettest plant community type. The intermittent channel bottoms are designed to be approximately 10 feet wide with bank slopes of 5:1 and 3:1 (depending on channel and location), which results in the wettest planting zone being approximately 22 to 30 feet wide (assuming the surface water depth of 2 feet for annual event). These areas total approximately 1.6 acres and will be planted densely (1 to 2 foot on center) with sedges, rushes and herbs.

The zone of planting between the wettest zone and highest elevations of the channel footprint, will be planted with a mix of hydrophytic tree and shrub species similar to the adjacent PFO and PSS wetlands. Tree and shrub species will be planted in meandering rows for most of this planting area. Some small areas between the stream channels will be cluster planted in populations of native species. This planting zone is approximately 3.8 acres.

7.2.7 W. Fork Dairy Creek, Straight Channel and Aquatic Bench Planting

Streambank restoration efforts are proposed on a total of approximately 1.46 acres of streambank which includes 0.22 acres of "aquatic bench" along the W. Fork Dairy Creek and Straight Channel. The aquatic bench and areas below approximately 191 feet in elevation, the approximate elevation on the annual flow event, will be planted with a mix of sedge and rush species. It is anticipated that low elevation areas such as the aquatic bench may be too wet for wetland plants to survive which may result in areas of bareground (similar to the reference sites); nevertheless, we will install sedges, rushes, and native seed in these areas after project construction. The wettest zone is a total of approximately 3.66 acres.

Areas between 191 feet and 194.5 feet (2-Year flow event), will be planted with a mix of hydrophytic tree and shrub species similar to the adjacent PFO and PSS wetlands. This area totals 1.60 acres. Most of the area will be planted with trees and shrubs in meandering rows; some small areas which are deemed unsuitable for row planting will be cluster planted in populations of native species.

If mortality occurs within these plant communities as a result of seasonal flooding, they will be re-seeded and planted the following season. If it is determined that some areas are too wet to support tree and shrub species, they will be planted with a mix of sedge and rush species. Some of the lowest elevation areas may be too wet to support any species of vegetation, which we have observed in low elevations in the W. Fork Dairy Creek, and will be left as bare ground if attempts at re-vegetating the areas have failed; these areas should be at similar elevations to adjacent areas of bare ground within the creek.

7.2.8 Upland and Wetland Mitigation Buffers, and Riparian Upland

The proposed buffer areas total 17.45 acres, which includes 5.35 acres of wetland buffer that will be planted the same as adjacent PSS wetland, 6.02 acres of Riparian Upland (forested buffer) surrounding the waters resources, and 6.08 acres of upland mixed forest buffer. The proposed plant community type for the Riparian Upland and upland mixed forest buffers are the same: mixed (deciduous/coniferous) upland forest; they are separated into Riparian Upland and upland mixed forest types based on the function they provide and for credit accounting. The upland buffer areas will be dominated by tree species such as Oregon white oak and big leaf maple with lesser amounts of Douglas Fir (*Pseudostuga menziesii*), grand fir (*Abies grandis*) and Ponderosa pine (*Pinus ponderosa*). The common shrubs will include tall Oregon grape, snowberry, red-flowing currant (*Ribes sanguineum*), roses, Indian plum (*Oemleria cerasiformis*) and thimbleberry (*Rubus parviflorus*). The herbaceous layer will be dominated by species such as red fescue (*Festuca rubra*), blue wildrye (*Elymus glaucus*), yarrow (*Achillea millefolium*), lupine (*Lupinus* sp.), and Spanish clover (*Lotus unifoliatus*). Most of the upland buffer areas will be planted with trees and shrubs in meandering rows; some small areas which are deemed unsuitable for row planting will be cluster planted in populations of native species. No irrigation will be used for plant establishment in the upland areas; a suitable native species palate, installed during the winter to early spring, will not require irrigation.

Some areas within the 100-foot buffer along the eastern and southern project area boundaries are proposed wetland buffer (5.35 acres). These buffer areas will be planted in the same willow dominated shrub habitat (PSS) as the adjacent shrub dominated mitigation wetlands.

7.2.9 Clean Water Services' Offsite Mitigation Areas (Vegetated Corridor)

Approximately 11.99 acres of upland buffer has been designated as Clean Water Services (CWS) offsite Vegetated Corridor mitigation. The CWS mitigation areas will be planted with the same species composition as adjacent mitigation buffer areas but will be planted to a slightly higher density (2,400 stems/acre). These areas will also be planted in a similar planting manner to adjacent mitigation buffers with trees and shrubs installed in meandering rows for ease of maintenance during the first few years of plant establishment.

8.0 DETERMINATION OF CREDITS

The DCMB will generate a total of approximately 87.56 wetland mitigation credits, and 5.45 acres of stream mitigation credit. Please refer to the Determination of Credits Table (Table 15) and Figure 13. Please note that the CWS offsite vegetated corridor, access roads, and wildlife viewing areas are <u>not</u> included within wetland mitigation credit total.

Table 15: Determination of Credits

Wetland Mitigation	Phase 1-Acres	Phase 1-Credits	Phase 2-Acres	Phase 2-Credits	Total Acres	Total Credits
Wetland Restoration (1:1)	20.79	20.79	2.81	2.81	23.60	23.60
Wetland Creation (1:1)	31.99	31.99	21.69	21.69	53.68	53.68
Wetland Creation (1.5:1) [soil disturbance]	9.03	6.02	1.28	0.85	10.31	6.87
Wetland Enhancement (3:1)	0.91	0.30	2.50	0.83	3.41	1.13
Baseline Wetland NO CREDIT	2.66	0.00	0.93	0.00	0.93	0.00
Mitigation Buffer- Wetland (5:1)	3.16	0.63	2.19	0.44	5.35	1.07
Mitigation Buffer- Riparian Upland (10:1)	6.02	0.60	0.00	0.00	6.02	0.60
Mitigation Buffer- Upland (10:1)	3.87	0.39	2.21	0.22	6.08	0.61
TOTALS	78.43	**60.72**	33.61	**26.84**	112.04	**87.56**
Waters Mitigation (only in Phase 1)	Acres	Linear Feet				
Perennial W. Fork Dairy Creek Enhancement	0.95	1080				
Intermittent Side-Channel Enhancement (Straight Ch.)	1.30	715				
Intermittent Side-Channel Restoration and Creation	3.20	3602				
TOTALS	**5.45**	**5397**				
No Credit Areas	Phase 1-Acres	Phase 2-acres				
Clean Water Services Offsite Mitigation	11.99	0				
Access Road and Wildlife Viewing Areas	1.63	0.90				
TOTALS	13.62	0.90				

8.1 WETLAND MITIGATION AREAS AND BUFFERS

In general, standard wetland mitigation ratios from *A Guide to the Removal-Fill Permit Process* (DSL 2019), were used for the wetlands and upland buffer areas.

The wetland restoration areas were defined by areas of drained hydric soils that met the definition of a hydric soil based on the Regional Supplement and total 23.60 acres; which is equivalent to 23.60 credits at a 1:1 ratio.

The wetland creation areas have historically hydric (Wapato series) soils but many of the areas do not meet the definition of a hydric soil from the Regional Supplement (described in Section

4.6). Wetland will be created through the removal of artificial drainage features such as ditching and tiling, re-connection of the floodplain, and shallow (less than one foot) soil removal in some areas (described in Section 5.1). The wetland creation areas have been separated into two categories: wetland creation (1:1) in historically hydric soils that will not be disturbed, and wetland creation (1.5:1) in historically hydric soils that will be disturbed. Please note that the standard ratio for wetland creation is 1:1 but an adjustment factor of -0.5 will be applied to some of the creation areas (10.31 acres) because of soil disturbance. According to the Removal-Fill Guide a decrease factor of 0.5 should be applied when a "Wetland mitigation site has (a) upland soils that were not historically hydric or (b) hydric soils that will be disturbed" (DSL 2019).

The wetland enhancement credit is proposed for some of baseline Wetlands, where hydrology is restored and functional lift is improved. Baseline wetlands D, E, G, H, and I, will be enhanced by removing tiling and partial filling of the North-South and East-West Ditches, and removal of berms along W. Fork Dairy Creek to reconnect these riverine wetlands to the floodplain. All of the baseline wetlands have predicted functional lift if the project is implemented. The wetland enhancement areas total 3.41 acres, which is equivalent to 1.13 credits at a 3:1 ratio.

The proposed wetland and upland buffer areas are a 100 feet-wide along the eastern and southern project area boundaries. The wetland buffers are proposed at a 5:1 ratio because they are wetland and providing some function even though they are affected by adjacent land use; upland buffers are proposed at a 10:1 ratio.

Riparian Upland is proposed to be 50 feet-wide surrounding the stream mitigation areas (perennial and intermittent); these areas are directly evaluated in SFAM and provide important functions to the resource. These buffers are proposed at a 10:1 ratio.

8.2 STREAM MITIGATION AREAS

Stream mitigation crediting and accounting protocols are in development in the state of Oregon and the Removal-Fill Guide suggests an approach to stream mitigation which was used to develop a process for crediting and accounting at the DCMB.

The stream mitigation concept will meet the Compensatory Mitigation Principle Objectives: "replace functions and values lost at the removal-fill site; provide local replacement for locally important functions and values, where appropriate; enhance, restore or create or preserve waters of this state that are self-sustaining and minimize long-term management needs; ensure siting of CM in ecologically suitable locations; and minimize temporal loss."

Stream mitigation credits will be generated at a 1:1 ratio, based on the grading footprint of the stream mitigation areas within the predicted 2-Year flood elevation (OHWM) as shown on Figure 13. In Chapter 8 of the Removal-Fill Guide, Mitigation Accounting section, it is stated that "minimum requirements for streams are not specified, but generally should not go below 1:1 until an accounting method is developed". We are proposing to use a 1:1 ratio because it is a conservative, underestimate, of the acreage of stream mitigation that will be completed; this is the case because the predicted 2-Year flow event or OHWM will exceed the stream mitigation grading footprint.

Note*: We are aware that the proposed stream mitigation crediting protocol may involve the calculation of credits based on linear feet of stream mitigation and SFAM function and values scores, with additional adjustments. If and when this protocol is approved, we will update our stream credit table with credits calculated by the approved method. Since we currently have the SFAM assessment scores and linear feet of stream mitigation, the conversion to stream credits under a new system should be achievable.*

Stream mitigation credits will include Perennial and Intermittent Waters mitigation because improvements are being made to both perennial and intermittent portions of the stream. The perennial enhancement will include: removing artificial debris from top-of-bank, repairing eroding slopes, removal of invasive species and planting of riparian buffer, removal of powerlines along the creek, and placing large wood. The intermittent enhancement and creation will include: removing artificial debris from top-of-bank of Straight Channel, repairing eroding slopes and adding an "aquatic bench" to the Straight Channel, creation of side-channels through excavation, invasive species removal and native planting and seeding of riparian buffer, and placement of large wood.

Most of the stream mitigation areas such as the channel bottoms of the proposed intermittent channels and aquatic bench on Straight Channel will meet wetland criteria as they will have sufficient hydrology, hydric soils, and a hydrophytic plant community.

8.2.1 Stream Credit Accounting

The DCMB proposes to enhance and create a total of 5.45 acres of stream; which includes approximately 0.95 acres perennial stream enhancement (1,080 linear feet), 1.29 acres of intermittent stream enhancement on Straight Channel (715 linear feet), and 3.21 acres of intermittent stream creation of side-channel habitat (3,602 linear feet).

As mentioned previously, the acreage of stream mitigation proposed for credit is confined to the grading footprint and predicted 2-Year flood elevation of the stream mitigation areas. Mitigation distance was measured as the distance along the thalweg. Upland buffers surrounding the stream mitigation areas are designated as Riparian Upland (10:1); and were not included in the stream mitigation credit totals.

The Oregon Department of Forestry (OAR- 629-635-0200(13) and (14)) defines the W. Fork Dairy Creek to be a "Medium" sized stream, or having "an average annual flow greater than 2 and less than 10 cubic feet per second". The intermittent stream mitigation would be considered a "Small" stream based on their criteria, or having "an average annual flow of two cubic feet per second or less".

The W. Fork Dairy Creek is designated as Essential Indigenous Anadromous Salmonid Habitat (ESH) by DSL and ODFW. The proposed intermittent stream mitigation, is a side-channel to the W. Fork Dairy Creek and would also be considered ESH habitat based on its direct connection to the Creek.

8.2.2 Stream Mitigation Decision Matrix and Debiting Protocol

The DCMB proposes that mitigation debits be based on mitigation eligibility and ecological match described in the Removal-Fill Guide. In order for the DCMB to be used as a mitigation source for stream impacts, the following may apply*:

1. Impact site is located within the same 4th field Hydrologic Unit Code or DCMB service area.
2. Flow permeance match (intermittent or perennial) between impact site and DCMB.
3. Stream size class match (small, medium, large) between the impact site and DCMB; based on Oregon Department of Forestry (OAR- 629-635-0200(13) and (14)).
4. Essential Indigenous Anadromous Salmonid Habitat (ESH) designation match between impact site and DCMB; or it is up to the discretion of the agencies if stream credits may be sold to offset impacts from sites that are not designated as ESH, since the DCMB streams have an ESH designation.
5. Group-level function and value replacement between the impact site and DCMB based on SFAM as described in the Removal-Fill Guide.

**Stream mitigation debits will be evaluated on a case-by-case basis. In future years, this debiting protocol may be updated through an amendment to the MBI.*

If it is determined that a project requiring mitigation meets the eligibility requirements of the agencies, mitigation credits will be debited at a recommended ratio of 1:1 between the impact site area and DCMB waters mitigation area.

8.2.3 Adaptive Approach to Stream Mitigation Crediting, Eligibility and Accounting

As the stream mitigation program evolves at the State and Federal level, we anticipate the potential for needing to adapt our suggested waters crediting, eligibility and accounting protocol at the DCMB. Changes to State or Federal rules and/or formal updates to the mitigation guidance (i.e. Removal-Fill Guide), would trigger the need to evaluate the waters mitigation protocols at the Bank.

Any modifications to the proposed waters mitigation crediting, eligibility and accounting protocols would be accomplished by amendment to the MBI. This amendment would need to be approved by both the Bank Sponsor and State and Federal agencies.

9.0 PERFORMANCE STANDARDS

The mitigation performance standards are ecologically based, measurable standards which were developed using several sources such as: the ecological goals and objectives (Section 2.0), *DSL's Routine Monitoring Guidance for Vegetation, Interim Draft Version 1.0* (DSL 2009), and the SFAM User's Manual and Scientific Rationale.

The mitigation performance standards can be grouped into several categories including construction specifications, vegetation, hydrology, and long-term sustainability and protection. The construction performance standards are focused on proving that the mitigation design was implemented to the specifications described in this MBI. Vegetation standards include percent cover of native species, density and cover of woody plants, hydrophytic dominance (in wetland habitats), native species diversity, percent cover of non-native invasive species, and percent cover of bare substrate. Hydrology standards include a post-construction wetland and waters delineation (Delineation-Lite), and proof that drainage features which were de-activated remain unactive. Long-term sustainability and protection standards include finalizing and executing a long-term plan, conservation easement, and endowment funding.

9.1 VEGETATIVE PERFORMANCE STANDARDS

In general, we followed the DSL Monitoring Guidance (2009) for development of the vegetative performance standards. The various criteria specified by the standards include percent cover of native species, density and cover of woody plants, hydrophytic dominance (in wetland habitats), native species diversity, percent cover of non-native invasive species, and percent cover of bare substrate. In all cases "percent cover" means absolute aerial cover, rather than relative cover. We would like to emphasize that "bare substrate" includes bare soil, as well as areas covered by moss, water and/or dead herbaceous plants.

The DSL Guidance defines invasive and non-native plants in the following way: "A plant species should automatically be labeled as invasive if it appears on the current Oregon Department of Agriculture Noxious Weed list, plus known problem species including *Phalaris arundinacea*, *Mentha pelugium*, *Holcus lanatus*, *Anthoxanthum odoratum*, and the last crop plant if it is non-native. Non-native plants should be labeled as such if they are listed as non-native on the USDA Plants Database. Beginning in year 2 of monitoring, DSL will consider a non-native plant species invasive if it comprises "more than 15% cover in 10% or more of the sample plots in any habitat class, and increases in cover or frequency from the previous monitoring period. Plants that meet this definition should be considered invasive for all successive years of monitoring."

In general, we concur with most of the above definitions of non-native and invasive species. However, although it is agreed that we need a mechanism to identify, track and control potentially invasive non-natives not already listed by ODA or DSL as "invasive", the threshold proposed by DSL Guidance is too proscriptive. This is particularly true for species that "trigger" the invasive label one season, but are controlled well below threshold levels in subsequent years; they should no longer contribute to the overall invasive cover totals. Instead, it is proposed that: Beginning in year 2 of monitoring, a non-native plant (not already identified by ODA or DSL) shall be considered "invasive" if it has 15% or more absolute cover in 10% or more of the plots for a given habitat class. If, in subsequent years, the plant is controlled below the threshold level, it will be removed from the "invasive species list". However, the ODA-listed and DSL-listed non-native invasives (as of 2022) will always be considered invasive, regardless of percent cover.

Please refer to the following Table 16 for a summary of the vegetative performance standards at the DCMB.

Table 16:

Herbaceous (PEM) Wetlands
1.1 The standard for native cover for Year 1 shall be 40%; Year 2 shall be 50%; and Year 3 and thereafter shall be 60%. **1.2** The cover of non-native invasive species during the 1st and 2nd years shall not exceed 30%. For Year 3 and thereafter, the non-native invasive cover shall not exceed 10%. Any occurrence of purple loosestrife (*Lythrum salicaria*), Japanese knotweed (*Polygonum cuspidatum*), and yellow flag iris (*Iris pseudacorus*) will be treated/removed the same monitoring year it is first observed. **1.3** Bare substrate represents no more than 20% cover by the 3rd year after planting and thereafter. **1.4** The standard for diversity in herbaceous wetlands is at least 6 native species, or groupings of native species, each with 5% or more average cover in the herbaceous wetlands by the 3rd year after planting and thereafter. **1.5** The hydrophytic vegetation standard is that the Prevalence Index is $\leq$ 3.0 and/or the vegetation passes the "50/20 rule" for dominance of hydrophytic vegetation.
Shrub dominated (PSS) Wetlands, Forested (PFO) Wetlands, and Buffers
2.1 The combined cover of native species for Year 1 shall be 40%; Year 2 shall be 50%; and Year 3 and thereafter shall be 60%. **2.2** The combined cover of non-native invasive species will not exceed 30% by Year 3 and thereafter. **2.3** Bare substrate represents no more than 20% cover by the 3rd year, unless the tree/shrub canopy cover (shade) is greater than 70% in which case there is no bare ground standard. **2.4** By Year 3 and thereafter, there are at least 6 different native species or groupings of native species. To qualify, a species must have at least 5% average cover in the habitat class. **2.5** The density of woody vegetation is at least 1,600 native plants (shrubs) and/or stems (trees) per acre, including native volunteers and seedlings, and will have a trend of increasing canopy cover. After the aerial canopy cover (*including* shrub cover) is 50% or greater, there will be no minimum number of plants/stems. **2.6** The hydrophytic vegetation standard for PSS and PFO wetlands is that the Prevalence Index is $\leq$ 3.0 and/or the vegetation passes the "50/20 rule" for dominance of hydrophytic vegetation.

Notes: All the above cover percentages represent absolute aerial cover. In all cases, the "Year" refers to the number of years after that portion of the site was planted. Bare substrate includes areas of bare soil and areas covered by moss, water, or dead herbaceous plants.

9.2 WETLAND HYDROLOGY PERFORMANCE STANDARDS

Wetland hydrology performance standards primarily focus on proving that the mitigation wetlands have wetland hydrology. Additionally, they include construction standards and observation of de-activated ditches and drain-tiling to ensure that they remain inactive.

The criteria for achieving wetland hydrology at the mitigation site will be met if hydrologic conditions meet or exceed the basic standard of the 1987 *US Army Corps of Engineers Wetland Delineation Manual*, and refined in the *Corp's May 2010 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region*. Based on the outcome of the post-construction delineation, the acreage qualifying for the restoration and creation may have to be adjusted from the initial expectations. The actual number of credits will follow the ratios stated in Exhibit D using the concurred delineation of actual wetland achievements.

Hydrology monitoring will be performed in the restoration and creation portions of the bank. Sufficient data shall be collected to demonstrate that the areas display wetland hydrology for a minimum of 14 consecutive days during one year with below normal or normal precipitation; these data will be used in combination with paired plots for the wetland delineation-lite. Sufficient data consists of visual observations of the water table and/or saturated soil conditions 12 inches or less from the soil surface. Hydrology data shall be collected a minimum of every few days over a two-week period at a time of the year when wetland hydrology is observed; likely between January and March. Note: The agencies determined that the DCMB has a year-round growing season for the baseline wetland delineation.

9.2.1 Delineation-Lite Wetland Determination

In order to prove that wetland conditions have been met in the restoration and creation areas, the presence of wetland hydrologic conditions and hydrophytic plant communities must be demonstrated. The success of the restoration and creation areas will therefore be dependent on achieving a hydrophytic plant community as defined in Table 16, and wetland hydrology as defined in Section 9.2. The post-construction delineation-lite results (wetland acreage) may cause and an increase or decrease in overall credit amounts, if the results vary from the predicted wetland boundary pre-construction.

The soils in the enhanced and restored wetlands will already have field indicators of hydric soil, but the soils in the created wetland areas are not expected to develop field indicators during the monitoring period. Therefore, there will not be any performance standards for hydric soil indicators in the mitigation wetland. Nonetheless, the soils in the mitigation wetland are expected to meet the definition of hydric soils: "*A hydric soil is a soil that is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions that favor the growth or and regeneration of hydrophytic vegetation*" (as cited by the Corps, 1987). Thus, if the mitigation wetlands have hydrophytic vegetation and meet the criteria for wetland hydrology, the wetlands will have hydric soils, by definition.

The delineation-lite wetland determination will occur approximately 3 to 5 years after project construction (for each Phase). Long-term hydrology monitoring within the wetland mitigation areas will occur at the same locations as in the baseline study (Figure 6) as described in Section 4.3. The wetland determination will be completed during a year that has normal, or near to normal precipitation. Hydrology data from the pits and observation tubes will be used to support the location of the post-construction boundary. The accuracy of the wetland boundary will be fine-tuned using paired wetland data plots. The agencies may request that additional hydrology or vegetation data be collected in areas of the Bank where there is concern that the wetlands are not meeting wetland criteria.

A post-construction ORWAP assessment will be completed around the time of the of the wetland delineation. The post-construction ORWAP scores will be provided in the annual monitoring report.

9.2.2 Wetland Hydrology Performance Standards Summary Table

Table 17: Wetland Hydrology Standards
2.7 Construction Standard 1: Wetland excavation and grading areas will be constructed to design specifications. Excavation and grading will be within +/- 6-inches of designed elevations. This standard will be documented in an as-built report including post-construction topography and photos. **2.8** Construction Standard 2: Ditches and drain-tiling will be de-activated and documented in an As-Built report. The drain-tile outfall locations will be observed at Years 1 and 3, after a rain event in the winter to spring, to ensure that there is no evidence of water flow. Photographs will be included in the annual monitoring reports. If evidence of water flow is observed, the feature will be de-activated during the summer months and documented in the annual monitoring report. **2.9** Post-Construction Wetland Determination and ORWAP: Around Years 3-5 after Bank construction, during a month with normal rainfall, a wetland delineation-lite will be completed for the mitigation wetlands. A post-construction ORWAP will also be completed at this time and will replace the predicted ORWAP scores if they vary from what was predicted.

9.3 STREAM MITIGATION PERFORMANCE STANDARDS

The waters mitigation performance standards were developed using concepts from several sources including: the Removal-Fill Guide, SFAM Version 1.1 User's Manual and Scientific Rational, *Streamflow Duration Assessment Method for the Pacific Northwest* (Nadeau, 2015), *Stream Mitigation: Science, Policy, and Practice* (Environmental Law Institute, Nature Conservancy 2016), *A Stream Evolution Model Integrating Habitat and Ecosystem Benefits* (B. Cluer and C. Thorne, 2013), and *Monitoring Requirements and Performance Standards for Compensatory Mitigation in North Carolina* (North Carolina Interagency Review Team, 2013).

Stream "performance standards should be objective, verifiable, meaningful, achievable, and enforceable. They should also be clear, precise and quantifiable.. ..Performance standards primarily focus on physical criteria such as stream pattern, profile, dimension, pebble counts, and erosion.. ..Specific criteria for chemical and biological success are much less common because mitigation providers cannot directly control the outcome." (ELI 2016)

The DCMB waters performance standards include: proving that the predicted waters acreage was achieved, the created side-channels meet the definition of intermittent, the channel bed and banks are "stable" with the assumption and desire for some dynamic change, floodplain connectivity has improved, there is a no net loss of habitat features such as large wood, and functional improvements have been observed and displayed through post-construction SFAMs.

The Stream Evolution Model (SEM) (Cluer and Thorne 2013) describes various evolutionary stages of a stream system with Stages 0, 7 and 8, being the most highly functioning and "stabilized" stages. These high functioning stages are not confined in lateral movement and are difficult to achieve primarily due to restrictions in the floodplain connectivity, such as potentially effecting farmland or developed properties. The SEM describes low value stages (Stages 3-6) as being restricted through stabilization measures: "Even though using soft engineering and natural materials such as biotechnical revetments and large wood has become common, stabilization impedes the fluvial processes that could drive continued evolution to the substantially more resilient and valuable Stages 7 and 8”. Based on the dynamic nature of “healthy” streams, we are anticipating lateral movement and are promoting it in areas where connections to historic swales are evident. Please refer to Figure 10a which displays areas where we are promoting the created stream channels to re-connect with the floodplain; these areas are anticipated to have some level of erosion as the stream channel evolves and stabilizes.

9.3.1 Floodplain Connectivity

Improving the floodplain connection with the W. Fork Dairy Creek will greatly improve stream functions as predicted by SFAM. Evidence of over-bank events will be documented by photograph, crest gage, and staff gauge. Larger flood events (i.e. 10-year, 50-year) on the Creek currently cause flooding into the floodplain but smaller events (i.e. annual, 2-Year) do not, or cause minimal flooding compared to historic conditions. The larger flood events will be documented; however, the focus of floodplain connectivity data collection will be on the 2-Year event as the project goals include increasing the frequency and duration of the floodplain connection.

9.3.2 Incision

Incision is a measure of hydrologic connectivity and channel stability. “Stream bank incision ratios are a measure of the vertical containment of a stream and indicate the potential for a stream to interact with its floodplain. A lower bank height ratio corresponds with more frequent access to the floodplain by the stream’s waters” (Nadeau et al. 2020). Incision will be measured as the bank height ratio (BHR): height of the stream thalweg to the level of the first terrace of the valley floodplain divided by the bank-full height (SFAM Scientific Rational V1.1). A “high” functional rating for incision is considered to range between <1.33 to 1.0; therefore, we recommend an incision rating of <1.33 for our constructed channels.

9.3.3 Lateral Migration

Lateral Migration of a stream is a natural geomorphic process that occurs when not unnaturally constrained by features such as armoring, diversions, and physical structures. “Unconstrained banks of a channel are exposed to natural erosion processes, which can lead to a widened channel, natural meandering, and creation of diversity in stream energy and sediment deposition rates” (Nadeau et al, 2020). Bank armoring includes “soft” stabilization measures such as the keying of large wood at channel bends. Constraints to lateral migration will be documented within 100 feet of the constructed intermittent channels, or approximately two bank-full widths, during longitudinal surveys as described in Section 10.

9.3.4 Streambank Erosion

Streambank erosion is a common process for active, dynamic systems, particularly near the toe-of-slope. “Stream banks provide sediment supply and allow natural rates of meander to occur within the channel through a process of bank retreat and advancement over time” (Nadeau et al, 2020). Although some level of erosion is beneficial to stream function, a high level of erosion can cause sedimentation as well reduce the functionality of the stream.

Streambank erosion will be defined as areas of bareground which have been created from surface water scour. Areas where erosion is identified will be documented in annual monitoring reports including photographs. Areas larger than 100 square feet will be re-seeded during the next spring or fall seeding window and documented in the annual monitoring report.

The longitudinal distance of streambank erosion will be measured using a measuring tape and/or GPS for a selected reach of the constructed intermittent channels and Straight Channel as described in the monitoring plan (Section 10.3.3).

The intermittent channels have been designed with 10-foot-wide channel bottoms. Rather than design an artificial thalweg for these channels, we are proposing to allow the thalweg to develop through erosional processes with the understanding that this is a natural channel process; therefore, erosion of the channel bottom will not be considered a part of "Streambank Erosion" with regard to the Performance Standards.

9.3.5 Channel Bed Variability of Created Channels

Channel Bed Variability as defined by SFAM, is a summary measure of the wetted width variability and thalweg depth variability. This measure informs several stream functions such as sediment transport and aquatic habitat. Impacted and low-quality stream systems have low Channel Bed Variability. The Channel Bed Variability will be calculated as the average of the variation (averaged standard deviation) of the thalweg depth and wetted width.

The Channel Bed Variability value for the baseline intermittent SFAM was 0.32, which is a result of measurements taken on the natural channel of the W. Fork of Dairy Creek. This is considered a Moderate score in SFAM 1.1, as it is within the moderate range of 0.3-0.7.

9.3.6 Large Wood

The frequency of independent pieces of wood will be determined following the methods described in SFAM (longitudinal survey). Large wood is defined as a piece of wood with a minimum diameter of 4 inches, and minimum length of 5 feet. This includes individual pieces, and pieces within log jams; it does not include keyed logs used for streambank armoring. The frequency is calculated as an average of the total individual pieces of large wood per 100 meters. The frequency of large wood in the baseline SFAM survey was 31.5 pieces per 100 meters, which is within the High range of functionality (>24).

9.3.7 Riparian Vegetation Standards

The stream mitigation footprint (5.45 acres) will have vegetative performance standards that are similar to the wetland mitigation performance standards. The lowest elevations (approximately below 191 feet) within the constructed intermittent channels and re-contoured streambanks on the W. Fork Dairy Creek will be inundated on an annual basis and are identified as the "Wet Zone". The baseline conditions in these low elevation areas along the creek were entirely bareground; therefore, we propose that there is no bareground or native cover standard for the "Wet Zone". Areas within the stream mitigation footprint that are between the elevation of the "Wet Zone" and 2-Year recurrence flood elevation (approximately 194.5 feet) are identified as the "Semi-Wet Zone". The "Semi-Wet Zone" shall have the same vegetative performance standards as the PSS and PFO wetlands (Standards 2.1-2.6). The actual boundary between the "Wet" and "Semi-Wet" zones will be determined after project construction, and may be adjusted later in the project life if it is determined that it is too wet for hydrophytic trees and shrubs to survive at the predicted design elevations.

9.3.8 Post-Construction Waters Delineation and SFAM

In order to prove that proposed stream mitigation areas meet or exceed the predicted area (5.45 acres) of enhanced/restored waters, a post-construction waters delineation will be completed. The post-construction waters delineation will be completed using several forms of data/information including: documented field indicators such as an organic litter or “wrack” line, crest gage and data logger data, USGS stream gage data from the East Fork calibrated with water levels onsite, and aerial (drone) and ground-level photographs. It is assumed that the OHWM or waters boundary is synonymous with the 2-Year recurrence interval flood event. The waters delineation (Standard 3.2) will be completed approximately 3 to 5 years after project construction, during a year with average precipitation and when water levels in the W. Fork Dairy Creek are estimated to be near the 2-Year recurrence interval flood level. The post-construction waters delineation will likely be submitted congruently with the wetland delineation “lite” report.

9.3.9 Created Channel Flow Duration and Intermittence

The term “intermittent” shall be defined as: having flow on an annual basis, and not only during storm events; determined to be intermittent based on SDAM; and, at least one species of aquatic insect or amphibian is present, <u>or</u> one species of fish is present. This definition of intermittent is based on the Removal-Fill Guide and IRT input.

The Removal-Fill Guide defines intermittent as “*any stream that flows during a portion of every year and which provides spawning, rearing, or food-producing areas for food and game fish*” (ORS 196.800). In general, we concur with this definition of intermittence; however, we are developing the stream habitat for native fish species and the presence of any fish species indicates intermittence based on SDAM. Therefore, we are using a modified definition of intermittence as shown above.

ODFW has provided information about the stream reach adjacent to the Bank. The reach is primarily rearing habitat with no barriers to migration, and reportedly spawning habitat upstream of the Bank for winter steelhead (threatened), coho salmon, and coastal cutthroat trout (sensitive); these are native game fish species. The habitat is also utilized for residency, rearing and possibly spawning of native non-game fish including Western brook lamprey, largescale sucker, redside shiner, sculpin, and speckled dace. Non-native species such as bass, bluegill, catfish and carp likely utilize the habitat on a seasonal basis. Based on this information, the created channels will be connected to rearing habitat and upstream spawning habitat for salmonids. The created channels will be considered “food-producing areas” if evidence of aquatic insects or amphibians are found.

9.3.10 Stream Mitigation Performance Standards Summary Table

Table 18: Stream Mitigation Performance Standards
3.0 Construction Standard 1: Perennial and Intermittent stream enhancement areas will be constructed to design specifications. Excavation and grading will be within +/- 6-inches of designed elevations. The number of pieces of large wood will meet or exceed the number proposed in the design which is equivalent to 400 pieces total (>24 pieces per 100 meters). This standard will be documented with an As-Built report including post-construction topography and photos. **3.1** Construction Standard 2: Created intermittent stream channels will have a downward gradient to ensure that there is no fish entrapment risk. This will be initially verified by a longitudinal survey of the constructed channel bottoms and included in the As-Built report. Longitudinal surveys of the created channels will additionally be completed at Years 3, 6, and 9, to ensure that they continue to have a downward gradient. **3.2** Construction Standard 3**:** Aggradation and Degradation will not affect the function of the inlets and outlets of the created channels. Minor change in channel bed and bank elevations will occur as the channels evolve, which is expected to occur primarily for the first few years after construction (Years 1-3). At Years 3, 6, and 9, the elevations of the inlets and outlets of the created channels (bed and banks) will be documented through cross-sectional surveys. Starting at Year 6, the aggradation and degradation, defined as the average change in elevations from cross-sectional surveys, will not be greater than +/- 6 inches from the previous monitoring period (e.g., Year 3), and will not be greater than +/- 12 inches between Years 3 and 9. **3.3** Acreage Requirement: Created intermittent stream channels shall receive sufficient flow throughout the monitoring period to maintain an Ordinary High-Water Mark (OHWM), or 2-Year recurrence interval flood elevation, that meets or exceeds the predicted waters boundary. This will be documented around Years 3 to 5, during a month with normal rainfall. **3.4** Flow-Duration: Created stream channels will be defined as intermittent if they meet all of the following criteria: a) flow occurs on an annual basis, and not just following storm events; b) they are determined to be intermittent by SDAM; and c) at least one species of aquatic insect or amphibian is present, or one species fish is present. The flow-duration standard will be verified at Years 3, 6, and 9. **3.5** Floodplain Connectivity: The 2-Year recurrence interval flood event (OHWM) will cause surface water to spill out of created channels in more than one location, and into the floodplain. This will be documented once around Years 3 to 5, during a year when the total rainfall for a 24-hour period is approximately between the annual and 2-Year event. Documentation will be provided by photographs, crest and staff gage data. **3.6** Incision: The Incision, measured as the Bank Height Ratio (BHR), will not exceed 1.33 within the created intermittent channels. Incision will be measured at ten stream cross-section locations and averaged to determine the incision value. The cross-section locations will be finalized during Year 1 monitoring. Incision will be measured at Years 3, 6, and 9. **3.7** Lateral Migration: Constraints to lateral migration within 100 feet of the created intermittent channels will be <10% of the streambank length (measured on both banks). This includes "soft" engineered structures such as keyed wood on channel bends. The distance of constraints to lateral migration will be measured with measuring tape and/or GPS during longitudinal surveys and documented on Years 3, 6, and 9. **3.8** Streambank Erosion: Streambank erosion will be <40% by Year 3, and <20% by Year 6 and thereafter. The percentage of erosion will be determined based on the length of erosion along each streambank divided by the total length of both streambanks (left, right). Erosion will be measured for both

the enhanced perennial W. Fork Dairy Creek (left bank) and Straight Channel (left bank), and created intermittent channels. Any area where erosion is identified on more than 100 square feet will be re-seeded during the nearest seeding window and documented in annual report. Erosion will be measured at Years 3, 6, and 9. **3.9** Channel Bed Variability of Constructed Channels: The Channel Bed Variability will be measured at 100 locations within the created channels on Years 3, 6 and 9 as described in the monitoring plan. By Year 6 and thereafter, the Channel Bed Variability will be Moderate (0.3-0.7) or higher. **4.0** Large Wood: The frequency of Large Wood will be >24 pieces per 100 meters or approximately 400 pieces of large wood total for the project. Large wood will be counted by longitudinal surveys during annual monitoring at Years 3, 6 and 9. **4.1** Riparian Vegetation Annual "Wet Zone": Native cover and bare ground standards do not apply to the "wet zone" within the W. Fork Dairy Creek and constructed channels, or approximately equivalent to elevations less than or equal to 191 feet. Non-native invasive species defined in Section 9.1 will not exceed 30% in Years 1 and 2, and not exceed 20% for Years 3 and thereafter (same as Standard 1.2). **4.2** Riparian Vegetation Biennial "Semi-Wet Zone": The "Semi-Wet Zone" is defined as the area between the approximate annual inundation event elevation and 2-Year recurrence flood event elevation, and will begin at the lowest elevation where hydrophytic trees and shrubs can establish. The vegetative performance standards for the "Semi-Wet Zone" are the same as Performance Standards 2.1-2.6 for PSS and PFO wetlands.

9.4 LONG-TERM PROTECTION AND SUSTAINABILITY MILESTONES

The long-term protection and sustainability milestones include the development of a long-term management plan, endowment funding, and land title transfer to a reputable Long-Term Land Manager (LTLM).

Table 19: Long-Term Protection and Sustainability Milestones
4.3 Long-Term Management Plan Updated: By the end of Year 3, the long-term management plan will be updated to incorporate any changes based on annual monitoring trends or changing project needs. This will also include an updated endowment budget if necessary. Coordination of these changes will be made with the preferred Long-Term Land Manager (LTLM) and the agencies. **4.4** Endowment Funded 60%: By the end of Year 4, 60% of the estimated endowment will be deposited in an escrow account or transferred to an endowment account approved by the agencies and LTLM. The endowment account balance will be provided with the annual monitoring report. Note: If credit sales occur slower than expected due to low credit demand, the completion of this standard may need to be delayed along with the projected credit release schedule. **4.5** Endowment Funded 80%: By the end of Year 5, 80% of the estimated endowment will be deposited in an escrow account or transferred to an endowment account approved by the agencies and LTLM. The endowment account balance will be provided with the annual monitoring report Note: If credit sales occur slower than expected due to low credit demand, the completion of this standard may need to be delayed along with the projected credit release schedule. **4.6** Long-Term Package Complete: Around Year 7, the long-term package will be finalized and executed which will include: 100% endowment funded, long-term management plan approved, conservation easement recording (Phase 1), completion of DEQ cleanup of contaminated area within tax lot 800 or tax

lot line adjustment to remove the area from the Bank tax lot (Phase 1), and fee-title transfer for the completion of Phase 2 (this will include the Phase 1 area).

9.5 PERFORMANCE STANDARDS SUMMARY BY PHASE

Table 20: Performance Standards Summary by Bank Phase

	Performance Standard Requirement
Phase 1	
Year 1	1.1, 1.2, 1.5, 2.1, 2.5, 2.6, 2.7, 2.8, 3.0, 3.1, 3.9, 4.0
Year 2	1.1, 1.2, 1.5, 2.1, 2.5, 2.6, 3.0, 3.1, 3.9, 4.0
Year 3	1.1-1.5, 2.1-2.6, 2.8, 2.9(?), 3.1, 3.2, 3.3(?), 3.4-4.3
Year 4	1.1-1.5, 2.1-2.6, 2.9(?), 3.3(?), 3.5(?), 4.1-4.4
Year 5	1.1-1.5, 2.1-2.6, 2.9(?), 3.3(?), 3.5(?), 4.1-4.5
Year 6	1.1-1.5, 2.1-2.6, 3.1-4.5
Year 7	1.1-1.5, 2.1-2.6, 4.1-4.6
Year 8	1.1-1.5, 2.1-2.6, 4.1-4.6
Year 9	1.1-4.6
Phase 2	
Year 1	1.1, 1.2, 1.5, 2.1, 2.5, 2.6, 2.7, 2.8
Year 2	1.1, 1.2, 1.5, 2.1, 2.5, 2.6
Year 3	1.1-1.5, 2.1-2.6, 2.8, 2.9(?), 4.3
Year 4	1.1-1.5, 2.1-2.6, 2.9(?), 4.4
Year 5	1.1-1.5, 2.1-2.6, 2.9(?), 4.5
Year 6	1.1-1.5, 2.1-2.6
Year 7	1.1-1.5, 2.1-2.6, 4.6

10.0 MONITORING PLAN AND REPORTING

The following sub-sections describe the various forms of monitoring that will occur at the DCMB. The Monitoring Plan will enable us to track compliance with the performance standards for hydrology and vegetation, as specified in the previous section. Annual monitoring and reporting will occur for a duration of approximately 9 years after project construction (per phase), or longer, until all credits are sold and the establishment period of the bank is completed. Please see the tentative Monitoring Schedule Table 21.

Table 21: Monitoring Schedule (Tentative)

	Wetland Vegetation Standards (1.1-2.6)	Wetland Hydrology Standards (2.7-2.9)	Stream Standards (3.0-4.2)	Long-Term Protection Milestones (4.3-4.6)
Phase 1	Annual	As-Built (2.7); Around Yrs 3-5 (2.8-2.9)	As-Built (3.0-3.1); Around Yrs 3-5 (3.3, 3.5); Yrs 3, 6, and 9 (3.1-3.2, 3.4-4.0); Annual (4.1-4.2)	Years 3, 4, 5, 7
Phase 2	Annual	As-Built (2.7); Around Yrs 3-5 (2.8-2.9)	NA	Years 3, 4, 5, 7

10.1 VEGETATION MONITORING

The monitoring protocol outlined in this section is derived primarily from the 2009 DSL Guidance. During the first year of monitoring we will adopt, or in some cases may slightly exceed, the minimum number of samples as suggested in the DSL Guidance. The minimum number of plots in each sampling unit will be determined by the sampling unit's percentage of the habitat class as a whole. In Phase 1, each wetland habitat type will be greater than 5 acres therefore the minimum sampling size will be: 30 herbaceous plots in the PEM wetlands; 15 woody plots and 30 herbaceous plots each in PFO and PSS dominated wetlands; and 15 woody and herbaceous plots in the buffers. In Phase 2, the PFO and PSS areas will be greater than 5 acres but the PEM and Buffers are approximately 2 acres or less, therefore minimum sampling size will be: 20 herbaceous plots in the PEM wetlands; 15 woody plots and 30 herbaceous plots each in PFO and PSS dominated wetlands; and 5 woody and herbaceous plots in the buffers. If the monitoring data are uniform for several years of monitoring, we may reduce the number of plots according to the sample size calculations provided in the DSL Guidance or other approved method.

In general, the DCMB vegetation sampling will be organized in linear transects running from the western edge of the project to the eastern edge. The first transect will start near the northern end of the site (at a randomly determined start point within the northernmost 100 meters of the site); subsequent parallel transects will be located at fixed intervals south of each other. Figure 14 displays the tentative monitoring plan; the exact locations of the transects will be shown on an updated monitoring map that will be developed for the Year 1 monitoring report. In the habitat sampling units, the first plot along each transect will be randomly located 0 to 10 meters from where the transect enters the sampling unit, and thereafter spaced at regular intervals. The locations of the start and end points of each monitoring transect, the southwestern corner of each herbaceous plot, and all four corners of the woody vegetation plots will be surveyed with GPS during the initial layout of the transects.

The herbaceous plots will be 1 square meter in size. The amount of bare substrate and the areal cover of each plant species growing in or hanging over the meter plots will be estimated and recorded.

The woody vegetation plots (used in the forested wetlands, shrub-dominated wetlands and buffers) will be 100 square meters, measuring 10 by 10 meters. The size and shape of the woody vegetation plots may need to be adjusted in some of the sampling units. Additionally, each wetland woody vegetation plot will contain two herbaceous plots. The number of individual stems (trees) or plants (shrubs) of each native species, including volunteers will be counted in each woody vegetation plot, in order to extrapolate the native stem/plant density per acre. The percent cover of both native and non-native invasive woody species in each woody vegetation plot will also be recorded. In later years, when aerial cover of canopy (tree) species in forested plots exceeds 50% cover, we will no longer count stems but rather estimate cover of each woody species within the plots.

In general, the plot spacing on a transect will have an herbaceous plot spaced every 50 feet along the transect with the 1-meter square placed on the southside of the transect line, with the northwest and northeast corners of the plot laid along the transect; for transects running north to south, the 1-meter square plot will be placed on the east side of the transect line. In PFO, PSS, and upland buffer areas the tree and shrub plots (10 by 10-meter squares) will be placed every 100 feet along the transect line, with the plot located on the southside of the transect with northwest and northeast corners of the plot laid along the transect, for west to east transects; and plots will be located on east side of transect line for north to south transects. Plot spacing and location along a transect may be adjusted in areas to account for spatial constraints such as proximity to the project area or habitat boundaries.

The monitoring for each sampling unit in the wetlands and uplands will, to the extent possible, be monitored at the same time each year.

10.1.1 Riparian (Stream) Vegetation Monitoring

Vegetation monitoring within the stream mitigation areas (perennial and intermittent) will be similar to that of the wetland mitigation areas. The riparian vegetation monitoring is located within the grading footprint (and predicted OHWM) of the perennial and intermittent (constructed channels and Straight Channel), it does not include buffer areas. There will be approximately 15 monitoring transects within the stream mitigation areas as shown on Figure 14. The planting plan and performance standards for this area describe the seasonal “Wet Zone” and “Semi-Wet Zone” related to flood frequency. For each monitoring transect, two herbaceous plots (1-meter square) and one woody plot will be evaluated; including 1 herbaceous plot placed within the “Wet Zone”, and 1 herbaceous plot and 1 woody plot within the “Semi-Wet” zone. The width of the “Semi-Wet Zone” is too narrow to prescribe 10 by 10 meter plots for woody species, therefore the woody plots will be 5 by 5 meters within the stream mitigation area.

10.2 WETLAND HYDROLOGY MONITORING

Hydrology monitoring within the wetland mitigation areas will occur at the same locations as in the baseline study (Figure 6), beginning the first year after project construction and continuing until the completion of the post-construction delineation. Hydrology data will be collected for the first couple years after bank establishment as a means to provide longer term evidence of hydrology, even though the post-construction delineation will not occur until around Years 3 to 5. This hydrology monitoring will occur in the winter to early spring (December-March) during a period of normal rainfall and include taking manual measurements of the depth to “free-water” in monitoring holes approximately two times per week. Long-term hydrology monitoring will also occur at the locations of the shallow observation tubes from the baseline study; digital-dataloggers will be installed into the observation tubes that will measure and record water levels approximately every 4-hours for the first few years after project construction.

10.2.1 Qualitative Monitoring of CWS stormwater outfalls

For the first three years after Bank construction (Years 1-3), qualitative monitoring will occur at the two CWS stormwater outfall locations, a minimum of once per year. Qualitative monitoring will be defined as making observations of the water quality (e.g. turbidity, color, smell) and quantity, and photographic documentation.

Qualitative monitoring will be completed after a storm event with the following characteristics: the storm event is greater than 0.1 inch; and the storm even has a minimum of a 24-hour antecedent dry period, with a goal of 48 hours. Note that these are the requirements for stormwater sampling from the CWS MS4 permit.

Results of this qualitative monitoring will be provided in the annual monitoring reports. If the water quality or quantity from these stormwater outfalls is identified as a concern, the Sponsor may coordinate with CWS, the co-chair agencies and DEQ, to resolve the issue.

10.3 PERRENIAL AND INTERMITTENT STREAM MONITORING

The following sub-sections describe the various forms of stream monitoring that will occur to determine if the Performance Standards are achieved.

10.3.1 Surface Water Monitoring (perennial and intermittent)

Surface water monitoring methods used to inform the post-construction waters delineation and document overbank flood events will include the installation of crest-gages and staff-gages. Crest-gages will display the highest surface water elevation reached, so that these events can be captured without direct observation. Staff-gages will need to be manually read and will be more useful for photographic documentation of flood events. The approximate locations of crest and staff gages are shown on Figure 14. On Year 1, the predicted 2-Year and annual flood elevations will be benchmarked in locations near to staff and crest gages.

Visual observations (photographs) and recording of surface water events will be completed when water levels of the W. Fork Dairy Creek are known to be at approximate annual and 2-Year flood recurrence elevations based on local precipitation data and/or gage data from the East Fork Dairy Creek, calibrated to the West Fork (described in Section 4.4.3).

The flow duration in the created channels will be monitored with stream data-loggers (STEM loggers). A minimum of two data-loggers will be installed within the created channels to collect data on the duration of flow within the channels.

10.3.2 Created Channel Cross-Section Monitoring

The monitoring transects used for riparian vegetation monitoring will also be used to measure Incision, and Channel Bed Variability at Years 3, 6 and 9. Incision will be measured as defined in Section 9.5.2. Wetted width measurements will be made at the transect locations on Years 3, 6, and 9, to inform the Channel Bed Variability value; this value will also be calculated using data from a longitudinal survey.

The inlets and outlets of the created channels will be monitored with cross-sectional surveys of topography to track change to bed and bank elevations over time and evaluate aggradation and degradation. The end point locations of the cross-sections will be permanently marked during the As-Built survey to ensure that they are completed at the same locations during future monitoring efforts. The cross-sectional topography surveys will occur at Years 3, 6, and 9.

10.3.3 Created Channel Longitudinal Surveys

Longitudinal surveys of the created channels will occur on Years 3, 6, and 9. These surveys will take place during the winter to early spring when surface water is present in the created channels. Measurements of the depth of surface water at the stream thalweg will be made at approximately 100 locations throughout the created channels in a representative reach, typically spaced approximately 20 feet apart; these measurements will be used to calculate Channel Bed Variability. While the longitudinal survey is being completed along the thalweg, measurements of Erosion, Large Wood, and constraints to Lateral Migration will be also be collected. Erosion will be measured simply as the distance along each bank (to the nearest foot) where erosion has occurred. Large Wood as defined in Section 9.5.6 will be counted during the longitudinal survey. Constraints to Lateral Migration as defined in Section 9.5.3 will be measured as the total distance (to the nearest foot) along each stream bank where constraints to lateral migration are observed.

10.3.4 Created Channel Aquatic Organism Sampling

Biological surveys will be competed on Years 3, 6, and 9 to determine if the intermittent channel and aquatic habitat created by the project meet project objectives and performance criteria. These surveys will include macroinvertebrate, amphibian, and fish sampling. Macroinvertebrate and amphibian sampling will be completed following the methods described in SDAM or by similar method determined acceptable to the agencies. If an alternative method to sampling other than the methods described in SDAM is suggested, an aquatic sampling plan will be provided to the agencies for approval, prior to sampling.

Fish presence surveys will be completed in coordination with ODFW and will likely include securing a Scientific Taking Permit through NOAA-Fisheries and ODFW. The goal of these surveys is to determine if any fish species establishes presence or uses the newly created aquatic habitats of the project. Methods used for fish sampling may include visual observation methods (streamside, snorkel, and/or video), and less-lethal passive or active capture techniques with nets and/or traps (e.g., small-scale beach seine, fyke-net, minnow-trap, etc.). Electrofishing can be considered as another active capture method for assessment of fish presence, and has been used in the basin, but would only be used with close coordination and sperate approvals from ODFW.

10.4 PHOTOGRAPHIC DOCUMENTATION

Photographic documentation locations will be established at representative locations throughout the site to track changes throughout the life of the project. The location of each Photo Point (PP) will be surveyed with GPS during the first year of monitoring. During the monitoring period, photos from each PP will be taken annually at a minimum, to demonstrate the progression of the plant communities, changes to constructed channel inlet and outlets, and fluctuations in surface water hydrology. Additionally, photographs will be taken of fish, invertebrates and amphibians sampled within the created intermittent stream channels and submitted in the Year 3, 6, and 9 monitoring reports. Photographs will also be taken of CWS stormwater outfalls as detailed in Section 10.2.1. In future years, the number and location of PPs may be adjusted if deemed necessary.

10.5 ANNUAL MONITORING REPORT

The results of the annual monitoring efforts will be summarized in yearly reports. The reports will generally follow the guidelines set forth in Corps' Regulatory Guidance Letter No. 08-03. As allowed for larger, more complex projects by the Corps, the report will likely exceed the general maximum number of pages and figures suggested in their Regulatory Guidance Letter. These reports will include text, data, analysis, plans, maps and photographs. The reports will provide a summary of annual maintenance efforts and also provide a tabular summary of performance standard trends from previous years. The annual monitoring report will be submitted to the Corps and DSL by December 31st each year.

A second set of performance standards and metrics may be proposed for the time period after initial hydrology and vegetation targets have been met and maintained for 5-7 years. DSL and the Corps require monitoring and reporting to demonstrate that performance standards continue to be met as long as there are still credits for sale. The second set of standards may reflect a reduced level of monitoring effort but should be sufficient to verify whether performance standards continue to be achieved. Any proposed second set of standards must be approved by the Co-chair Agencies.

10.5.1 Wetland and Waters Delineation Reports

A post-construction wetland delineation-lite and waters delineation report will be submitted to DSL and the Corps in addition to the annual monitoring report, approximately 3 to 5 years after project construction. It is anticipated that both the wetland and waters delineations would be completed in the same year but they may be completed separately, in which case would be submitted as two reports.

11.0 ADAPTIVE MANAGEMENT

The DCMB will be managed in a manner that will allow for adaptive management strategies to be used in cases where unplanned or unforeseen circumstances require a new or different approach to management, than otherwise stated in this document. Adaptive management strategies will also be implemented when unforeseen events cause failure of Bank performance standards, or pose a threat to the functionality of mitigation areas, or surrounding properties.

In general, adaptive management strategies will be prescribed based on the exact nature of the failure or deficiency. Some examples of potential causes for adaptive management include: damage from flooding, herbivory, insect pests, fire, vandalism, and invasive weeds. In cases where an adaptive management strategy is deemed necessary, a remedial action plan will be developed by the Bank sponsor and provided to the IRT for review. If the IRT determines that the remedial action plan will provide a suitable solution to the problem, the Bank sponsor will implement the plan. The Bank sponsor will be responsible to make any necessary repairs to the

Bank due to unforeseen events which threaten the functionality or goals or objectives of the project.

The maintenance plan utilizes an integrated approach to manage native plant communities; allowing for the use of many different restoration techniques and treatments. If unforeseen weed encroachment causes the repeated failure of an area of the bank, the sponsors may negotiate converting those areas to a different vegetation class type; for example, from PEM to PFO. If the species assemblage for a certain habitat type is determined to be problematic due to reasons such as pest infestation, dominant species may be altered to reduce the potential for mortality. Any adjustments to vegetation class or species composition will be proposed to the agencies in annual monitoring reports, and if approved, implemented the following fall to spring.

If there is identifiable failure to wetland or waters hydrology sources, such as drainage through historic drain-tile lines, the agencies will be notified and information included in the annual report. Repairs will be made to de-activate any drains during the summer months, and any re-seeding or planting will be completed during the next planting season and documented in the annual report.

If the bank has failure in constructed features such as keyed large wood, constructed stream channels or graded features, they will be repaired (e.g., reconstruction, regrading) to their original design unless determined that the feature(s) is not necessary for the functionality of the bank; The exception is within areas where the constructed channel movement or minor erosion is acceptable.

If the created channels do not function as proposed or are not determined to be “intermittent” and no remedy can be found (e.g., reconstruction), the sponsor may negotiate with the agencies to re-classify the channels as wetland (creation) with an amendment to the MBI. It is anticipated that the channels will meet the definition of wetland based on soils, hydrology and vegetation; they are also located along the perimeter of the existing wetland mitigation area.

If surrounding land uses impact the bank, such as farming practices on the short term, and urban development on the long term, the Sponsor will work to address the issues and repair any damage to the Bank. It is not likely that farming practices will impact the Bank because farm vehicles will no longer access the Bank land once it is established. Additionally, the Bank will have a perimeter access road that will be fenced, to keep residential access and impacts to a minimum. Any farming activities which persist in the Phase 2 project area until the phase is implemented will not need to access the Phase 1 area as there are access points into the Phase 2 area from the adjacent land to the east.

If the CWS stormwater easements negatively impact the Bank, the Sponsor will coordinate with CWS to resolve the issue. Impacts related to the CWS easements may be related to maintenance or repair of the stormwater pipes, and/or water quality issues from the outfalls. The stormwater easements state that any damages to the property as a result of the easements will be rectified by CWS. If damage to the Bank occurs as a result of maintenance or repair, the Sponsor will coordinate with CWS to pay for the damage; if damage occurs to the native plant community, the area will be re-seeded and planted the next planting season (fall-spring). If water quality issues are identified through qualitative sampling of the stormwater pipe outfalls, the Sponsor will notify the co-chair agencies and CWS. The Sponsor will coordinate with CWS to ensure they resolve the water quality issue, and if the issue is not resolved by CWS will notify DEQ; CWS is obligated to manage their stormwater infrastructure by their NPDES MS4 permit.

12.0 MAINTENANCE PLAN

The DCMB maintenance will primarily involve vegetation community management. The planting plan has been developed with the understanding that community succession will occur over time, and that the climax community species composition will differ from that of the early years of plant community establishment. In an effort to reduce the frequency and volume of herbicide applied to the project area, the maintenance plan will focus more on mechanical weed control with the understanding that some non-native plants that may be common early on in the project life (Years 1-5) will not thrive in the later years (Years 6-10).

Integrated management techniques will be used to establish the native plant communities including: mowing, cutting, hand removal, herbicide use (limited), inter-seeding and planting. Scientists will observe the project area monthly, at least in the early years after planting, to determine the appropriate treatments or maintenance activities. Maintenance efforts will begin shortly after planting and seeding (for each Phase).

Maintenance costs will be tracked each year by task in order to update the long-term maintenance budget to reflect actual costs of Bank management.

12.1 LIMITED HERBICIDE USE

Herbicides can be an effective tool to manage plant communities but the common trend of repeated herbicide applications over many years is unnecessary and has environmental consequences. It is widely known that herbicides (or more commonly pesticides) can have negative effects on pollinators, insects, fish, wildlife, humans, etc. Native plant community establishment and management is related to one functional category in ORWAP out of 16 categories; therefore, it seems that management of plant communities should be done in a manner that limits the negative effects to other functions.

Site preparation will include more than one growing season of broad-spectrum herbicide treatments prior to seeding and planting (per Phase). After the project area is seeded, herbicide applications will be limited to twice per year for the first 3 years, and reduced to once per year for the 4th year and beyond. Herbicide applications will target non-native perennial plants that are known to be problematic weeds. In order to reduce the frequency of herbicide applications and achieve effective weed control, mechanical and manual control methods will be utilized to keep certain earlier season weeds from releasing seed, and delaying them from maturing to the flowering stage until optimal timing for herbicide application on most species; essentially targeting spring, summer and late summer weeds at the same time.
If a new non-native weed is identified for the first time within the project area (potential for eradication), a weed becomes widely spread, or there is concern for rapid expansion, the use of herbicide will be allowed without limitation as a means to protect the plant communities. The concept of limited herbicide use is not meant to add an extra level of risk to the DCMB project but as a guidance strategy for plant community management.

All herbicides used will be applied according to the product label by licensed pesticide applicators.

12.2 MANUAL AND MECHANICAL WEED CONTROL

The DCMB Planting Plan (Figure 12) specifies approximately 117 acres or 89% of the project as PFO, PSS, and Upland Buffers, all of which are tree or shrub dominated communities. These plant communities will be planted in meandering rows to allow for maintenance mowing, which will be the primary form of maintenance in the early years after planting. Hand-pulling and cutting of non-native plants will occur within the planted rows and/or areas that are difficult to mow. Mowing will occur approximately 2 to 3 times per year for the first three years after planting, and will be reduced to “patch” mowing areas of non-native plants for the later years.

The purpose of mowing and cutting is to reduce competition on the newly planted trees and shrubs, and to keep non-native plants from producing and releasing seed. Once the planted trees and shrubs are well established, typically by Year 3 after planting, the frequency and size of areas mowed will be reduced.

Biennial and annual non-native plants that are common in early successional communities typically require full or partial sunlight, and softened soils such as after a soil disturbance to become established. These species can be effectively controlled through mechanical and manual methods and will not be targeted for herbicide application. Some examples of common annual and biennial non-native plants include: prickly lettuce (*Lactuca serriola*), Queen Anne’s lace (*Daucus carota*), teasel (*Dipsacus sp.*), dock species (*Rumex sp.*), and sow thistle (*Sonchus asper*).

Some Perennial non-native weeds will also be controlled manually. Many species can be hand-pulled during moist conditions such as after rain events.

12.3 INTER-SEEDING AND PLANTING

Some level of mortality is expected for the project that will require replanting. Areas of tree and shrub mortality will be re-planted to achieve 1,600 stems/acre average for the habitat type. Areas of bare ground caused from maintenance activities, erosion, or plant mortality, will be re-seeded.

Inter-seeding which is the practice of multiple seasons of seeding will occur for the first few years of plant community establishment. The purpose of inter-seeding is not only to add more seed to areas of bare ground but to also improve diversity. One goal of inter-seeding events will be to increase annual herbaceous diversity.

12.4 HUMAN RELATED DAMAGE

It is anticipated that some damage from humans in the form of trespass, litter, or vandalism may occur. This also includes damage from domestic animals or livestock. The DCMB will be visited frequently, for maintenance and management activities and if any human related damage exists, it will be identified rapidly. The Bank sponsor will repair/remove any damage that occurs to the DCMB within one growing season.

12.5 EROSION OR HABITAT DAMAGE

Any damage as a result of surface water flow, such as erosion, will be identified during annual monitoring efforts, or sooner. Habitat damage to constructed features or biological damage such as herbivory will also be identified during monitoring and maintenance efforts. Minor erosion and habitat damage are expected and will be addressed within one growing season. In most cases this will include re-seeding and planting. See Adaptive Management Plan (Section 11) for further discussion on damage requiring re-construction or grading.

12.6 MAINTENANCE SCHEDULE

Table 22: Maintenance Schedule			
PHASE 1			
Year	**Category**	**Task**	**Timing**
Year 0 (2021)	Site Preparation	herbicide app. on agricultural crop, reed canarygrass, blackberry.	late summer-fall
Year 0 (2022)	Site Preparation	herbicide app. on agricultural crop.	spring
Year 0 (2022)	Construction	earthwork	summer
Year 0 (2022)	Site Preparation	herbicide app. on project area	September
Year 0 (2022)	Seeding	seeding project area	completed by Oct.1st
Year 0 (2023)	Planting	planting bareroot and container stock	completed by March 15th
Years 1-2 (2023-2024)	Vegetation Maintenance	herbicide app., mowing, handpulling	spring, summer, fall
Years 1-2 (2023-2024)	Human Related Damage	litter cleanup, vandalism repairs	summer
Years 1-2 (2023-2024)	Inter-Planting	inter-planting: seed, and bareroot, container stock	fall, winter, spring
Years 3-5 (2025-2027)	Vegetation Maintenance	herbicide app., mowing, handpulling	spring, summer, fall
Years 3-5 (2025-2027)	Human Related Damage	litter cleanup, vandalism repairs	summer
Years 3-5 (2025-2027)	Erosion or Habitat Damage due to Surface Water	re-seeding or planting in areas if necessary	summer, fall
Years 6+	Vegetation, Human Damage, Erosion/Habitat Damage	as needed maintenance until Bank closure	spring, summer, fall
PHASE 2			
Year	**Category**	**Task**	**Timing**
Year 0 (~2024)	Site Preparation	herbicide app. on agricultural crop.	late summer-fall

Year 0 (~2024)	Site Preparation	herbicide app. on agricultural crop.	spring
Year 0 (~2024)	Construction	earthwork	summer
Year 0 (~2024)	Site Preparation	herbicide app. on project area	September
Year 0 (~2024)	Seeding	seeding project area	completed by Oct.1st
Year 0 (~2025)	Planting	planting bareroot and container stock	completed by March 15th
Years 1-2 (~2025-2026)	Vegetation Maintenance	herbicide app., mowing, handpulling	spring, summer, fall
Years 1-2 (~2025-2026)	Human Related Damage	litter cleanup, vandalism repairs	summer
Years 1-2 (~2025-2026)	Inter-Planting	inter-planting: seed, and bareroot, container stock	fall, winter, spring
Years 3-5 (~2027-2029)	Vegetation Maintenance	herbicide app., mowing, handpulling	spring, summer, fall
Years 3-5 (~2027-2029)	Human Related Damage	litter cleanup, vandalism repairs	summer
Years 6+ (~2030)	Vegetation, Human Damage	as needed maintenance until Bank closure	spring, summer, fall

13.0 SITE PROTECTION INSTRUMENTS

Please refer to Exhibit F: Property Protection Instrument. The DCMB will be initially protected through a deed restriction over the entire project area. The Bank sponsor will record a Conservation Easement over the Phase 1 area, upon finalization of the long-term package for Phase 1. Prior to completion of Phase 2, a tax lot line adjustment will be completed to incorporate the Bank project area onto one tax lot (tax lot 800). The finalization of the long-term package for Phase 2 will include completing a fee-title transfer of the Bank lands (Phases 1 and 2) to the Long-Term Land Manager (LTLM).

14.0 LONG-TERM MANAGEMENT PLAN

A Long-Term Management Plan for the DCMB is included in Exhibit K. The DCMB project will be managed by the Sponsor until all the performance standards are met and all credits are sold for each phase; or for approximately 10 years per phase. At the time of closure for each Bank Phase, the long-term package will be finalized and executed. The long-term package will include a Long-Term Management Plan, Conservation Easement and/or ownership transfer (fee-title transfer), and Endowment Funding Agreement.

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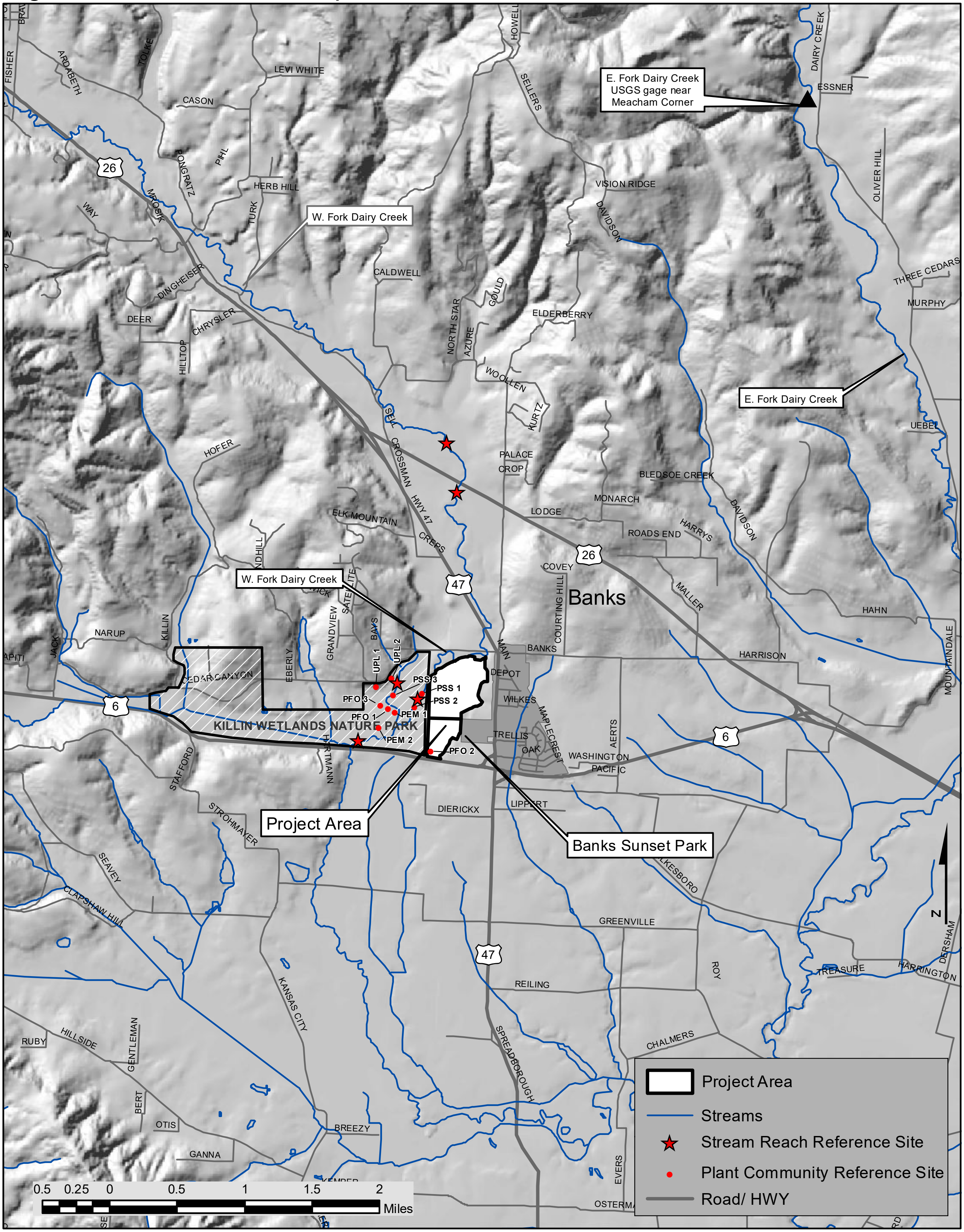
MAPS AND FIGURES:

Figure 1: Site Location Map



Background data layers compliments of RLIS.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 1. Site Location Map 220127.mxd

Map created by Miles Eubanks.
Ver. 1.22

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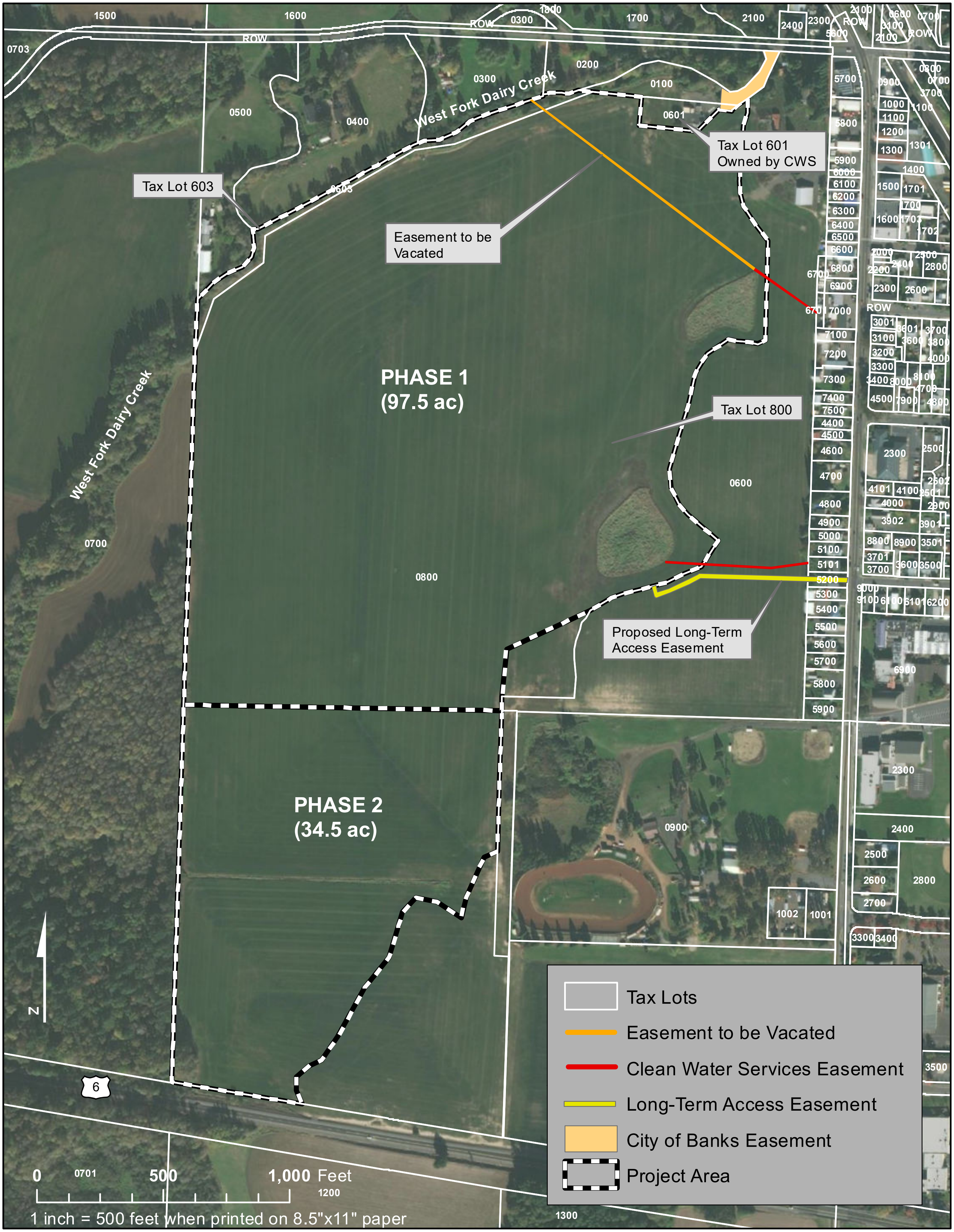
Figure 2: Tax Lot Map (T2N R4W S36)



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Tax Lot Layer provided by RLIS.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 2. Tax Lot Map 220131.mxd

Map created by Miles Eubanks.
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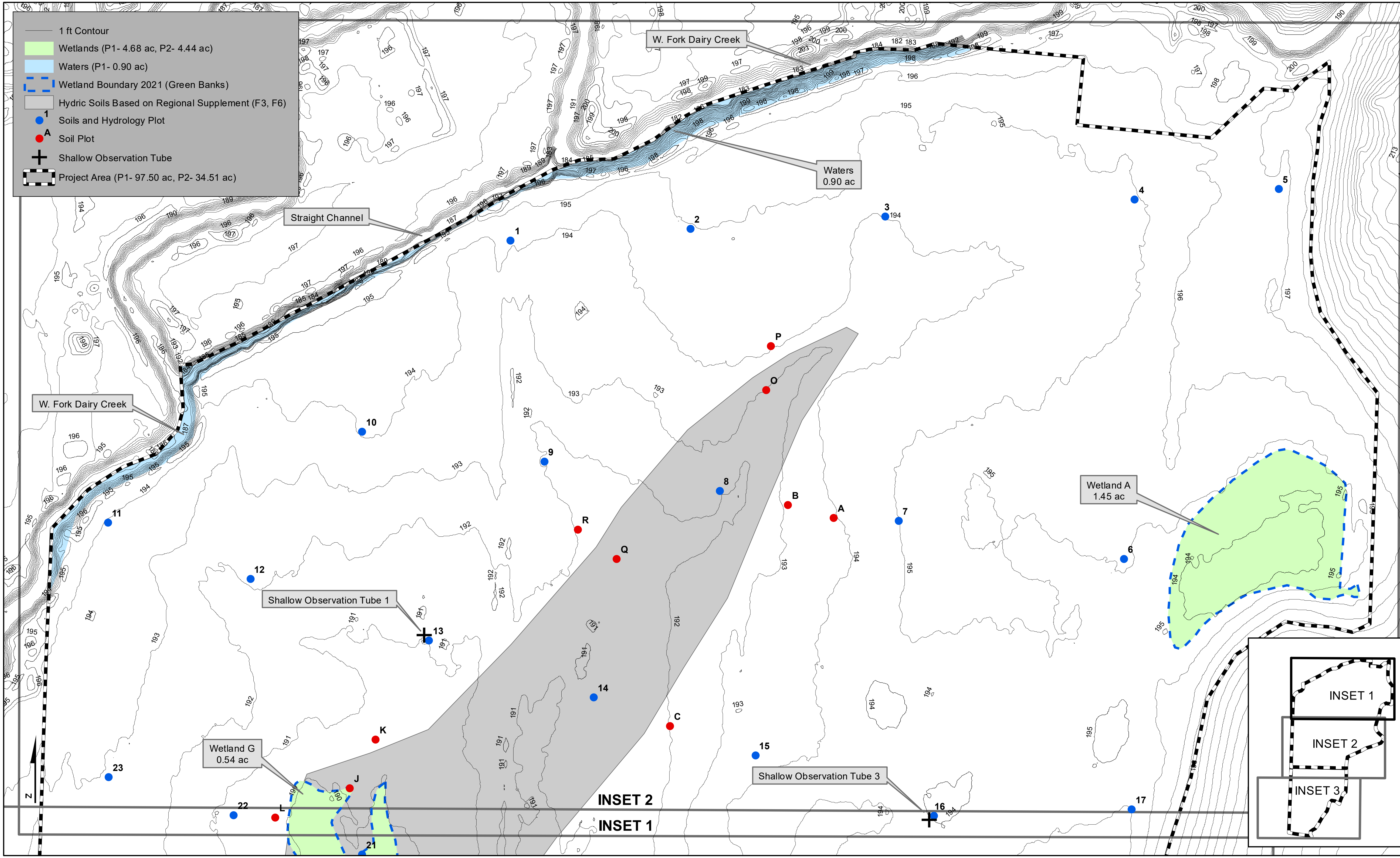
Figure 3a: Baseline Topography, Wetlands, Waters, Hydrology and Soil Plots - Inset 1



Contours derived from LiDAR provided by the Oregon Department of Geology and Mineral Industries (DOGAMI).

Ground elevations surveyed in stream channel and ditches where LiDAR inaccuracies were found.

Wetlands delineated by Pacific Habitat Services 2019 and Green Banks LLC 2021.

Hydric Soils delineated by Green Banks LLC 2020 based on Regional Supplement.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 3a. Baseline Topography, Wetlands and Waters 220202.mxd

Map created by Miles Eubanks. Ver. 1.22

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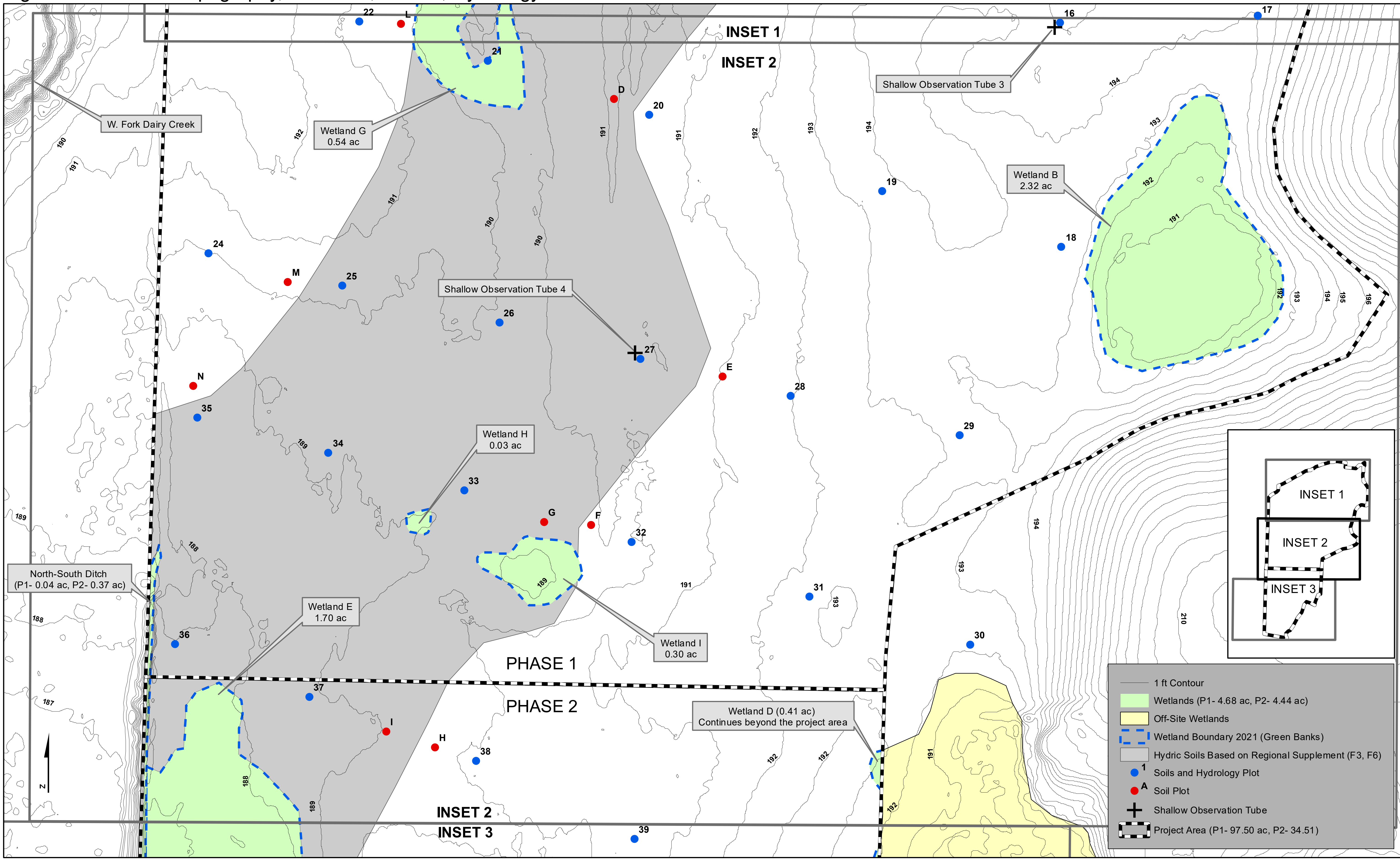
Figure 3b: Baseline Topography, Wetlands, Waters, Hydrology and Soil Plots - Inset 2



Contours derived from LiDAR provided by the Oregon Department of Geology and Mineral Industries (DOGAMI).

Ground elevations surveyed in stream channel and ditches where LiDAR inaccuracies were found.

Hydric Soils delineated by Green Banks LLC 2020. Based on Regional Supplement.
Wetlands delineated by Pacific Habitat Services 2019 and by Green Banks LLC 2021.
Off-Site wetlands based on wetlands delineated by Pacific Habitat Services 2019 and aerial photography.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 3b. Baseline Topography, Wetlands and Waters 220201.mxd

0 75 150 300 Feet
1 inch = 150 feet when printed on 11"x17" paper

Map created by Miles Eubanks.
Ver. 1.22

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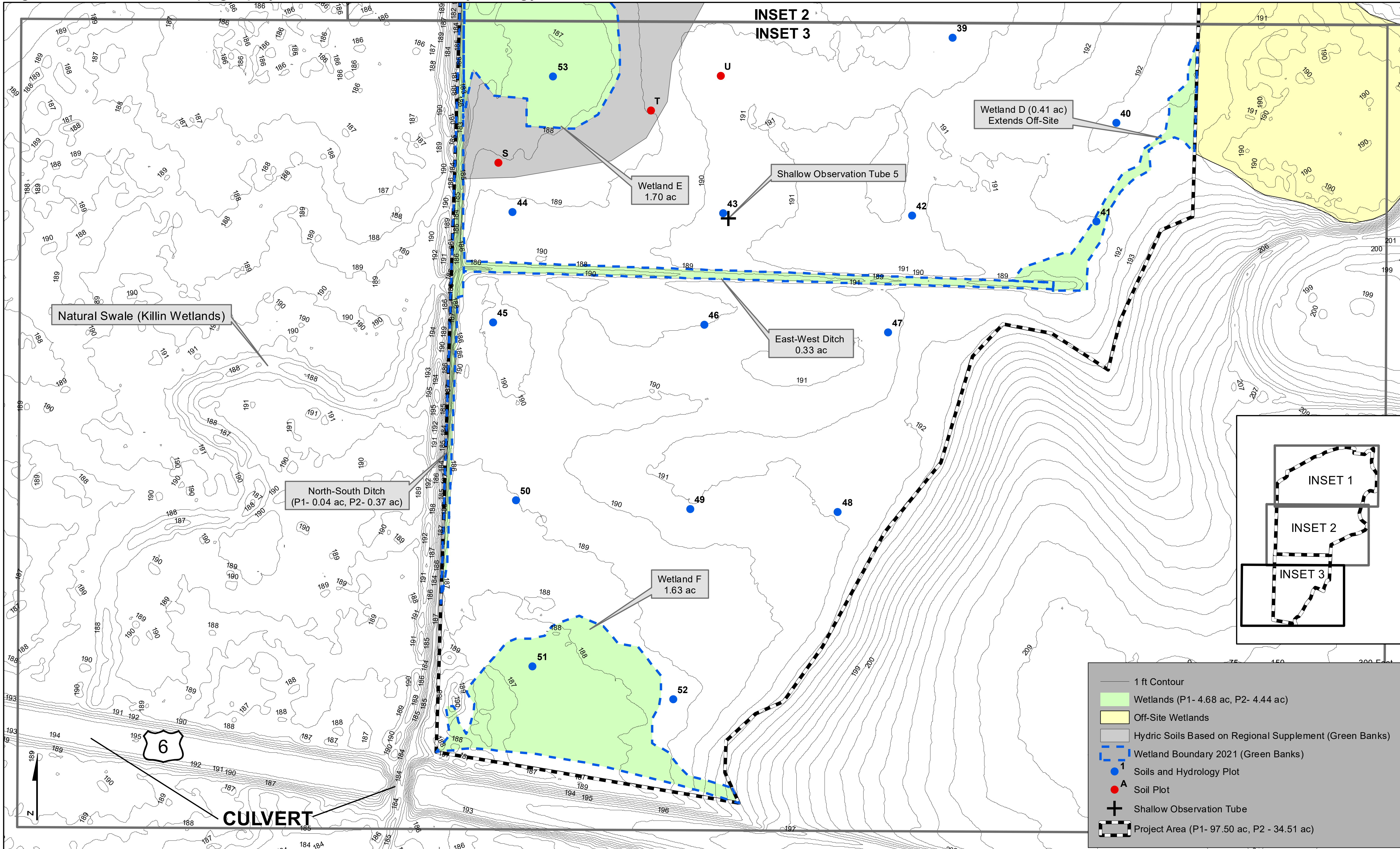
Figure 3c: Baseline Topography, Wetlands, Waters, Hydrology and Soil Plots - Inset 3



Contours derived from LiDAR provided by the Oregon Department of Geology and Mineral Industries (DOGAMI).

Ground elevations surveyed in stream channel and ditches where LiDAR inaccuracies were found.
Off Site wetlands based on wetlands delineated by Pacific Habitat Services 2019 and aerial photography.

Hydric Soils delineated by Green Banks LLC 2020. Based on Regional Supplement.
Wetlands delineated by Pacific Habitat Services 2019 and Green Banks LLC 2021.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 3c. Baseline Topography, Wetlands and Waters 220107.mxd

0 75 150 300 Feet
1 inch = 150 feet when printed on 11"x17" paper

Map created by Miles Eubanks.
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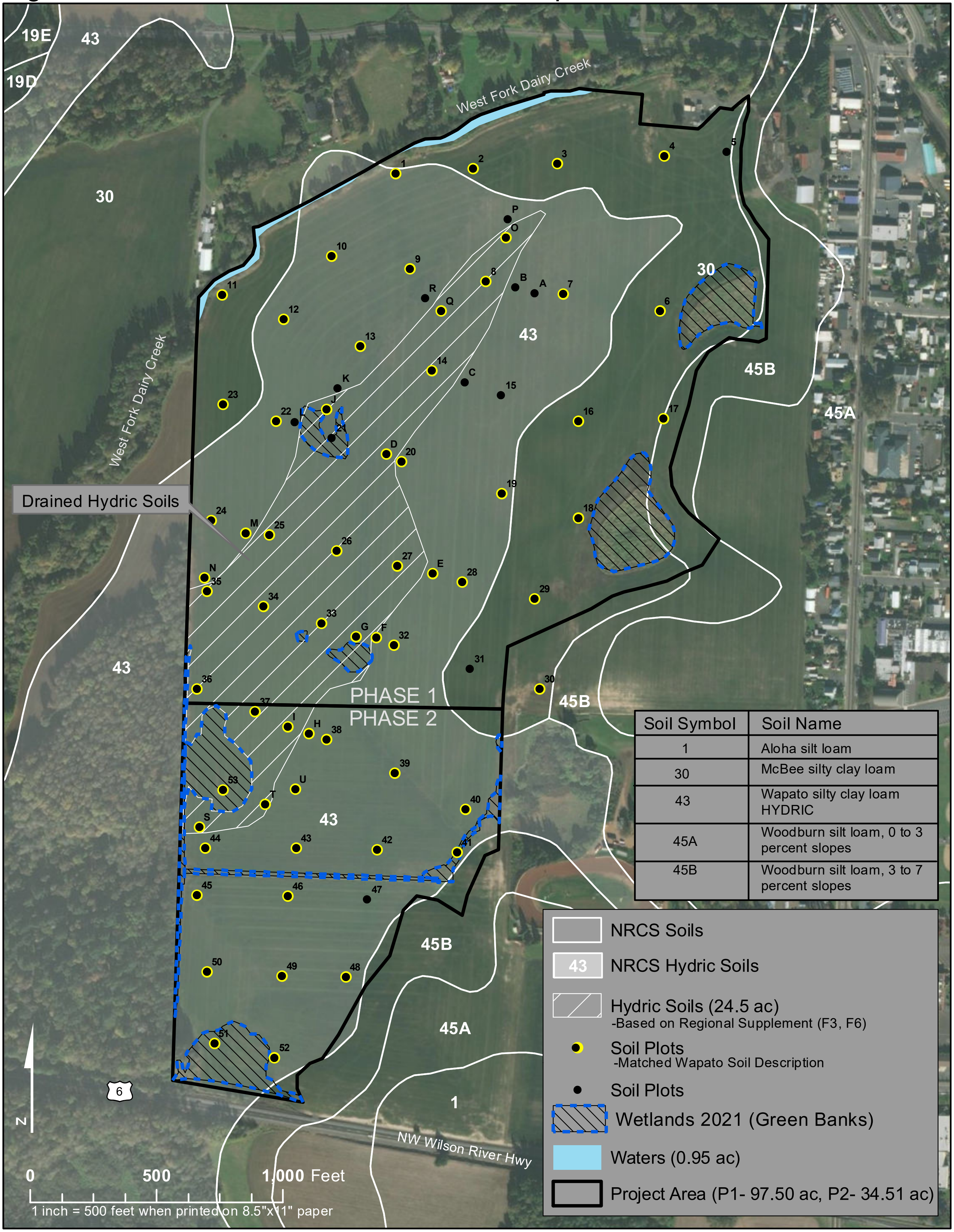
Figure 4: Baseline Soils and NRCS Soils Map



Soil Symbol	Soil Name
1	Aloha silt loam
30	McBee silty clay loam
43	Wapato silty clay loam HYDRIC
45A	Woodburn silt loam, 0 to 3 percent slopes
45B	Woodburn silt loam, 3 to 7 percent slopes

Soils layer downloaded from NRCS Web Soil Survey.
https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 4. Baseline Hydric Soils and NRCS Soils Map 220107.mxd

Map created by Miles Eubanks.
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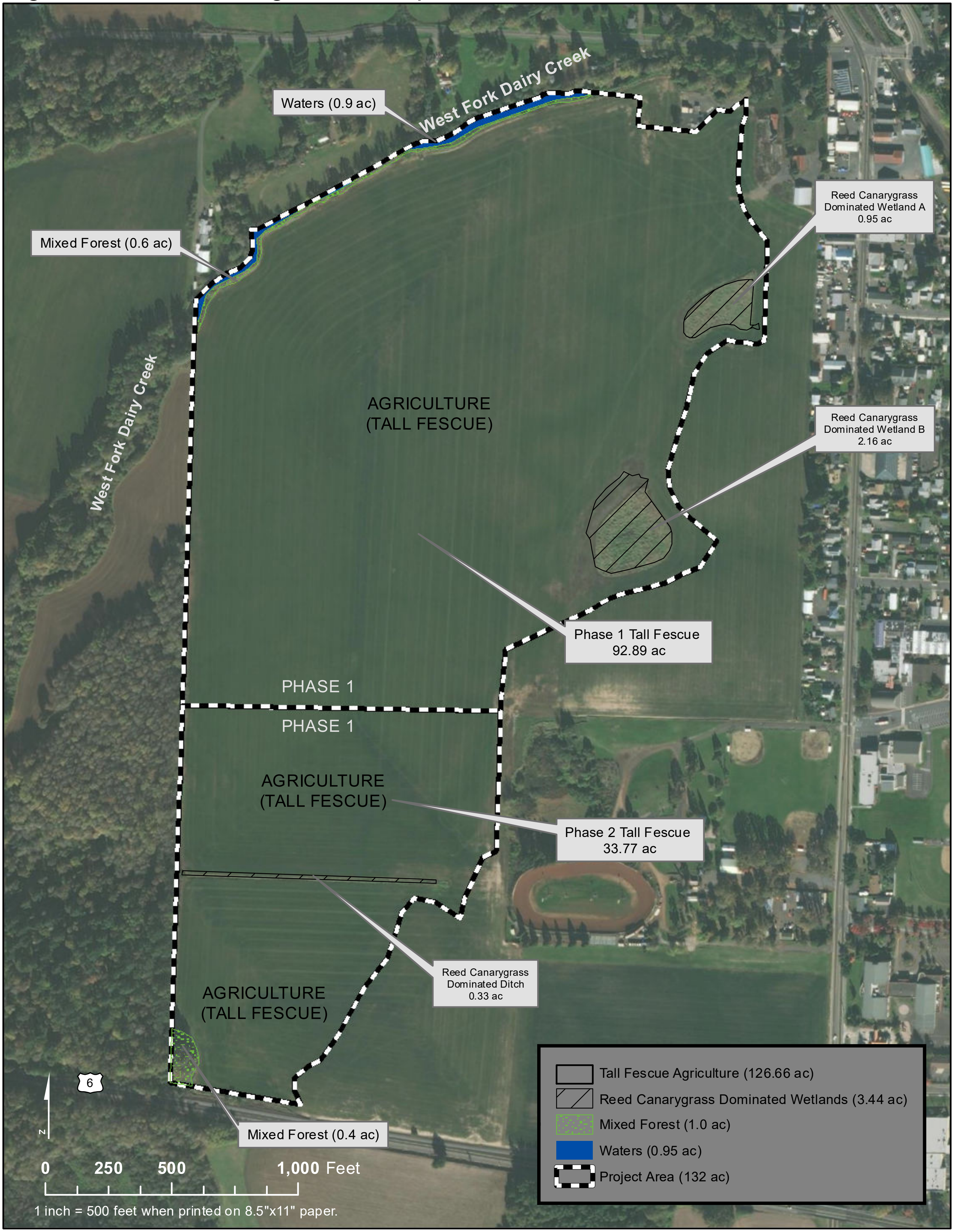
Figure 5: Baseline Vegetation Map



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrumen\2022_January_DRAFT_Instrument Maps\mxds\Figure 5. Baseline Vegetation Map 220202.mxd

Map created by Miles Eubanks.
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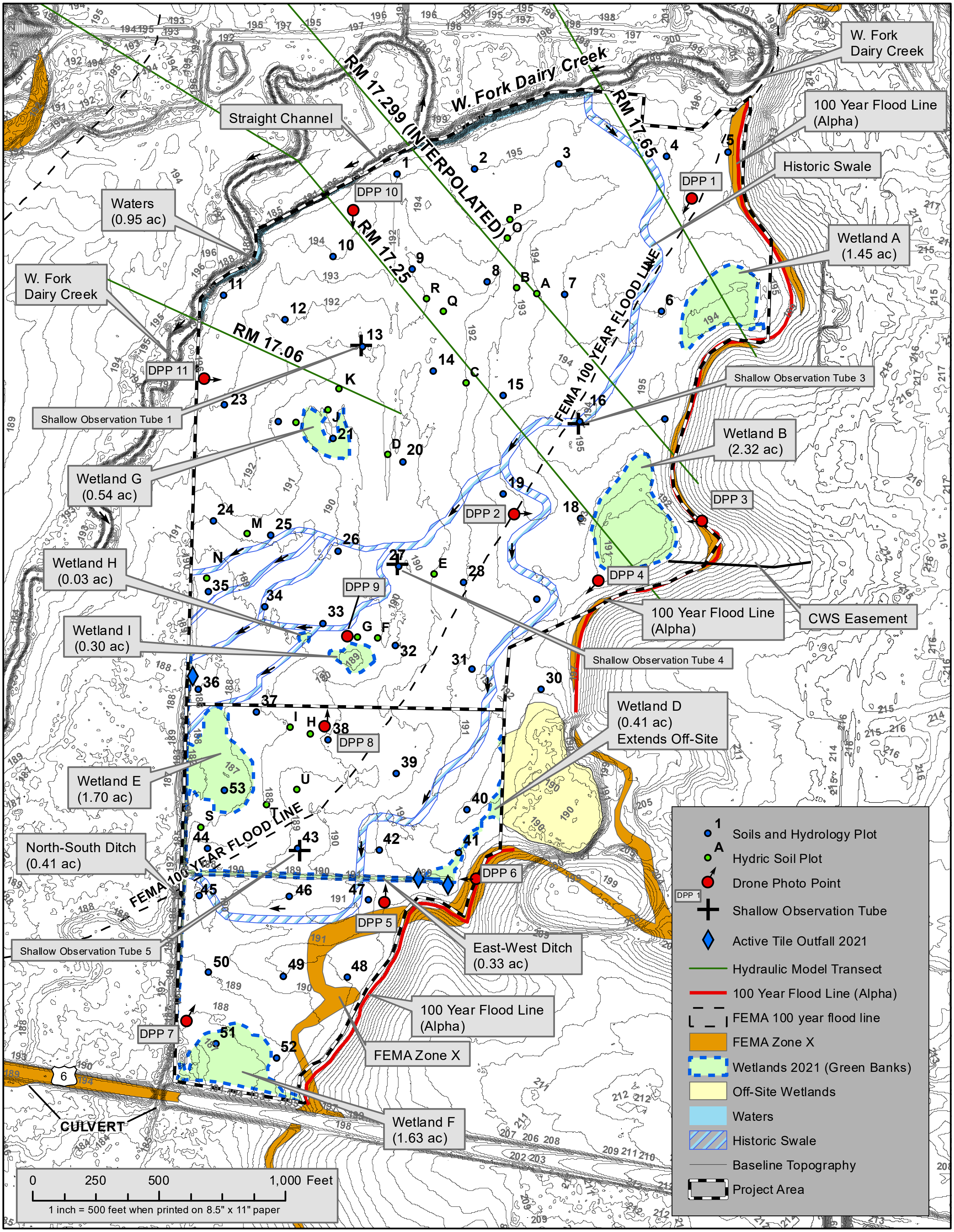
Figure 6: Baseline Hydrology Study Map



Waters Delineated by Green Banks LLC 2020.
Wetlands Delineated by PHS 2019
100 year flood plain line surveyed by
Alpha Technical Group 2004

Wetland Boundaries Delineated by Green Banks LLC 2021.
\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\
Figure 6. Baseline Hydrology Study Map 220113.mxd

Map created by Miles Eubanks.
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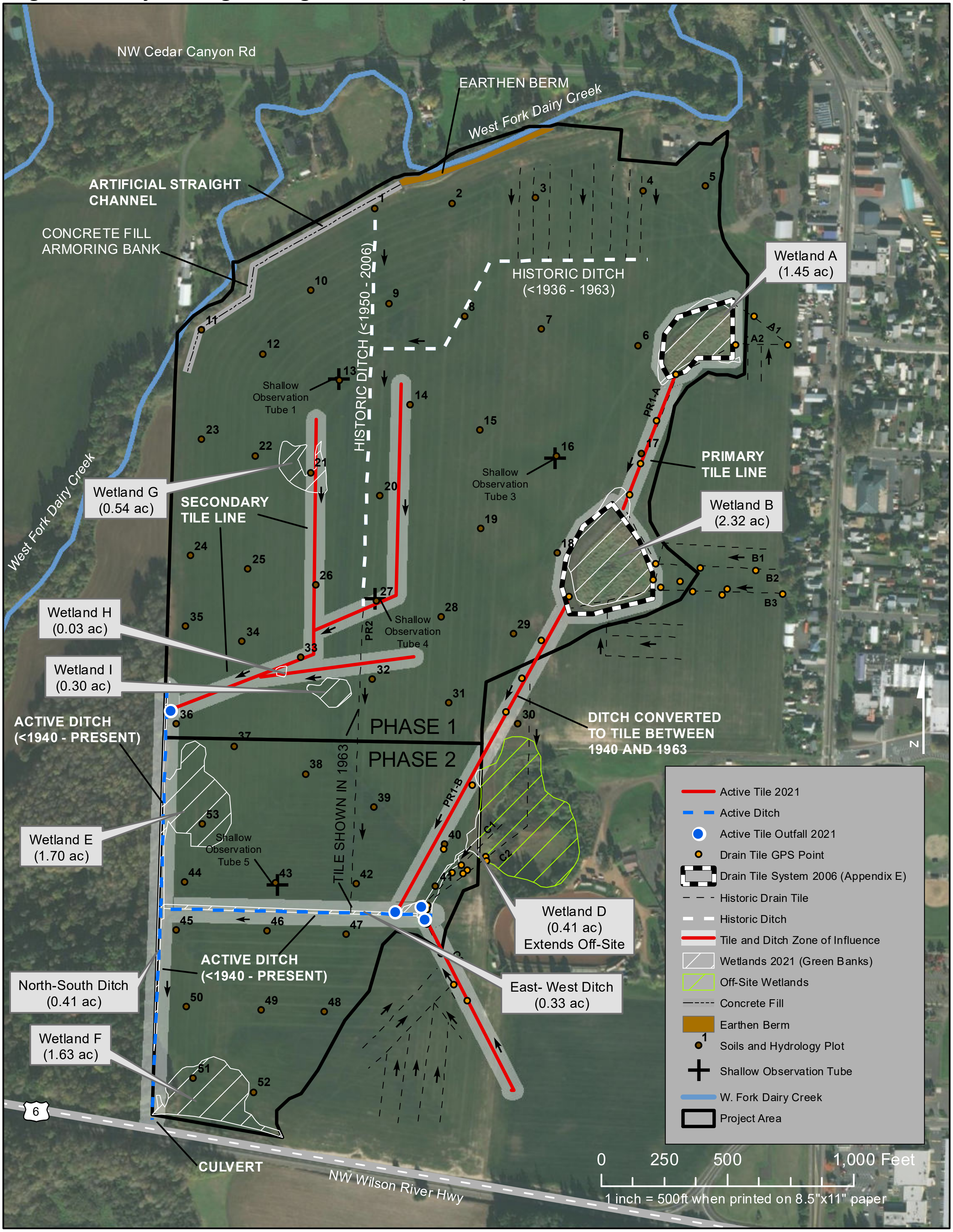
Figure 7: Hydrologic Degradation Map



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Drain Tile System from 2006 Tiling Map - Hostetler

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 7. Hydrologic Degradation Map 220107.mxd

Map created by Miles Eubanks. Ver. 1.22

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Figure 8a: Aerial Photography

May 2019

Aerial photograhy provided by Google Earth.

\\gb-server\GB-Network\wetland banking\washington county\
Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\
mxds\Figure 8a. Aerial Photo 2019 220107.mxd

Map created by Miles Eubanks.
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Figure 8b: Aerial Photography

February 1968

Aerial photograhy provided by US Army Corps of Engineers.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 8b. Aerial Photo 1968 220107.mxd

Map created by Miles Eubanks.
Ver. 1.22

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Figure 8c: Aerial Photography

August 1940

Aerial photograhy provided by the US Army Corps of Engineers.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 8c. Aerial Photo 1940 220107.mxd

Map created by Miles Eubanks.
Ver. 1.22

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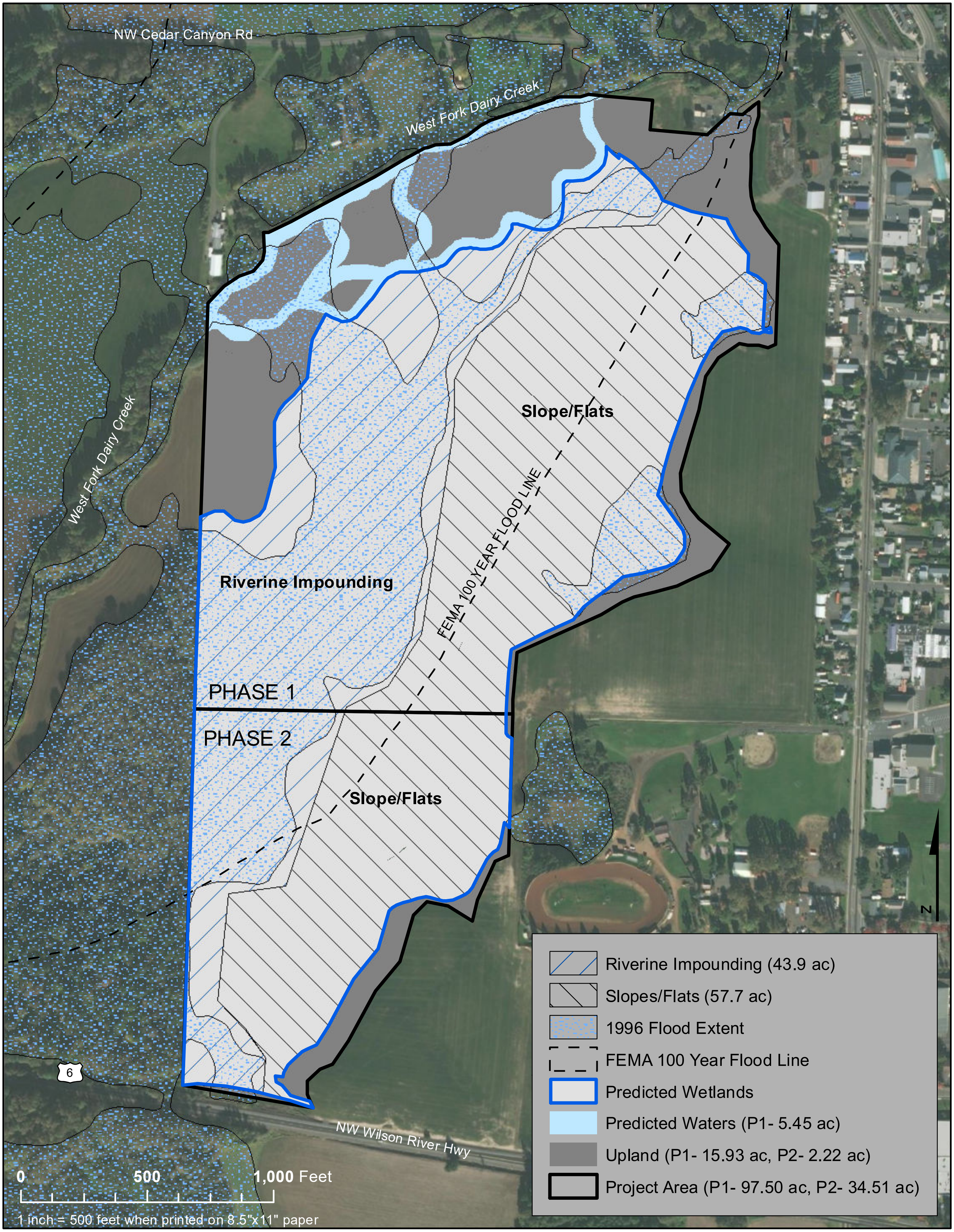
Figure 9: Proposed Hydrogeomorphic Method (HGM) Class Map



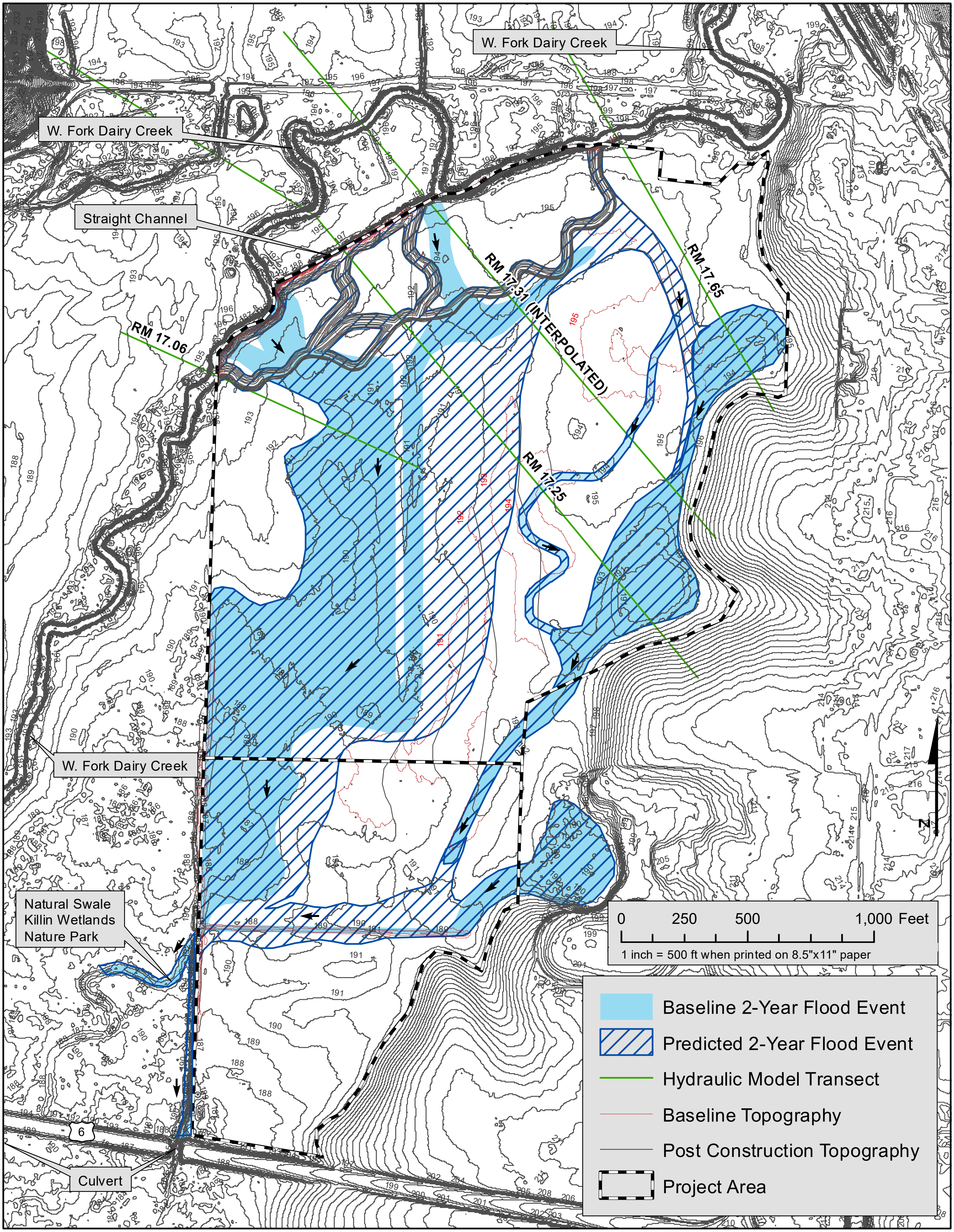
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
1996 Flood Extent layer provided by RLIS.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 9. Proposed HGM Class Map 220701.mxd

Map created by Miles Eubanks.
Ver. 1.22

greenbanks

Figure 10: 2-Year Flood Event Baseline Versus Predicted



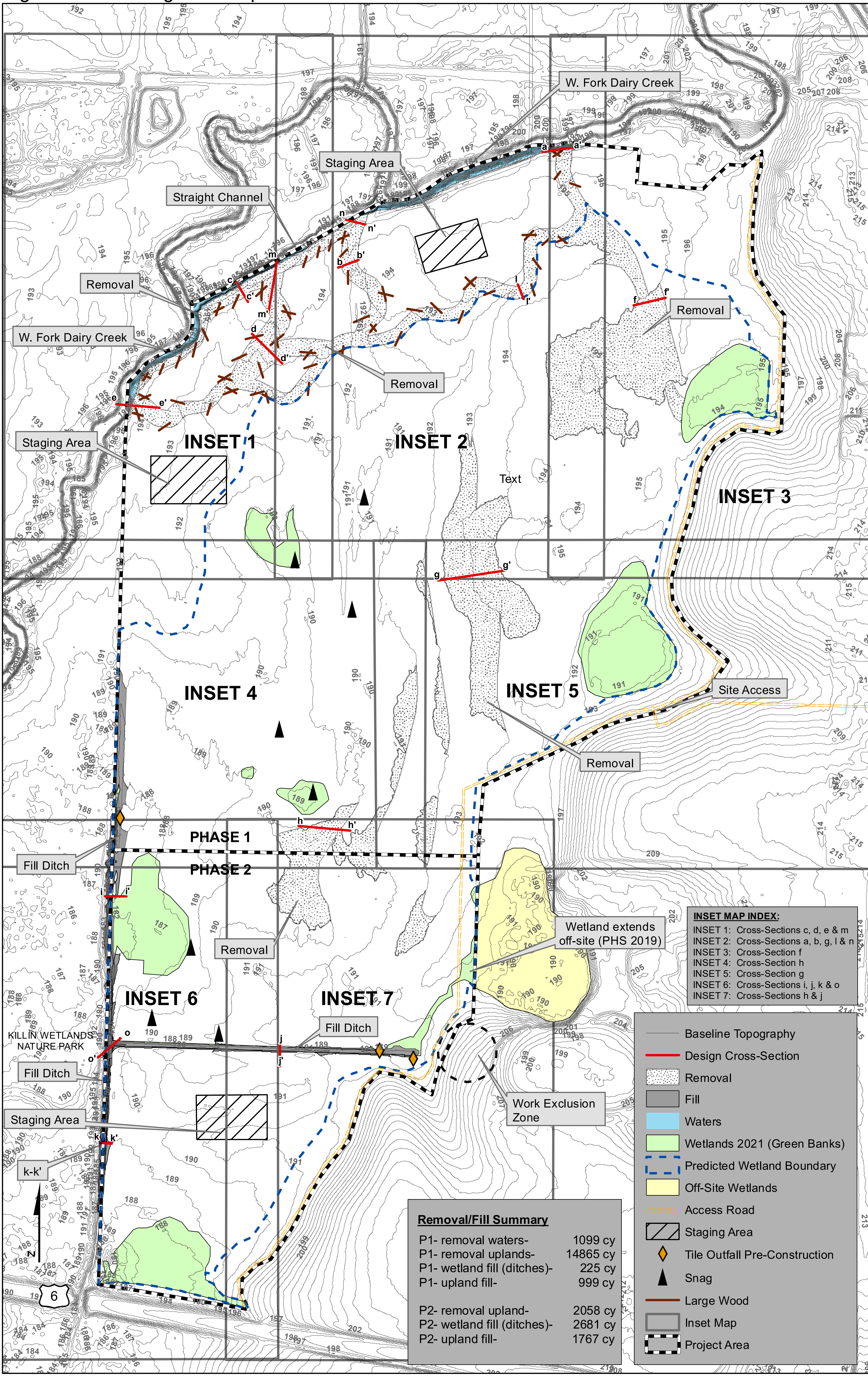
Contours derrived from LiDAR provided by the Oregon Department of Geology and Mineral Industries (DOGAMI). Ground elevations surveyed in stream channel and ditches where LiDAR inaccuracies were found.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 10. 2 Year Flood Event Map 220107.mxd

Map Created by Miles Eubanks
Ver. 1.22

greenbanks

Figure 11a: Grading Plan Map - Overview



0 300 600 Feet

1 inch = 300 feet when printed on 11"x17" paper

Contours derrived from LiDAR provided by Oregon Department of Geology and Mineral Industries (DOGAMI). Wetlands delineated by Green Banks LLC 2021 and by Pacific Habitat Services 2019.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 11a. Grading Plan Map 220201.mxd

Map created by Miles Eubanks. Ver. 1.22

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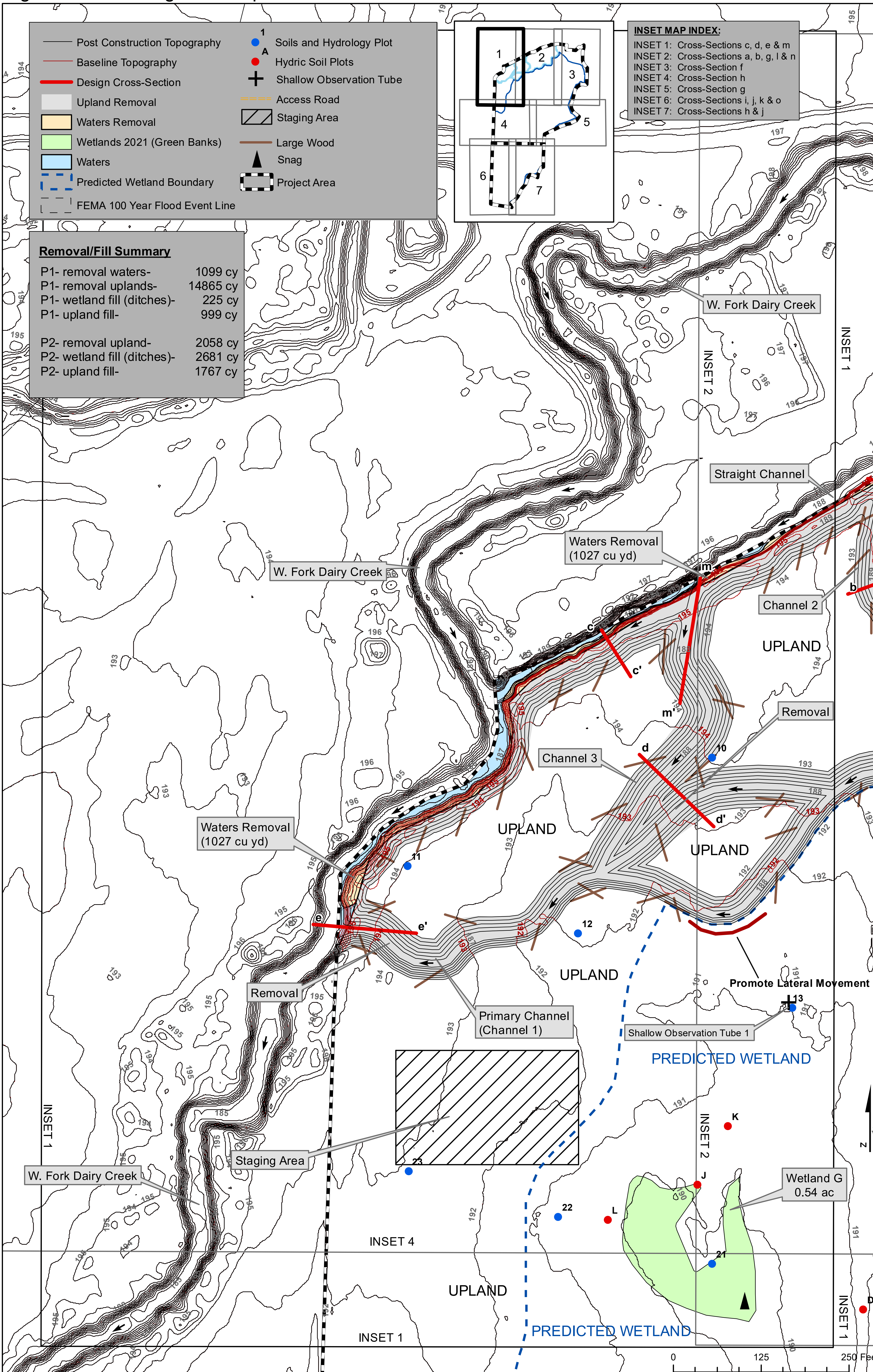
Figure 11b. Grading Plan Map - Inset 1



On-the-ground survey of the 100 year flood plain line was carried out by Alpha Community Developement on November 8, 2004.

Contours derrived from LiDAR provided by Oregon Department of Geology and Mineral Industries (DOGAMI). Wetlands delineated by Green Banks LLC 2021 and by Pacific Habitat Services 2019.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 11b. Grading Plan Map Inset 1 220107.mxd

Map created by Miles Eubanks. Ver. 1.22

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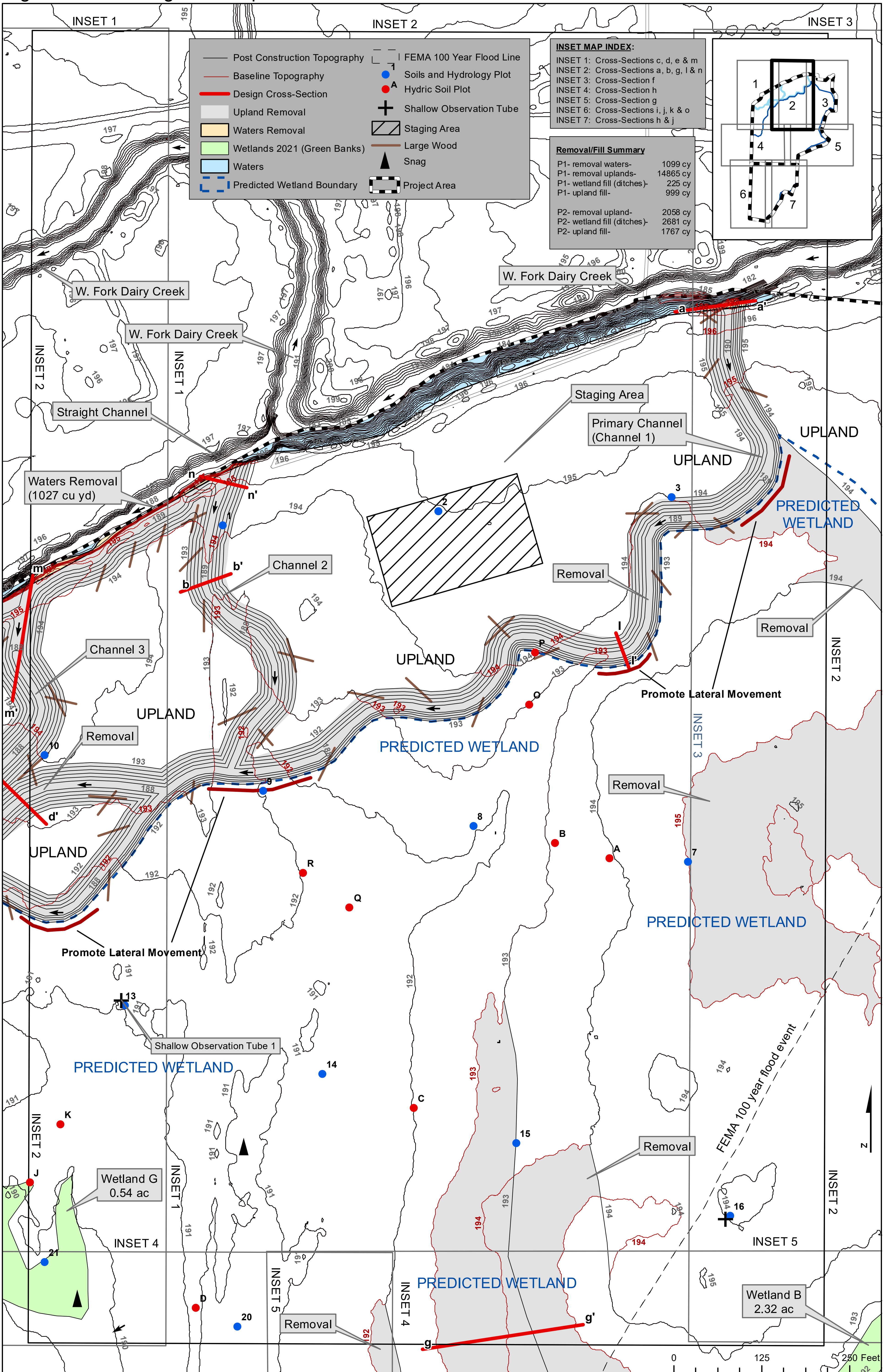
Figure 11c. Grading Plan Map - Inset 2



On-the-ground survey of the 100 year flood plain line was carried out by Alpha Community Developement on November 8, 2004.

Contours derrived from LiDAR provided by Oregon Department of Geology and Mineral Industries (DOGAMI). Wetlands delineated by Green Banks LLC 2021 and by Pacific Habitat Services 2019.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 11c. Grading Plan Map Inset 2 220107.mxd

Map created by Miles Eubanks. Ver. 1.22

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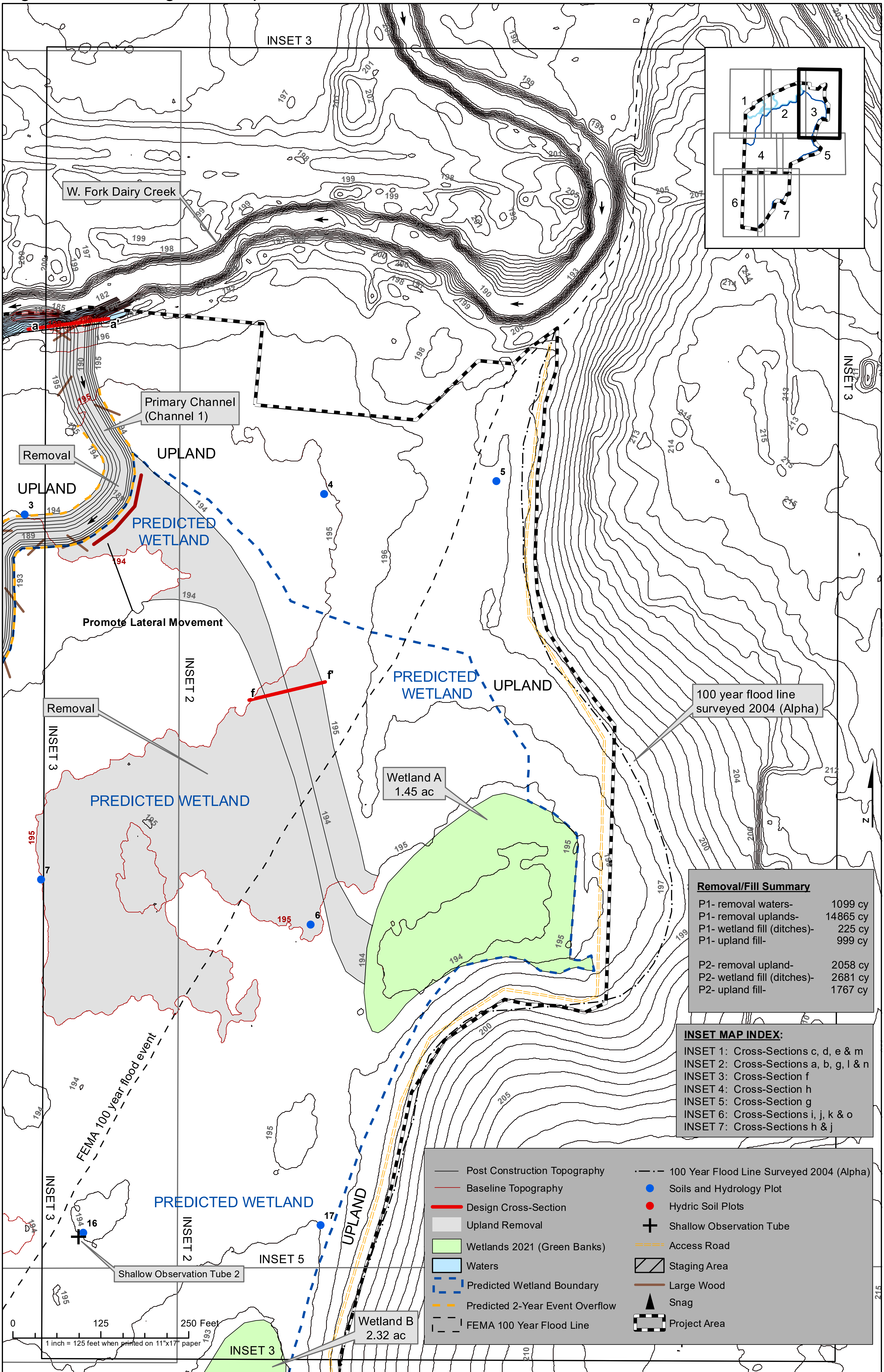
Figure 11d. Grading Plan Map - Inset 3



On-the-ground survey of the 100 year flood plain line was carried out by Alpha Community Developement on November 8, 2004.

Contours derrived from LiDAR provided by Oregon Department of Geology and Mineral Industries (DOGAMI). Wetlands delineated by Green Banks LLC 2021 and by Pacific Habitat Services 2019.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 11d. Grading Plan Map Inset 3 220107.mxd

Map created by Miles Eubanks. Ver. 1.22

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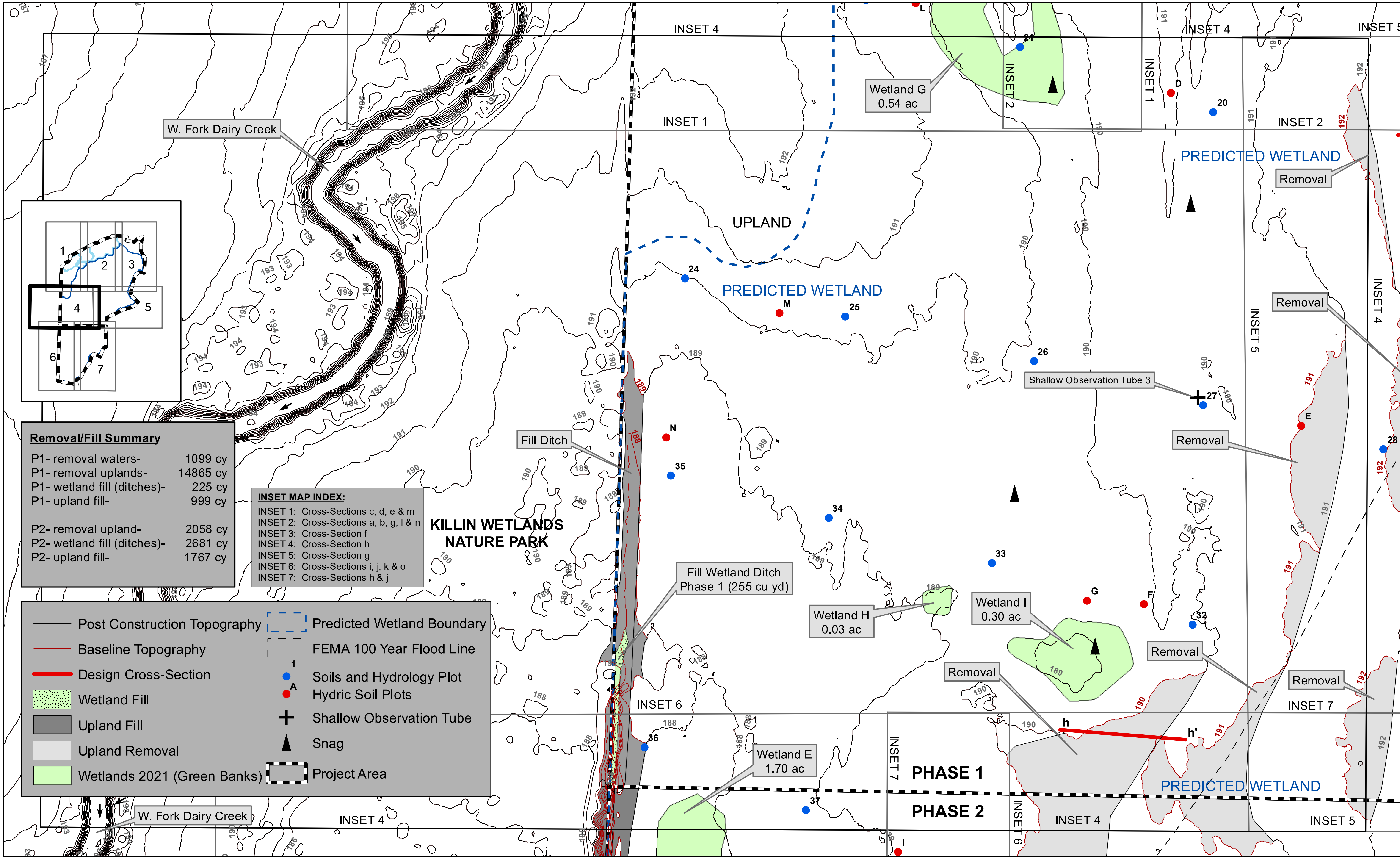
Figure 11e. Grading Plan Map - Inset 4



On-the-ground survey of the 100 year flood plain line was carried out by Alpha Community Developement on November 8, 2004.

Contours derrived from LiDAR provided by Oregon Department of Geology and Mineral Industries (DOGAMI).

Wetlands delineated by Green Banks LLC 2021 and by Pacific Habitat Services 2019.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 11e. Grading Plan Map Inset 4 220107.mxd

Map created by Miles Eubanks. Ver. 1.22

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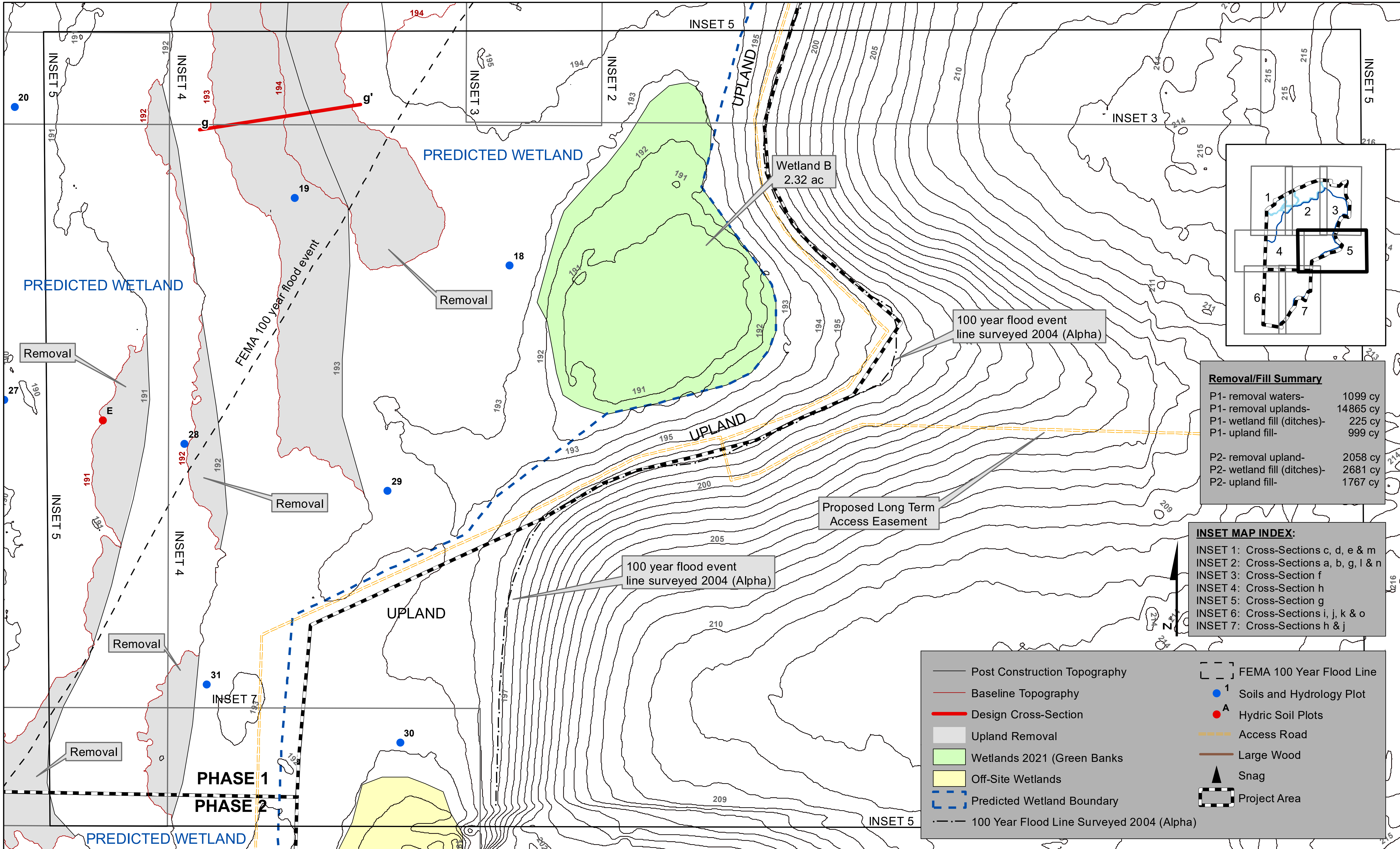
Figure 11f. Grading Plan Map - Inset 5



On-the-ground survey of the 100 year flood plain line was carried out by Alpha Community Developement on November 8, 2004.

Contours derrived from LiDAR provided by Oregon Department of Geology and Mineral Industries (DOGAMI).

Wetlands delineated by Green Banks LLC 2021 and by Pacific Habitat Services 2019.

0 125 250 Feet
1 inch = 125 feet when printed on 11"x17" paper

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 11f. Grading Plan Map Inset 5 220107.mxd

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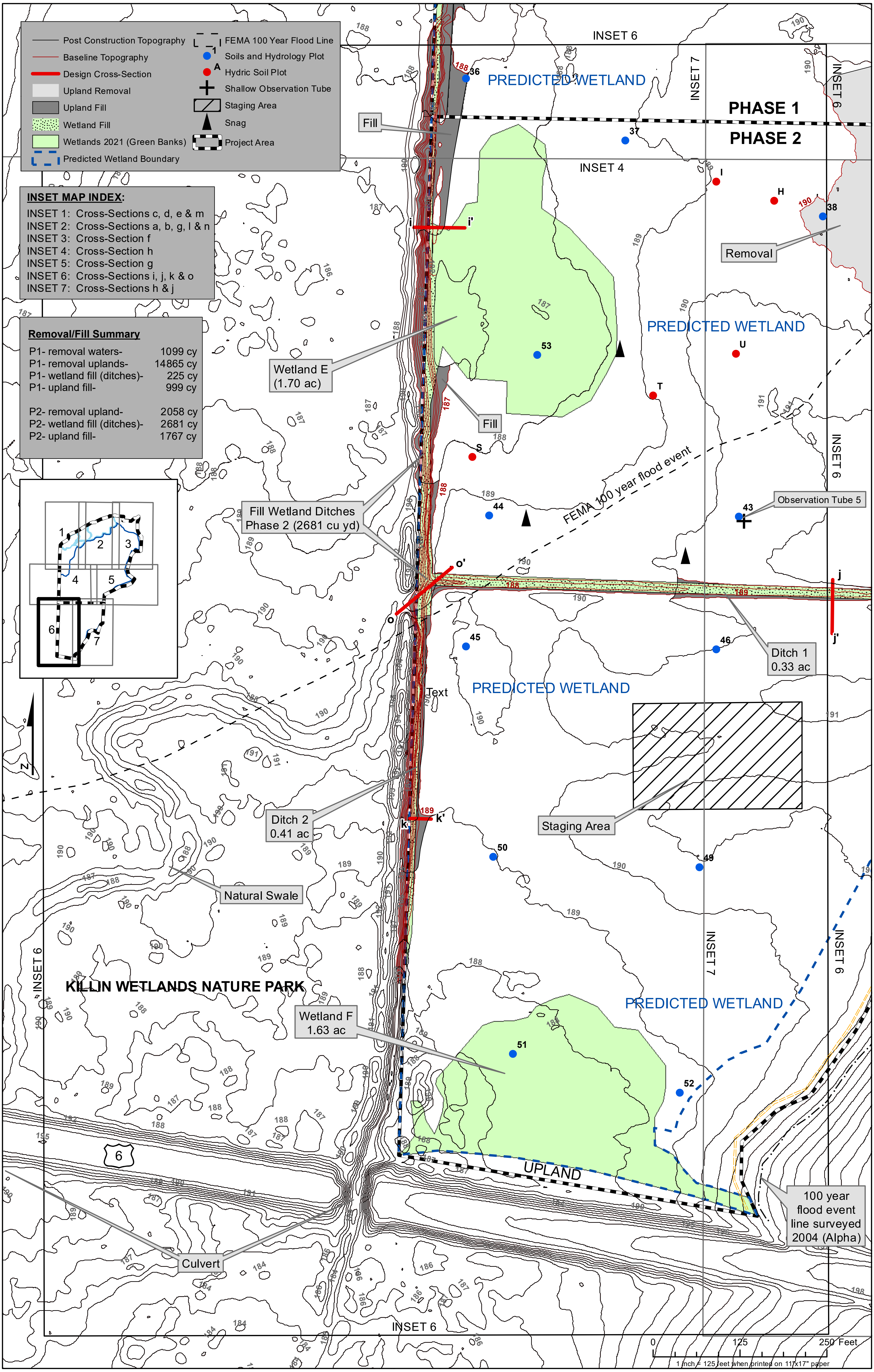
Figure 11g. Grading Plan Map - Inset 6



On-the-ground survey of the 100 year flood plain line was carried out by Alpha Community Developement on November 8, 2004.

Contours derrived from LiDAR provided by Oregon Department of Geology and Mineral Industries (DOGAMI). Wetlands delineated by Green Banks LLC 2021 and by Pacific Habitat Services 2019.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 11g. Grading Plan Map Inset 6 220107.mxd

Map created by Miles Eubanks. Ver. 1.22

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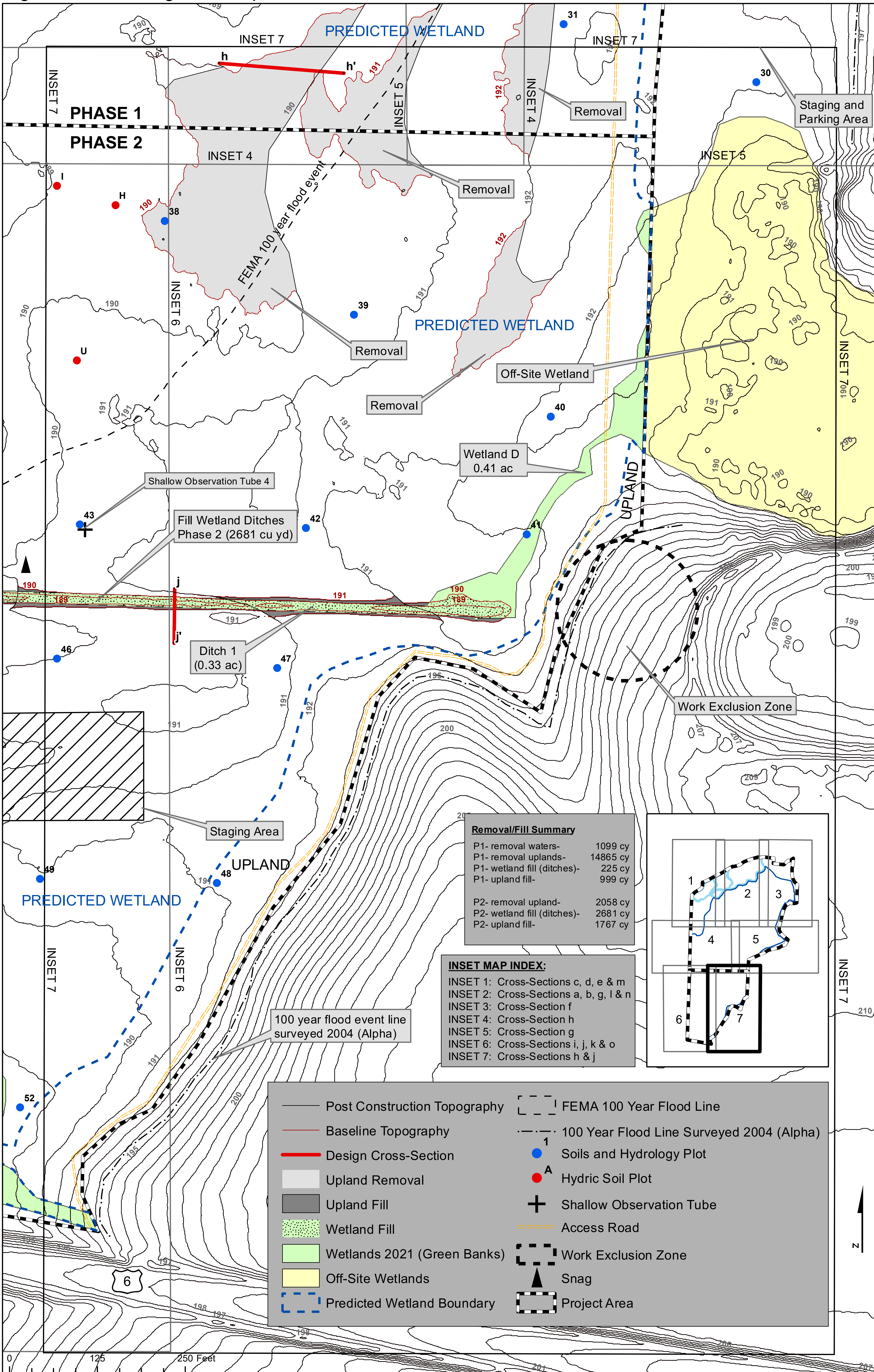
Figure 11h. Grading Plan Map - Inset 7



On-the-ground survey of the 100 year flood plain line was carried out by Alpha Community Developement on November 8, 2004.

Contours derrived from LiDAR provided by Oregon Department of Geology and Mineral Industries (DOGAMI). Wetlands delineated by Green Banks LLC 2021 and by Pacific Habitat Services 2019.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 11h. Grading Plan Map Inset 7 220107.mxd

Map created by Miles Eubanks. Ver. 1.22

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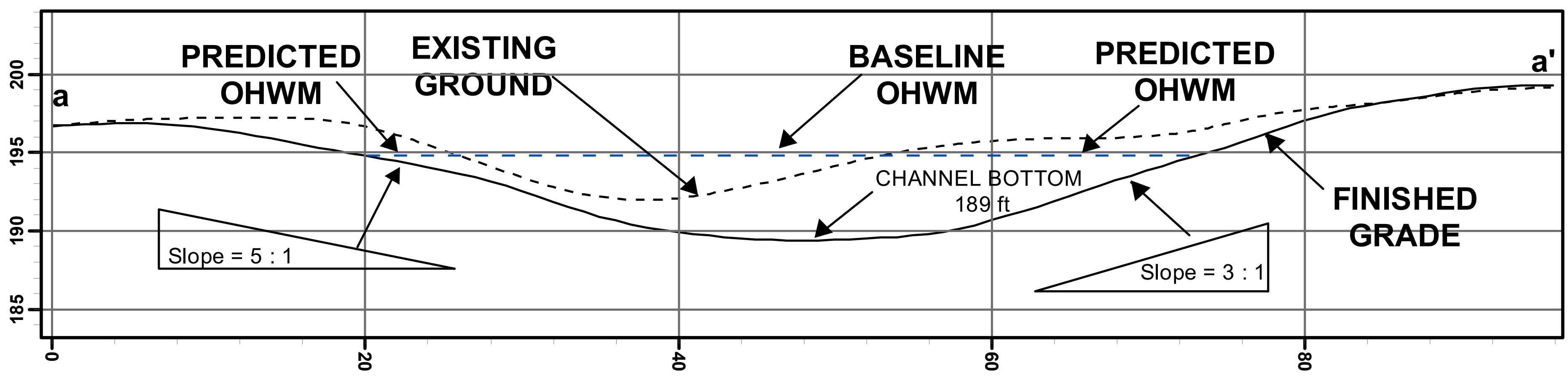
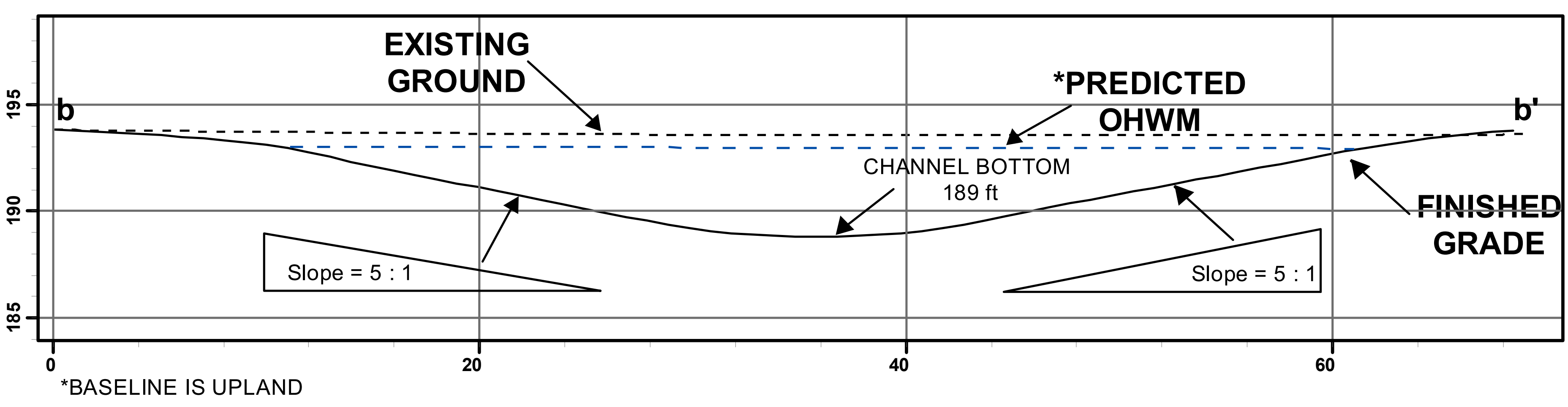
Figure 11: Sheet 1

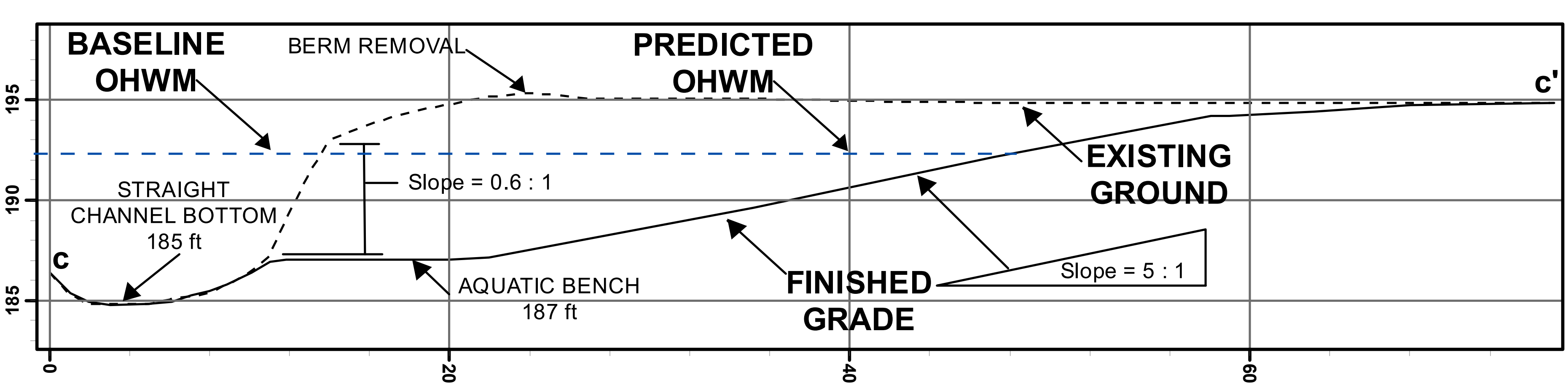
Cross-Section a-a'



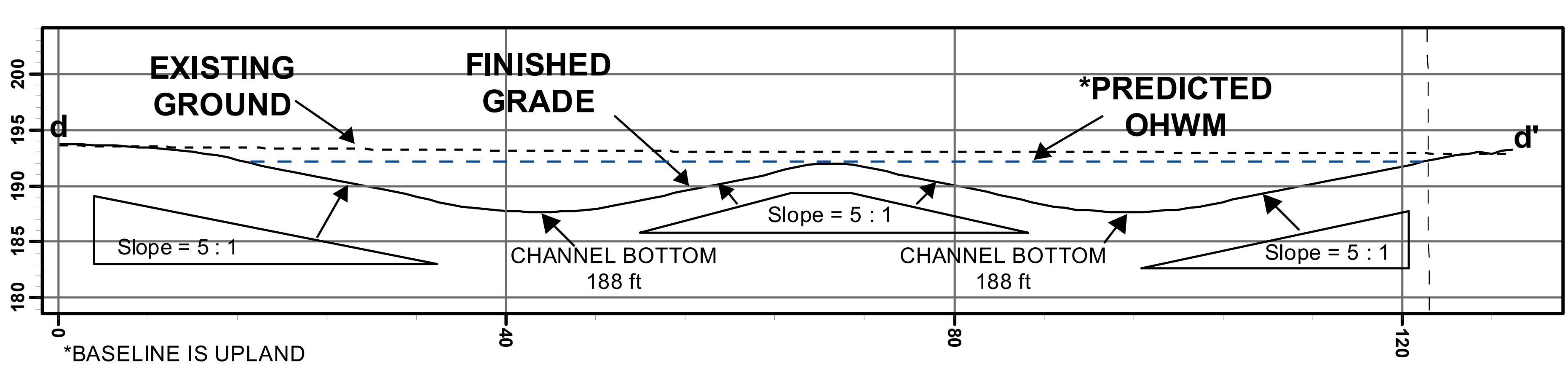
Cross-Section b-b'



Cross-Section c-c'



Cross-Section d-d'



Cross-Section e-e'

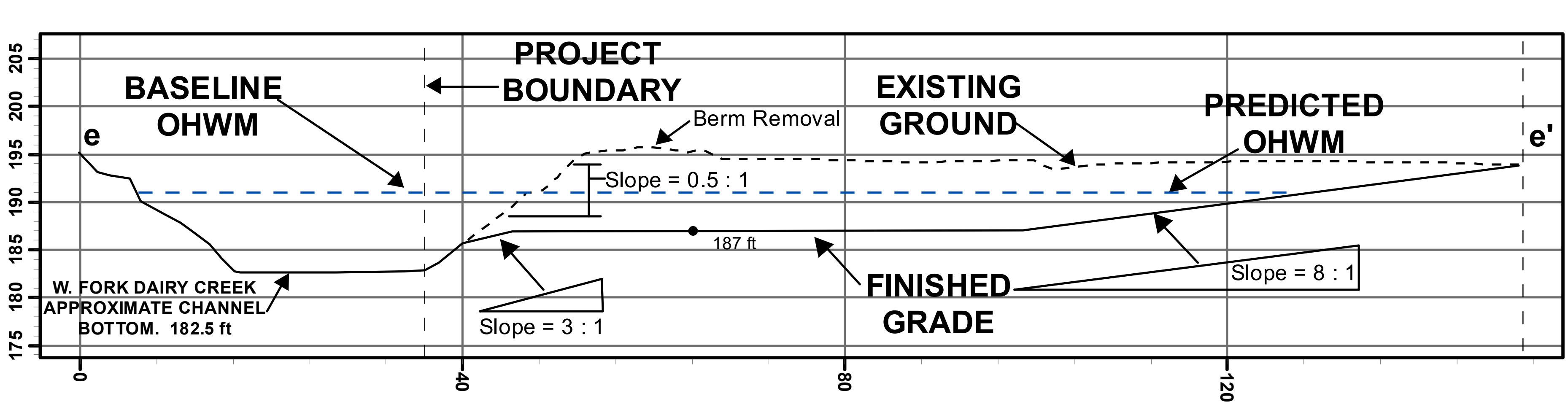


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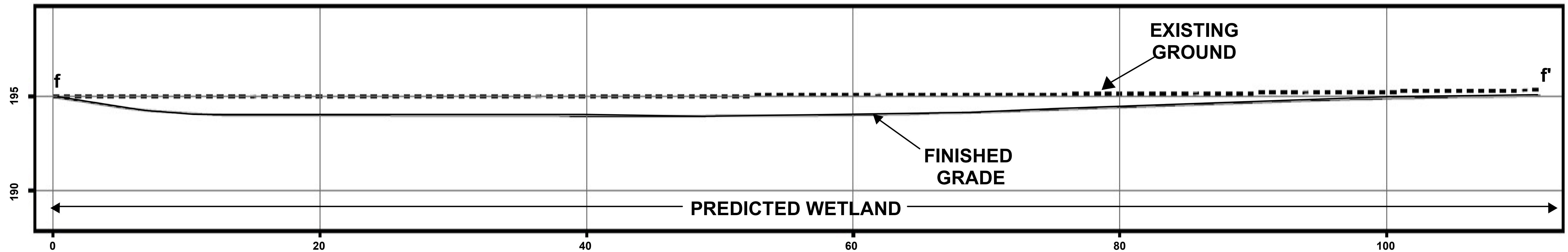
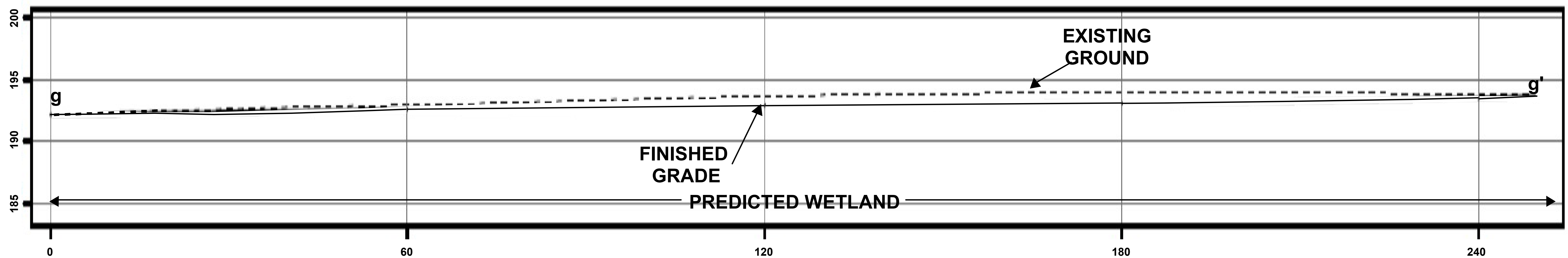
Figure 11: Sheet 2

Cross-Section f-f'



Cross-Section g-g'



Cross-Section h-h'

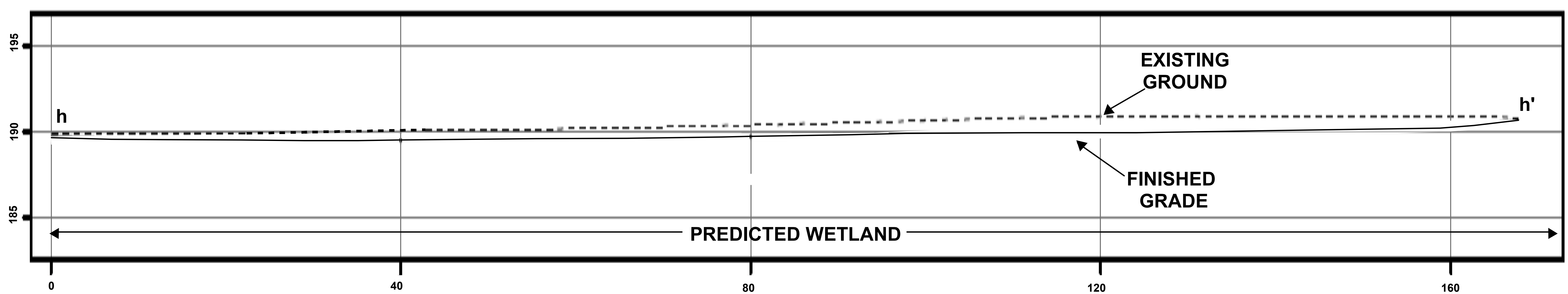


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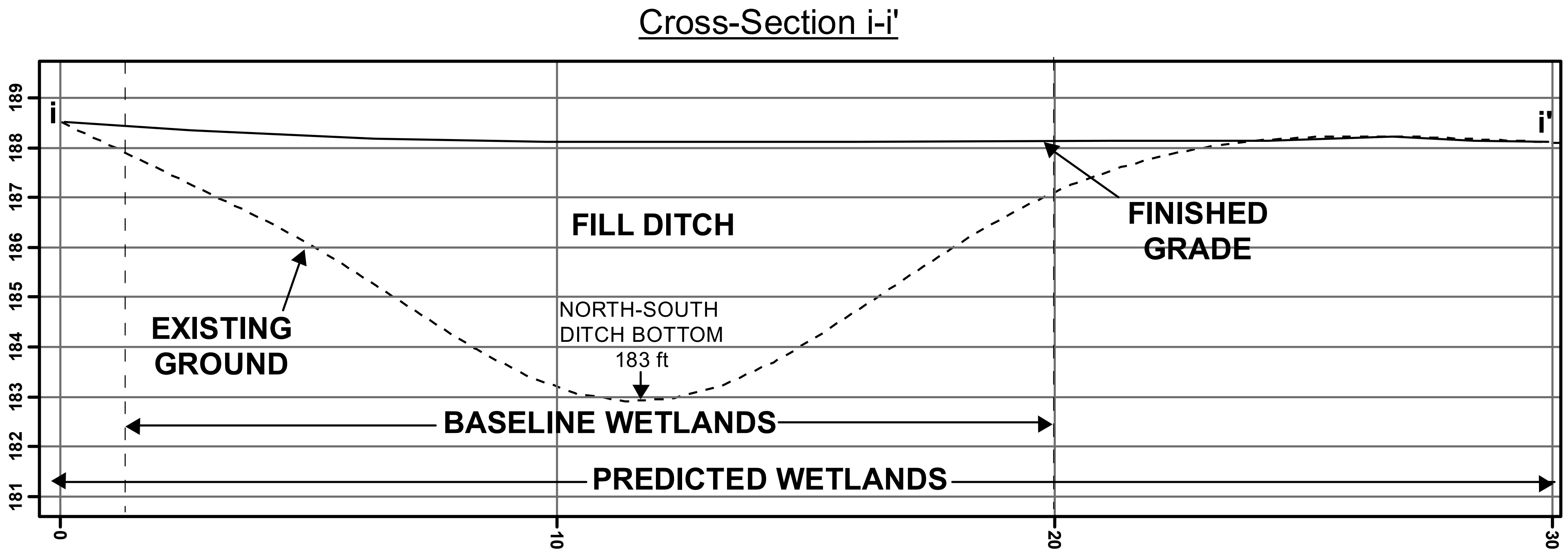
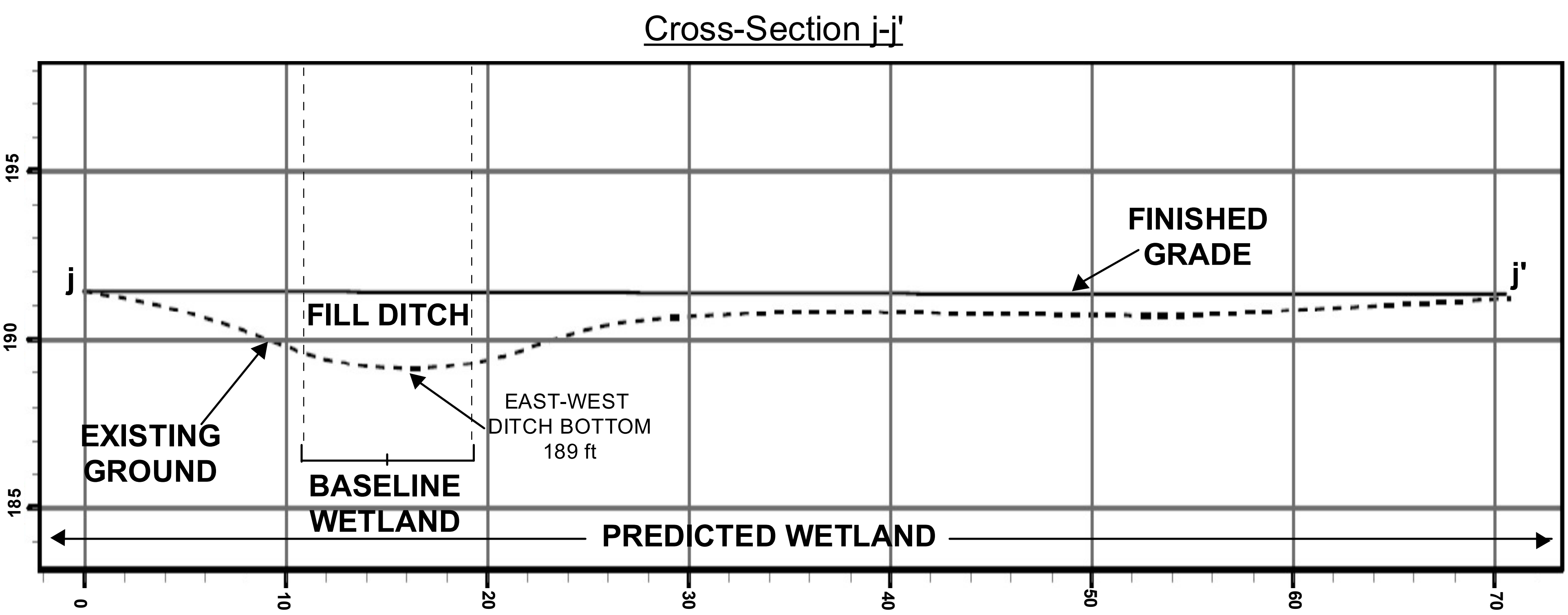
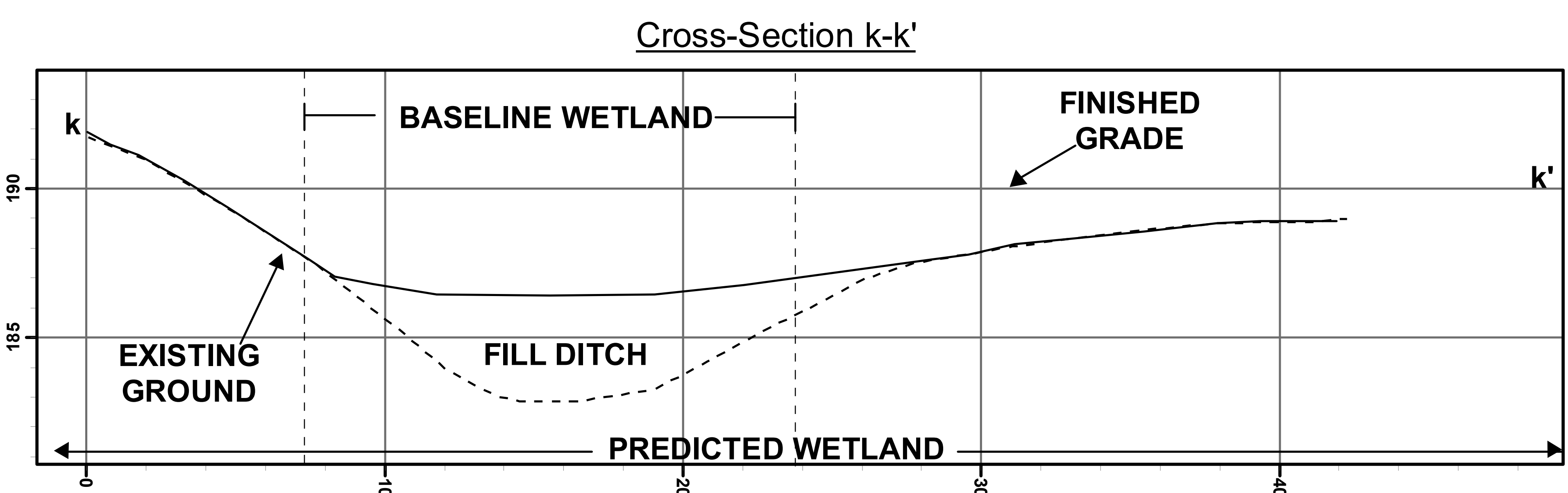
Figure 11: Sheet 3







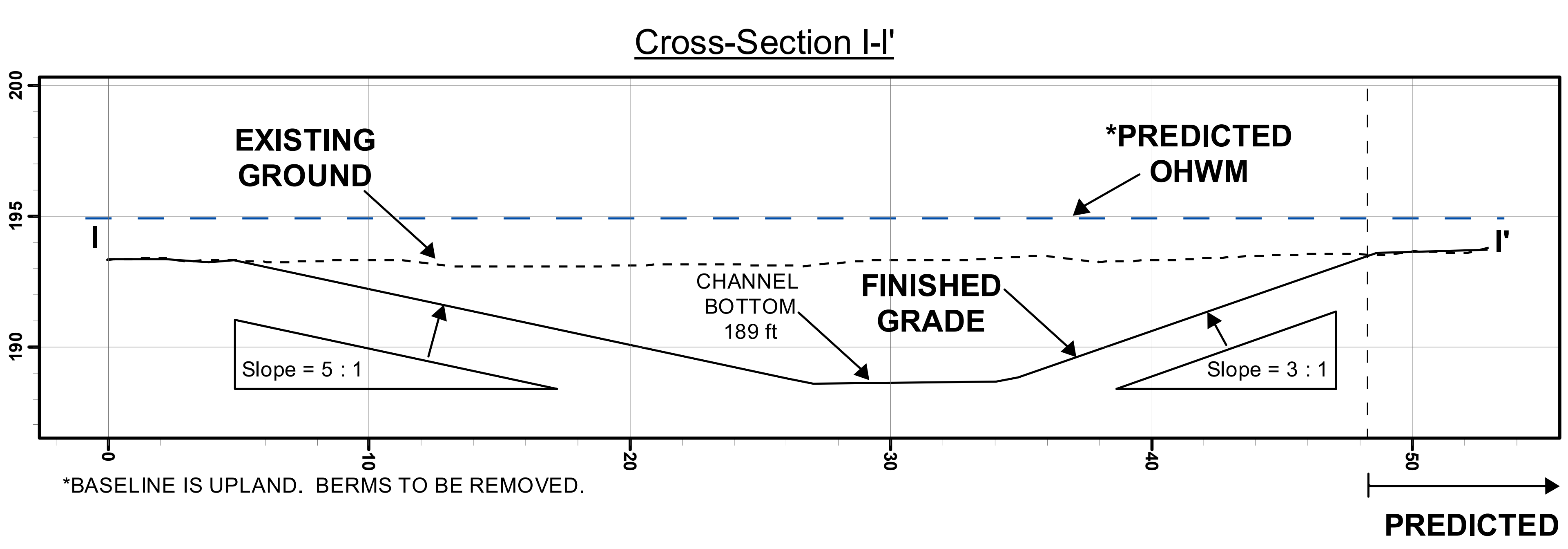
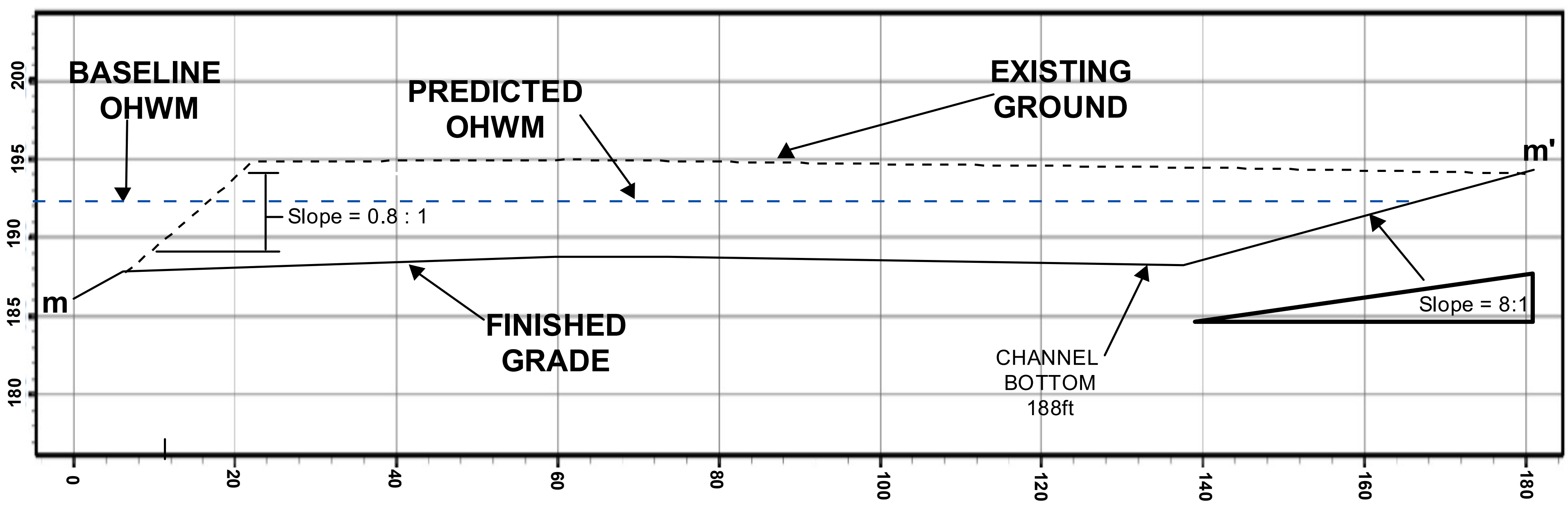
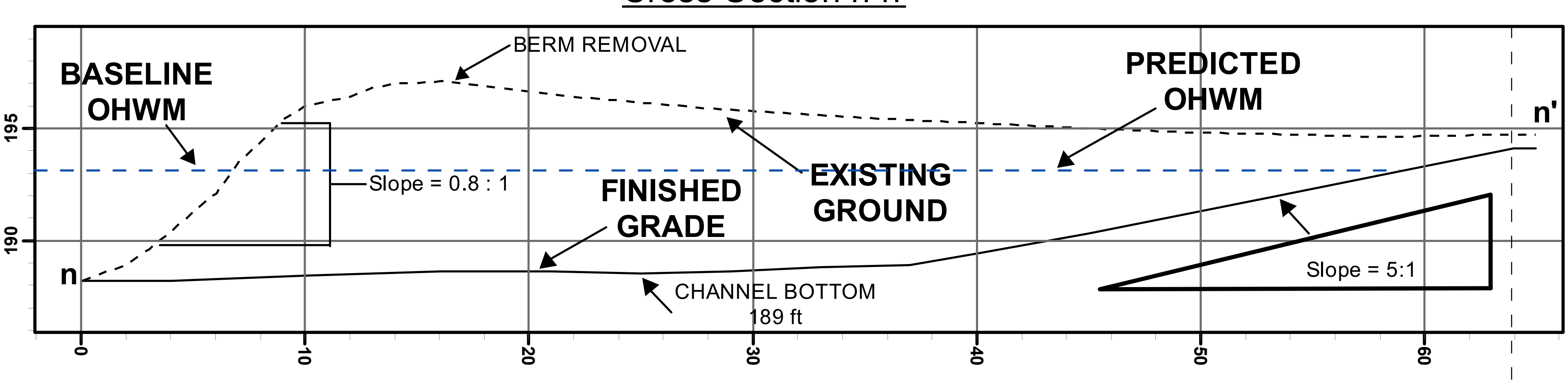


Figure 11. Sheet 4





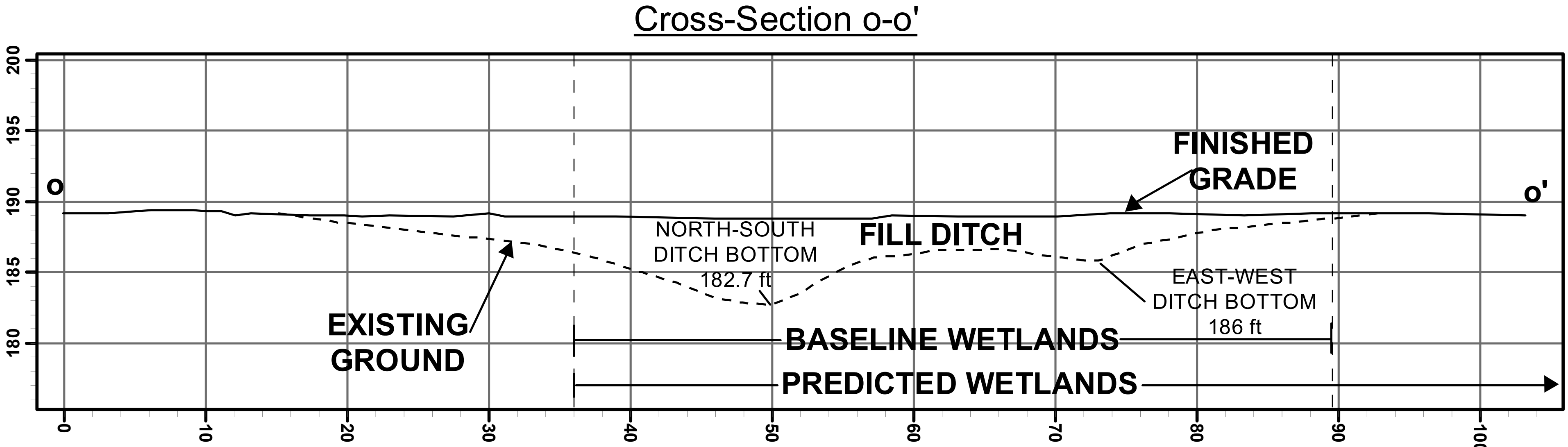
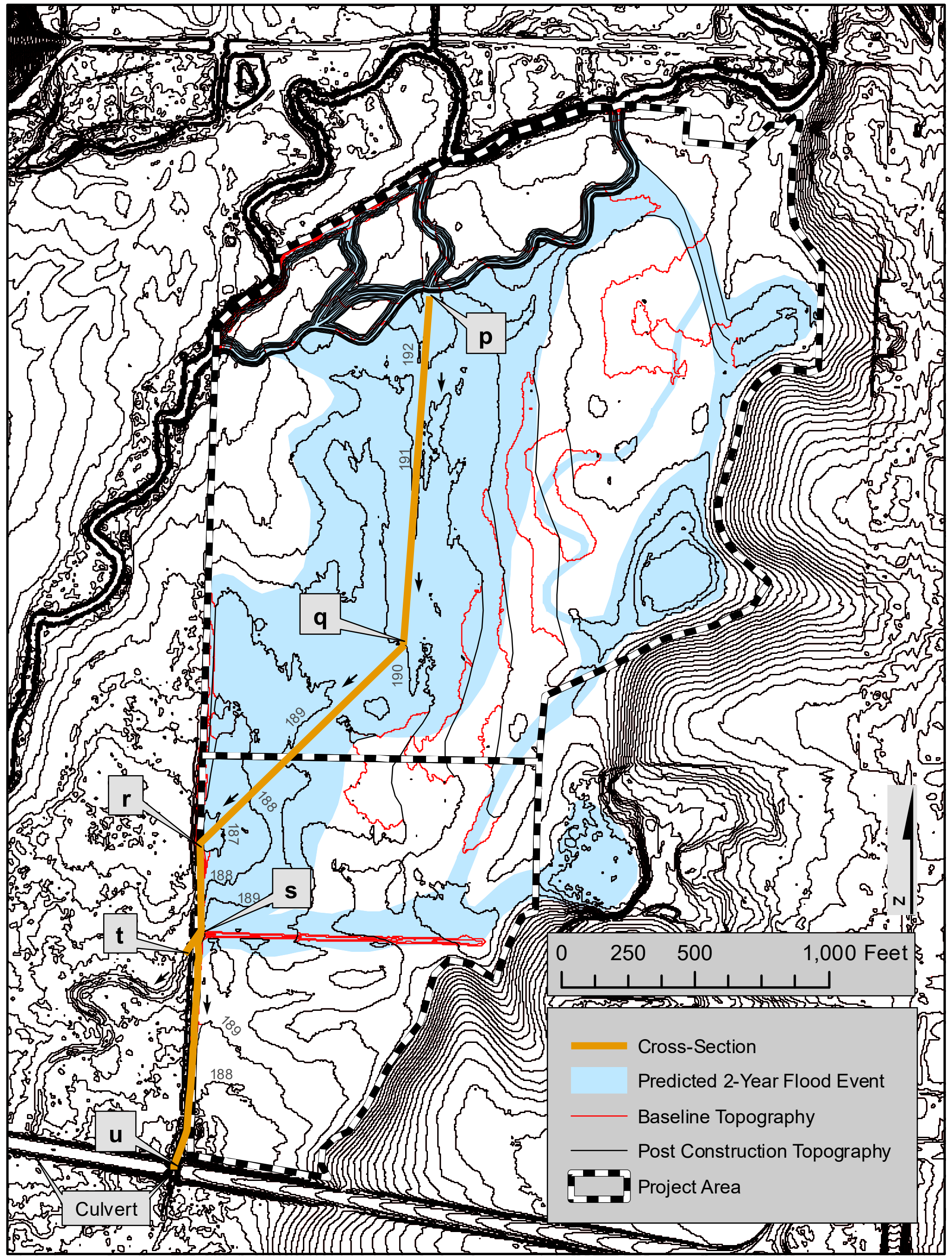
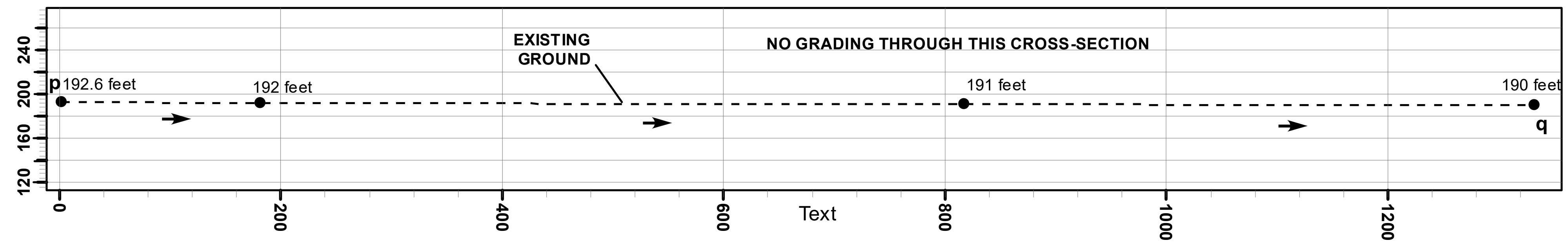


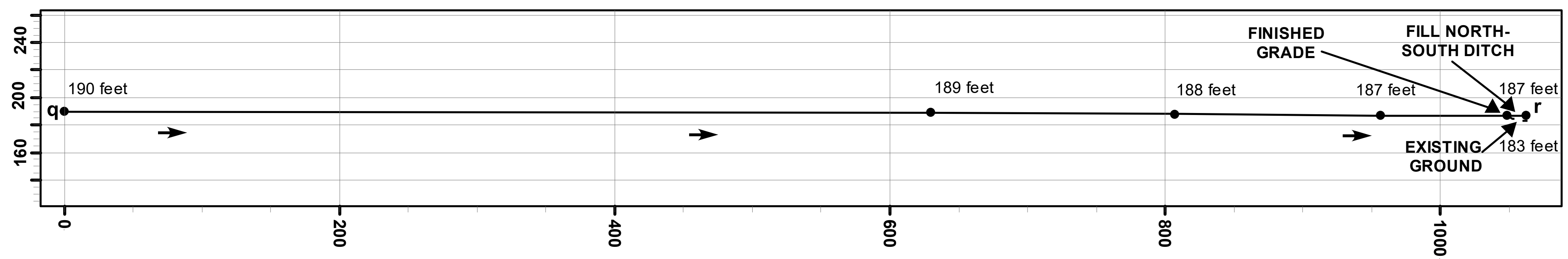
Figure 11i: 2-Year Event Surface Water Flow Map



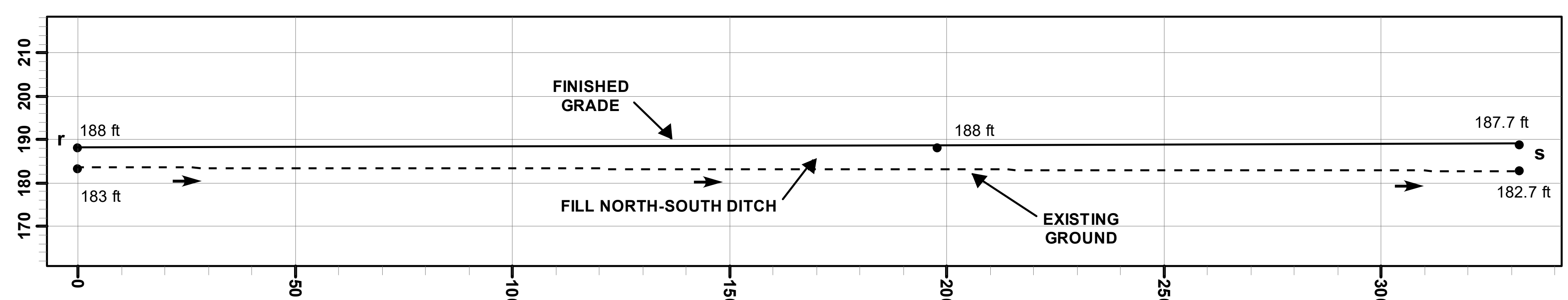
p - q



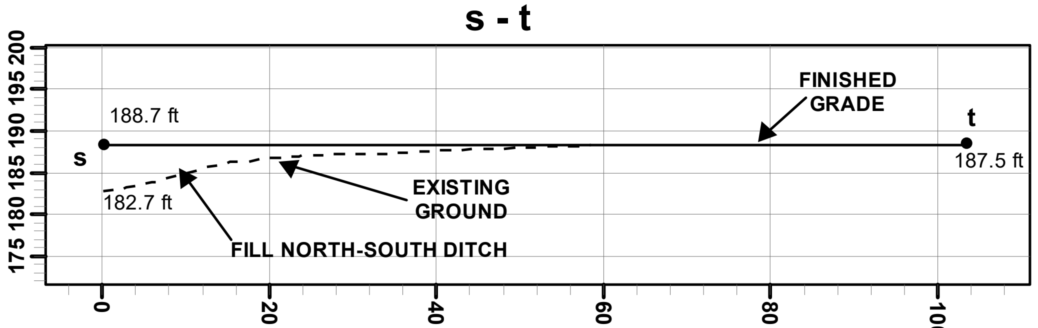
q - r



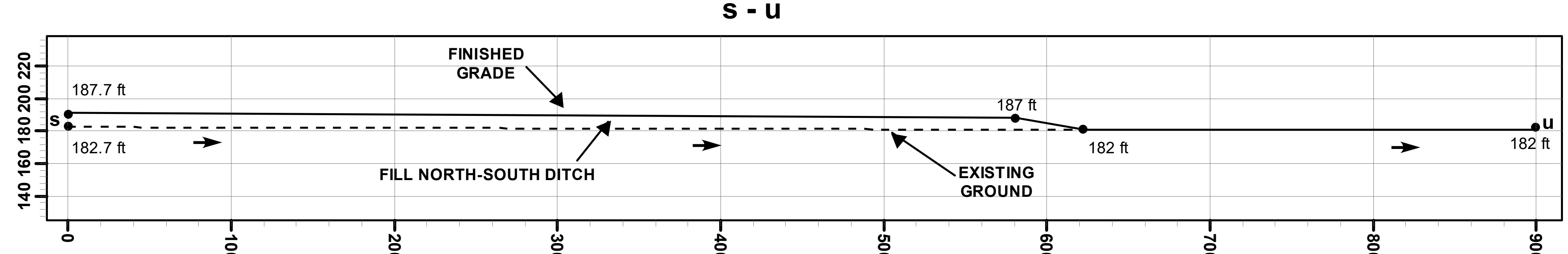
r - s



s - t



s - u



\\gb-server\GB-Network\wetland banking\washington county\
Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\
mxds\Figure 11i. Flow Map 220107.mxd

Map Created by Miles Eubanks
Ver. 1.22

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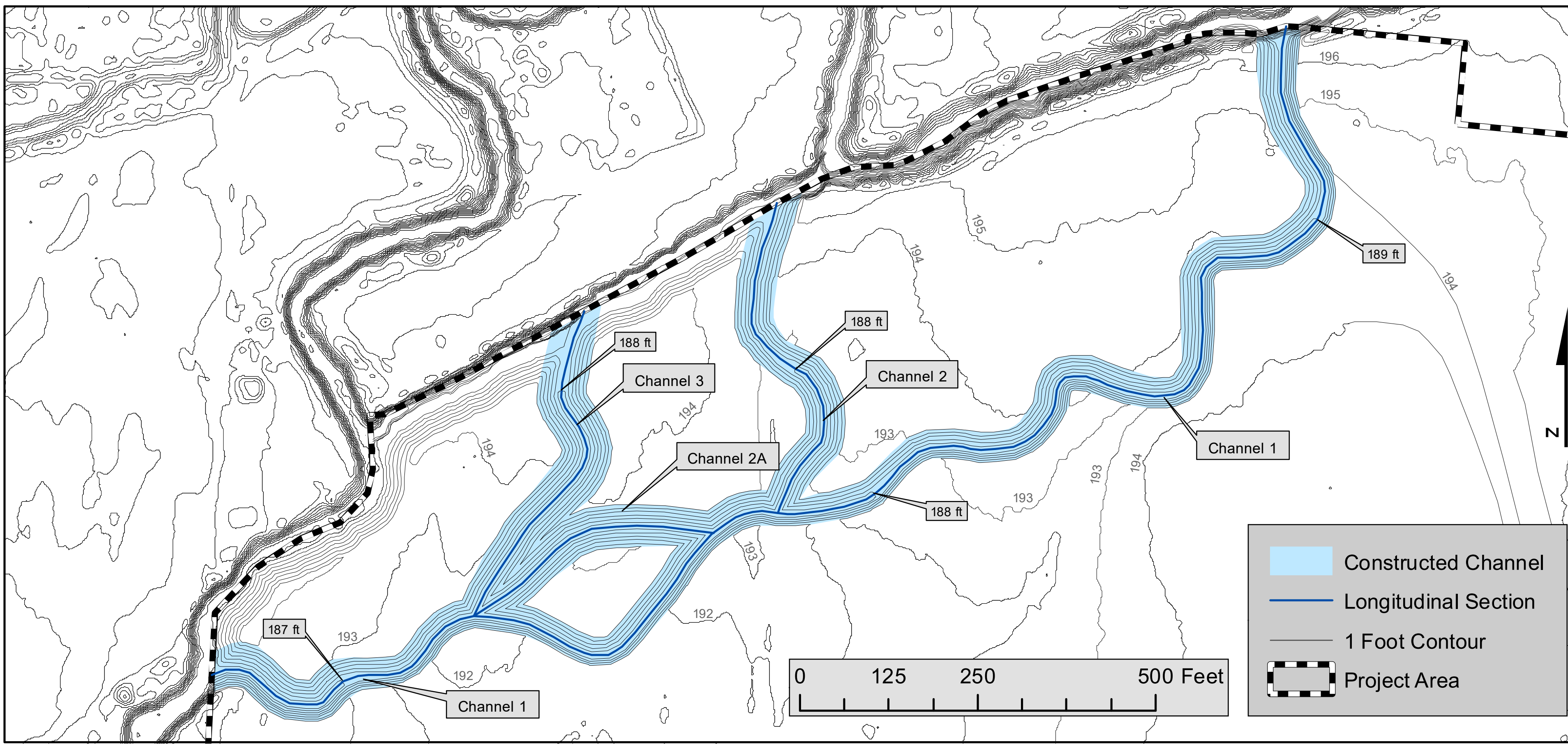
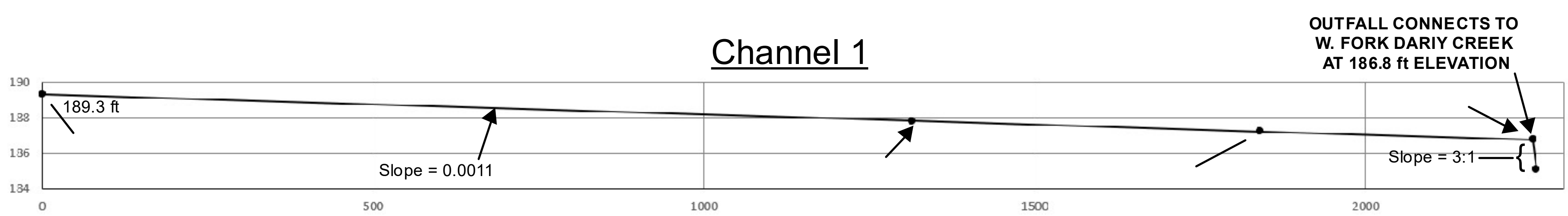
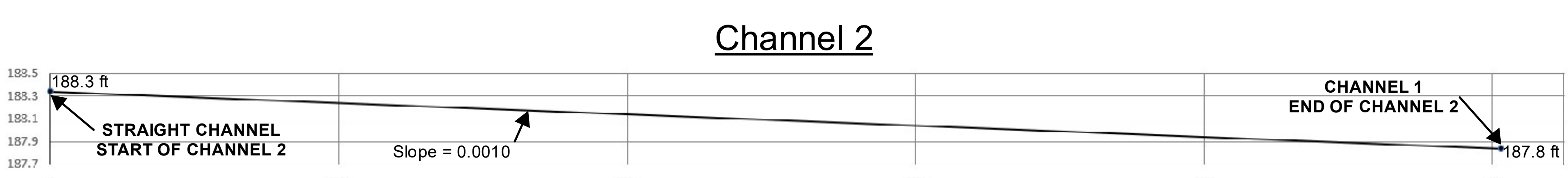
Figure 11j: Constructed Channel Longitudinal Section Map



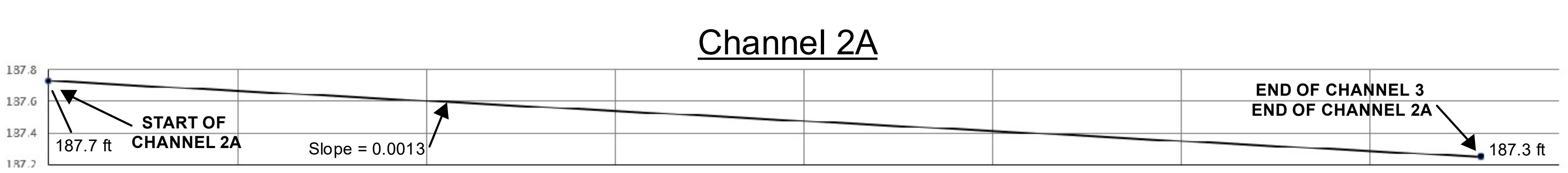
Channel 1



Channel 2



Channel 2A



Channel 3

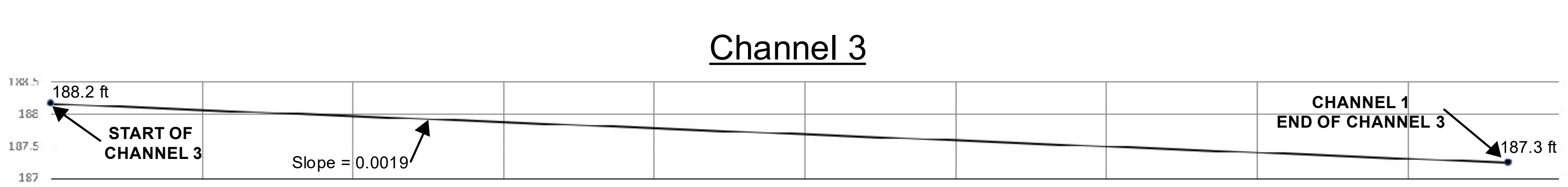
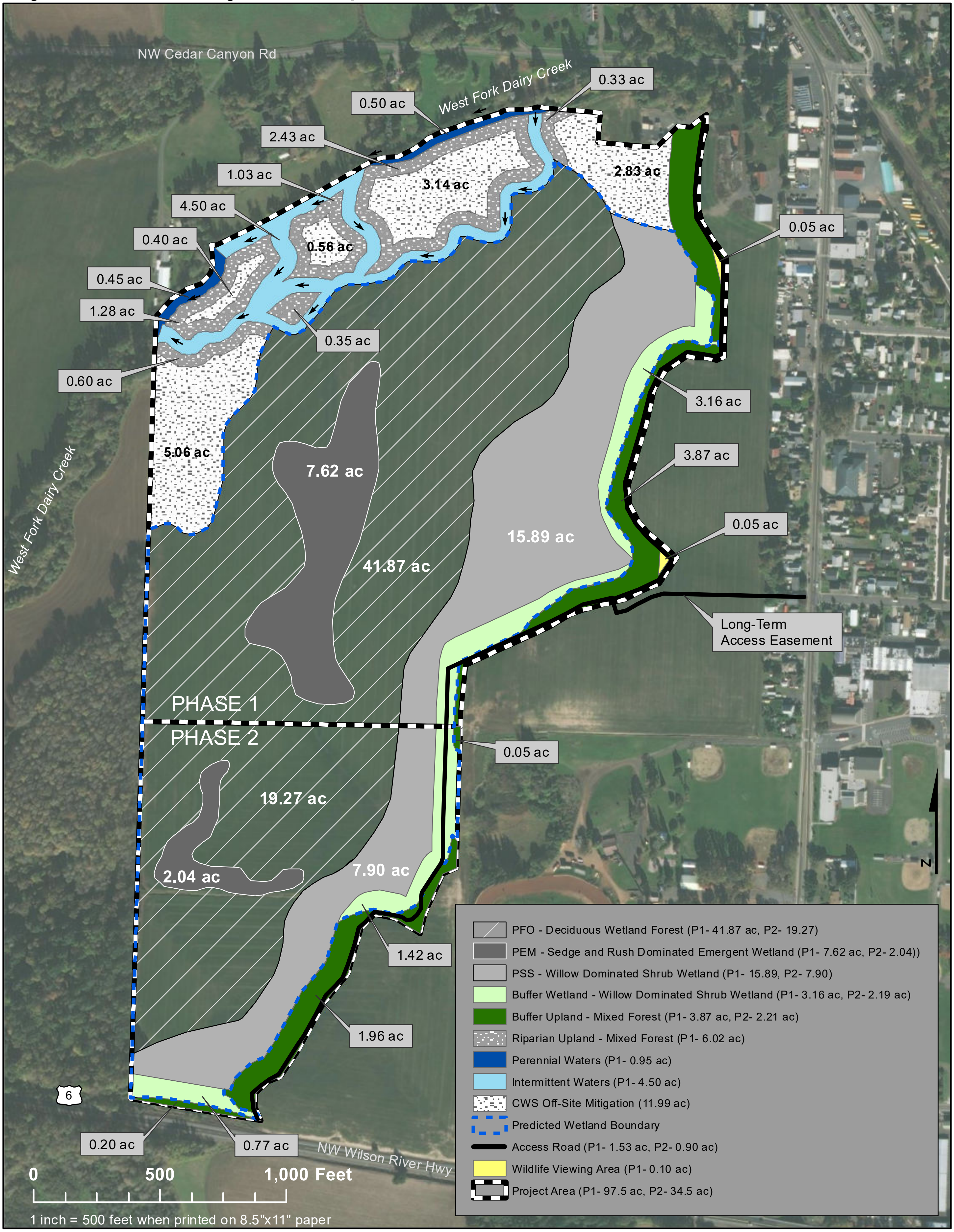


Figure 12: Planting Plan Map



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 12. Planting Plan Map 220201.mxd

Map created by Miles Eubanks. Ver. 1.22

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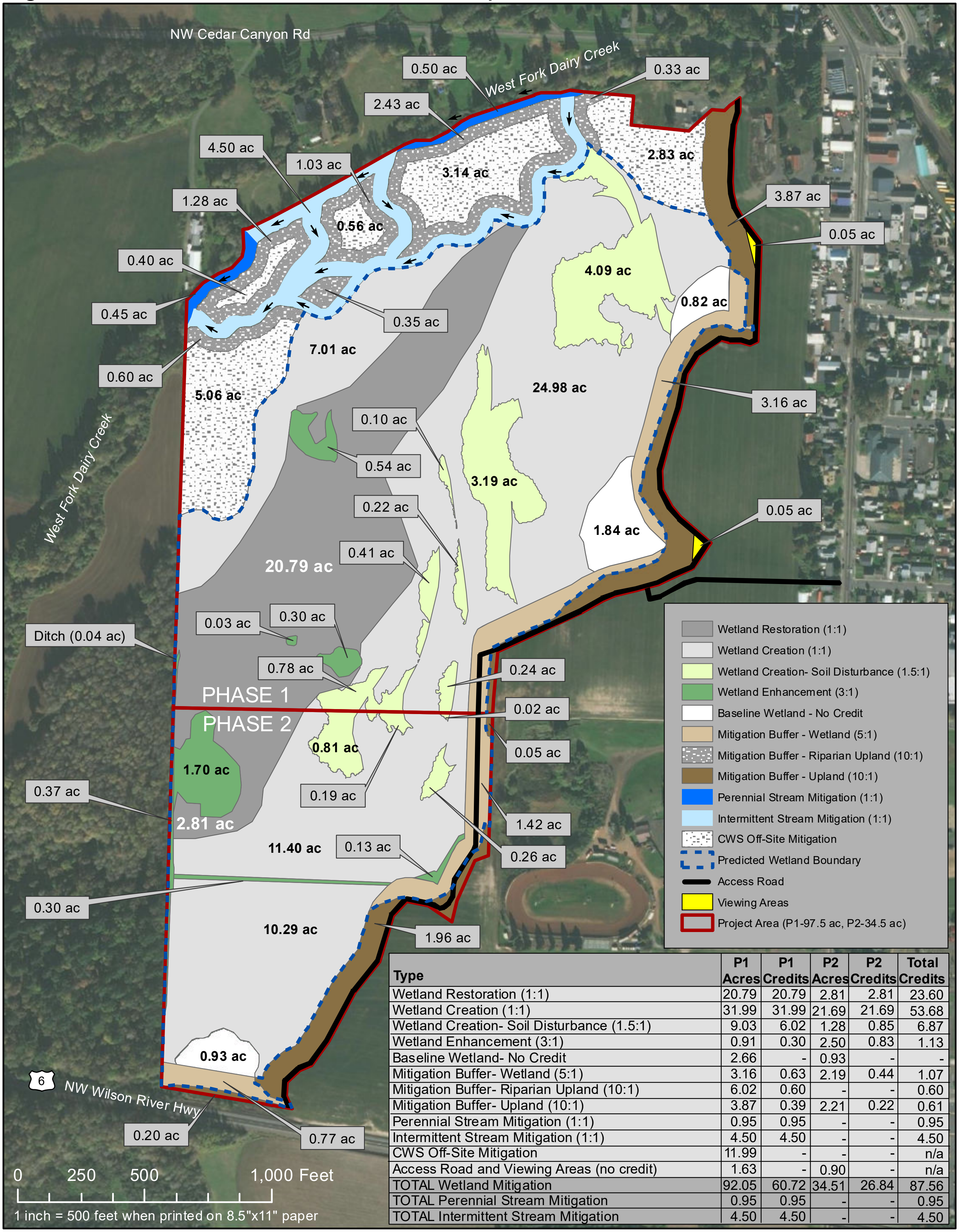
Figure 13: Determination of Credits Map



Type	P1 Acres	P1 Credits	P2 Acres	P2 Credits	Total Credits
Wetland Restoration (1:1)	20.79	20.79	2.81	2.81	23.60
Wetland Creation (1:1)	31.99	31.99	21.69	21.69	53.68
Wetland Creation- Soil Disturbance (1.5:1)	9.03	6.02	1.28	0.85	6.87
Wetland Enhancement (3:1)	0.91	0.30	2.50	0.83	1.13
Baseline Wetland- No Credit	2.66	-	0.93	-	-
Mitigation Buffer- Wetland (5:1)	3.16	0.63	2.19	0.44	1.07
Mitigation Buffer- Riparian Upland (10:1)	6.02	0.60	-	-	0.60
Mitigation Buffer- Upland (10:1)	3.87	0.39	2.21	0.22	0.61
Perennial Stream Mitigation (1:1)	0.95	0.95	-	-	0.95
Intermittent Stream Mitigation (1:1)	4.50	4.50	-	-	4.50
CWS Off-Site Mitigation	11.99	-	-	-	n/a
Access Road and Viewing Areas (no credit)	1.63	-	0.90	-	n/a
TOTAL Wetland Mitigation	92.05	60.72	34.51	26.84	87.56
TOTAL Perennial Stream Mitigation	0.95	0.95	-	-	0.95
TOTAL Intermittent Stream Mitigation	4.50	4.50	-	-	4.50

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 13. Determination of Credits Map 220131.mxd

Map created by Miles Eubanks. Ver 1.22

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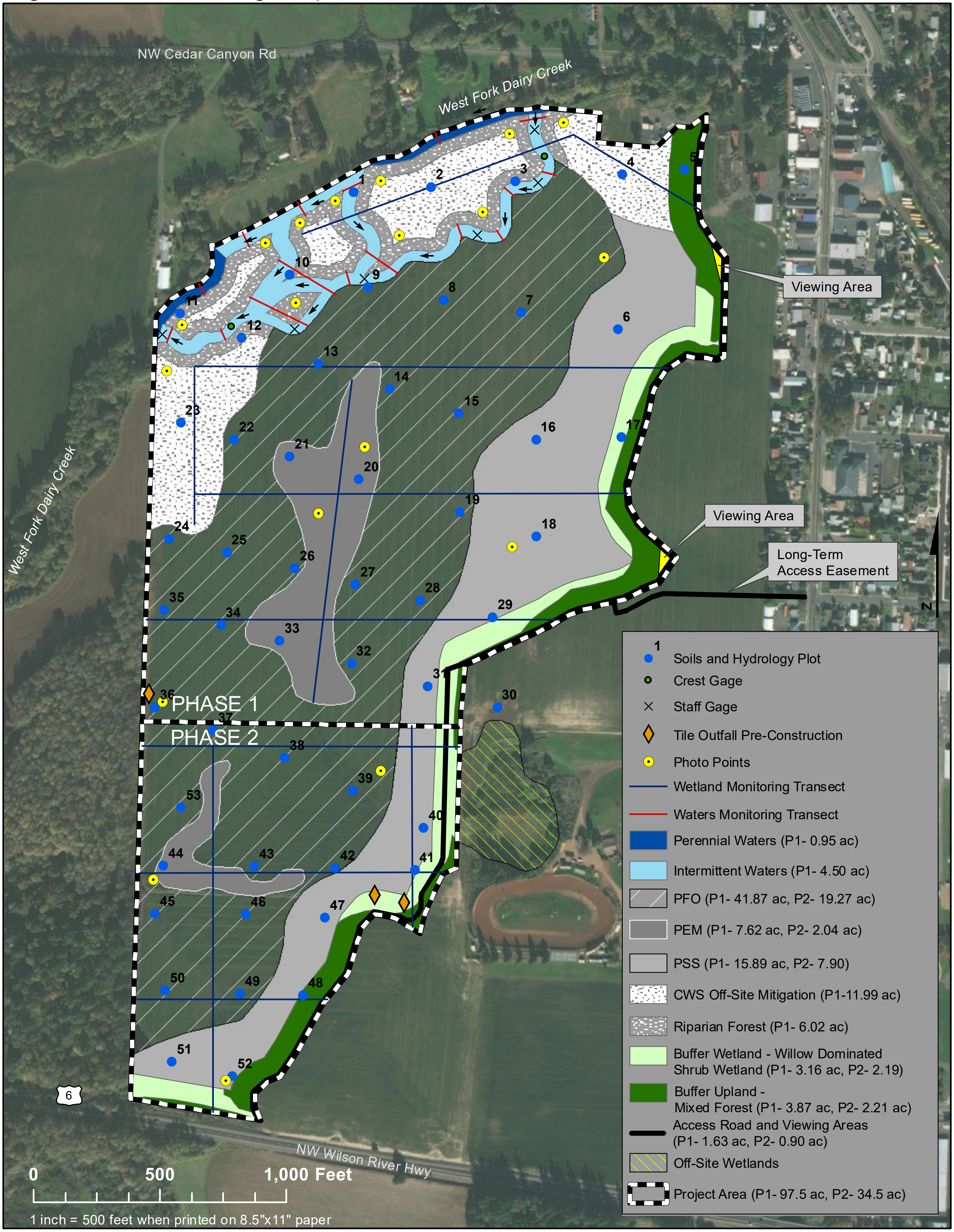
Figure 14: Monitoring Map



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 14. Monitoring Map 220201.mxd

Map created by Miles Eubanks.
Ver. 1.22

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APPENDICES:

Appendix A: Wetland and Waters Determination Report 2021
Appendix B: Ground-Level Photographs
Appendix C: Wetland Hydrology Study
Appendix D: Waters Hydrologic and Hydraulic Studies
Appendix E: Drain Tile Map (2006)
Appendix F: Drone Photographs (2020-2021)
Appendix G: Soils Delineation Datasheets
Appendix H: ORWAP Information, Data and Assumptions
Appendix I: SFAM Report, Data, and Assumptions
Appendix J: Planting Plan
Appendix K: Offsite Contamination Information DEQ

Appendix A: Wetland and Waters Determination Report 2021

ONSITE WETLAND DETERMINATION REPORT **BATCH**
OREGON DEPARTMENT OF STATE LANDS **WD#:2021-0288**

775 Summer Street NE, Suite 100, Salem OR 97301-1279, Phone: (503) 986-5200

At your request, an onsite wetland determination has been conducted on the property described below.

County: Washington City: Banks

Agent Address: C. Jonas Moiel, Green Banks LLC, 14200 SE McLoughlin Blvd, Suite A, Milwaukie, Oregon 97267

Township: 2N Range: 4W Section: 36 Q/Q:__ Tax Lot: 600 &800 (Portions) Date of Site Visit 04/21/2021

Project Name: Dairy Creek Mitigation Bank, Site Address/Location: West of Main Street, North of Hwy 6

☐ There are no jurisdictional wetlands or waterways within the study area. Therefore, no state removal-fill permit is required. Notes: ______

☒ There are wetlands or waterways on or adjacent to the property that are subject to the state Removal-Fill Law.

- ☒ A state permit is required for ≥ 50 cubic yards of fill, removal, or ground alteration in the wetlands or waterways.
- ☒ A state permit may be required for any amount of fill, removal, or ground alteration below the ordinary high-water line of a designated Essential Salmonid Habitat stream or within associated wetlands.

☐ A wetland determination or delineation will be needed if ______. The delineation report should be submitted to the Department for review and approval prior to or at the same time as the permit application.

☐ A state permit will be/will not be required for ______ because ______

☐ A permit may be required by the Army Corps of Engineers: (503) 808-4373

Note: This report is for the state Removal-Fill Law only. City or County permits may be required for the proposed activity.

Comments: Based on observations made during the April 21, 2021, site visit, 2 wetland boundaries identified in WD#2019-0378 were modified (Wetland A and B), 3 additional wetland areas were identified (Wetland 2021-1, 2021-2, and 2021-3) and the remaining 5 wetlands (Wetland D, E, F, and Ditch 1 and 2; located within the bank's study area and identified in the 2019 report) remain unchanged. The comparison was complicated by the fact that the study area reviewed for the 2021 visit included only a portion of the area delineated in the 2019 report and the April site visit was conducted during a drier than normal period. In absence primary hydric soil indicators, revisions on the attached maps were based on strong evidence of wetland hydrology from the past wet season. The Department may reconsider these revised boundaries if better information indicates that early growing season conditions do not meet wetland hydrology criteria. See attached Table 1 for the revised area values.

Determination by: Peter Ryan Pete Ryan Date 06/02/2021

☒ This jurisdictional determination is valid for five years from the above date, unless new information necessitates a revision. Circumstances under which the Department may change a determination and procedures for renewal of an expired determination are found in OAR 141-090-0045 (available on our web site or upon request). The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months from the above date.

☐ **This is a preliminary jurisdictional determination and is advisory only**

Email Copy To:-☒ Agent jonas@greenbanksllc.com ☒ Owner DCMB LLC r.bobosky@comcast.net

☒ Enclosures: Revised delineation maps for DCMB area (Index Map and Inset 1, 2, and 3) and Table 1

☒ Maya Goklany, Corps (maya.e.goklany@usace.army.mil)

☒ Dana Field, DSL

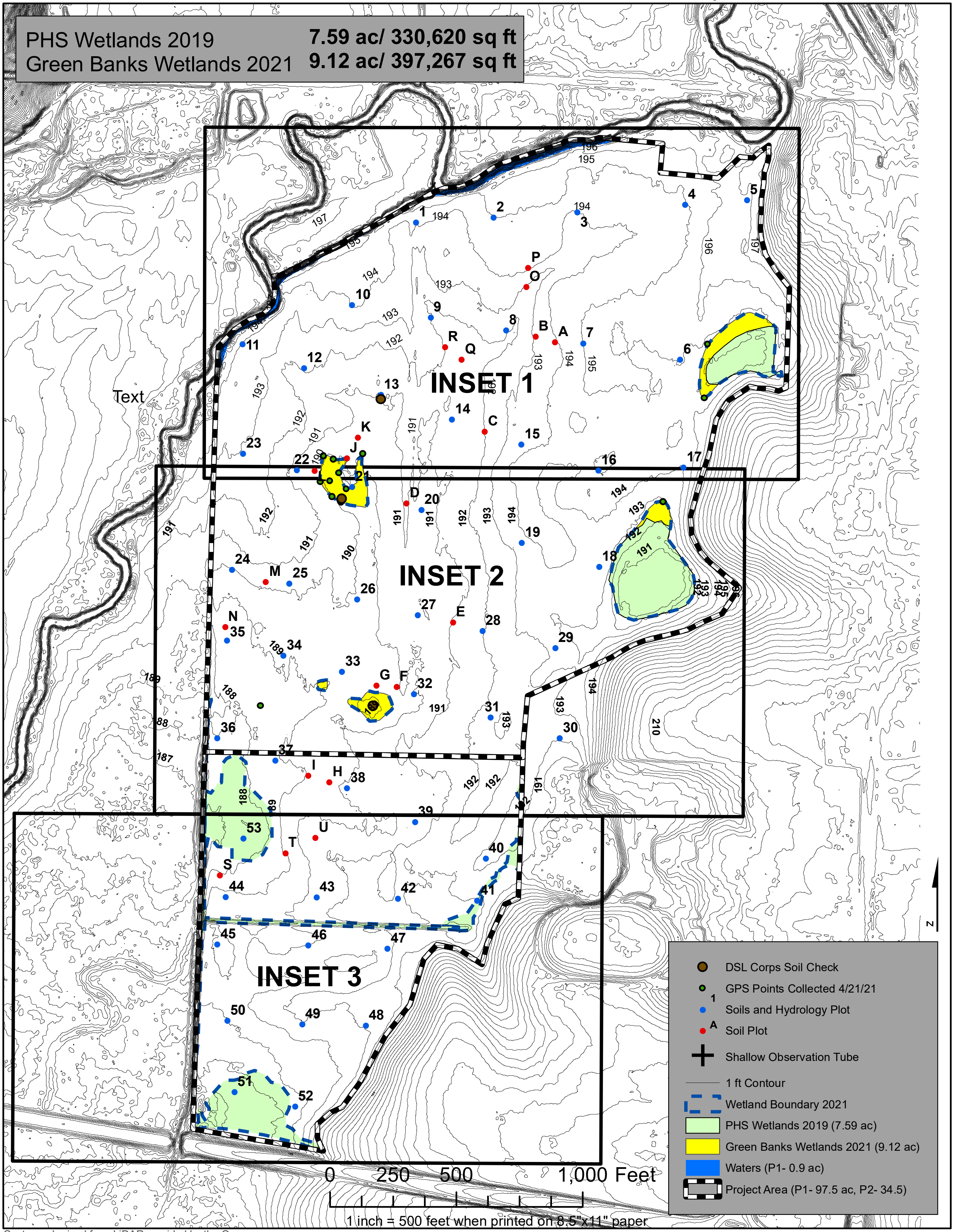
FOR OFFICE USE ONLY

Entire Lot(s) Checked? ☐ Yes ☒ No	**Waters Present?** ☒ Yes ☐ No ☐ Maybe		**Request Received:** 04 /02 /2021
LWI Area: NA **LWI Code:** NA	**Latitude:** 45.618313	**Longitude:** -123.122213	**Related DSL File #:** WD#2019-0378
Has Wetlands? ☒Y ☐N ☐Unk	**ESH?** ☒Y ☐N	**Wild & Scenic?** ☐Y ☒N	**State Scenic?** ☐Y ☒N **Coast Zone?** ☐Y ☒N ☐Unk
Adjacent Waterbody: West Fork Dairy Creek	**NWI Quad:** Forest Grove	☐ Scanned ☐ Mailings Completed	☐ Data Entry Completed

Table 1. Area Revisions from April 4, 2021, Site Visit

Wetlands	Reported Wetland Areas (Acres)	
	2021 Dairy Creek Bank	WD#2019-0378
A	1.45 (Increased by 0.5 A)	0.95
B	2.32 (Increased by 0.16 A)	2.16
C	-------- (Outside 2021 SAB)	0.05
D	0.41 (Remainder outside 2021 SAB)	0.87
E	1.70	1.70
F	1.63	1.63
Ditch-1	0.33	0.33
Ditch-2	0.41	0.41
Wetland 2021-1	0.54 (Not observed in 2019)	--------
Wetland 2021-2	0.03 (Not observed in 2019)	--------
Wetland 2021-3	0.30 (Not observed in 2019)	--------
Totals	**9.12**	**8.1**

DCMB 2021 Wetland Delineation Modification - Index Map



Contours derrived from LiDAR provided by the Oregon Department of Geology and Mineral Industries (DOGAMI).

Wetlands delineated by Pacific Habitat Services 2019.

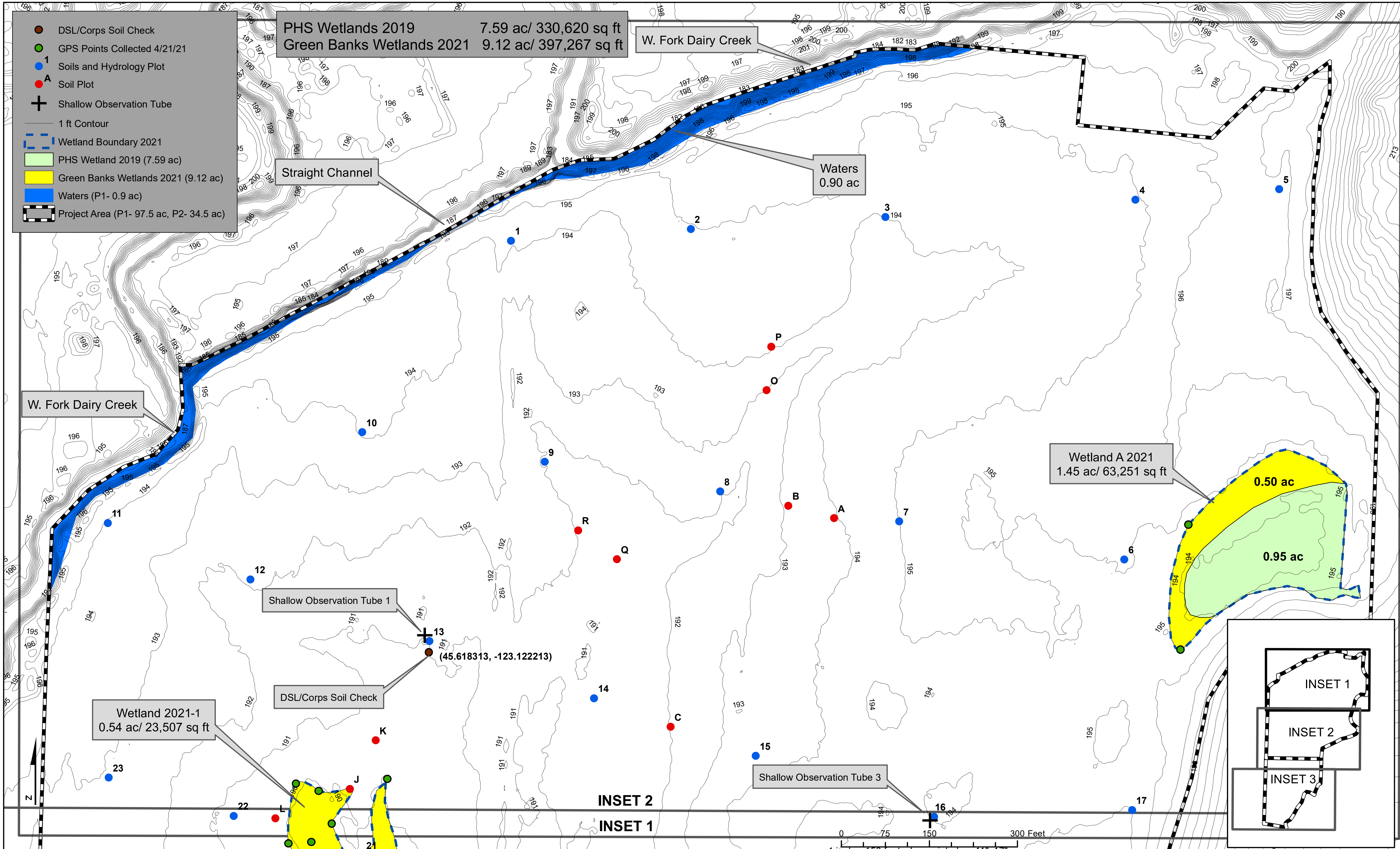
Ground elevations surveyed in stream channel and ditches where LiDAR inaccuracies were found.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\wetland delineation\mxds\DCMB 2021 Wetland Delineation Modifications Index 210506.mxd

greenbanks

Map created by Miles Eubanks.
Ver. 5.6.21

DCMB 2021 Wetland Delineation Modification: Green Banks LLC - Inset 1



Contours derived from LiDAR provided by the Oregon Department of Geology and Mineral Industries (DOGAMI).

Ground elevations surveyed in stream channel and ditches where LiDAR inaccuracies were found.

Wetlands delineated by Pacific Habitat Services 2019.

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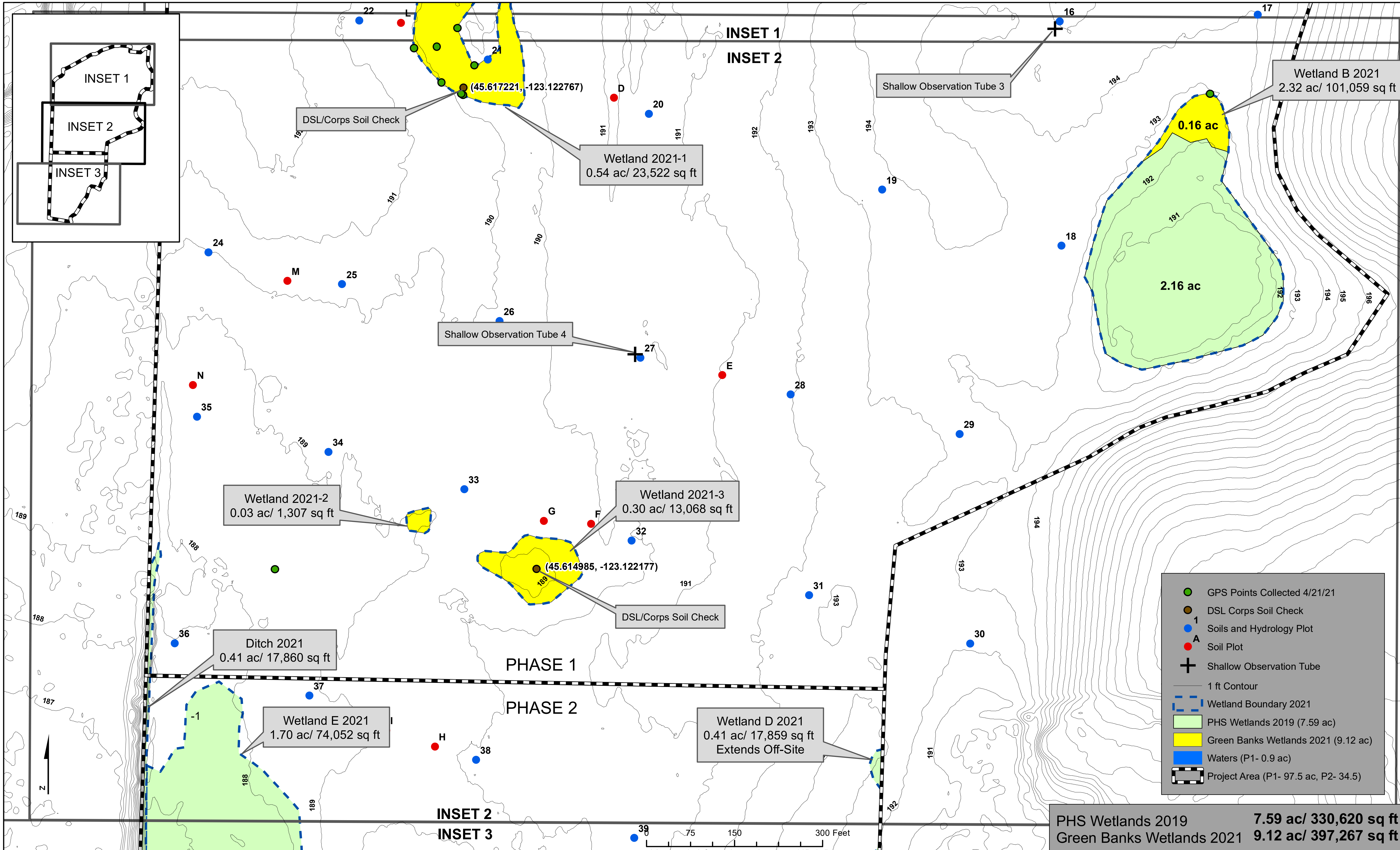
Map created by Miles Eubanks. Ver. 5.6.21

greenbanks

DCMB 2021 Wetland Delineation Modification: Green Banks LLC - Inset 2



Contours derived from LiDAR provided by the Oregon Department of Geology and Mineral Industries (DOGAMI).

Ground elevations surveyed in stream channel and ditches where LiDAR inaccuracies were found.

Wetlands delineated by Pacific Habitat Services 2019.

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Map created by Miles Eubanks.
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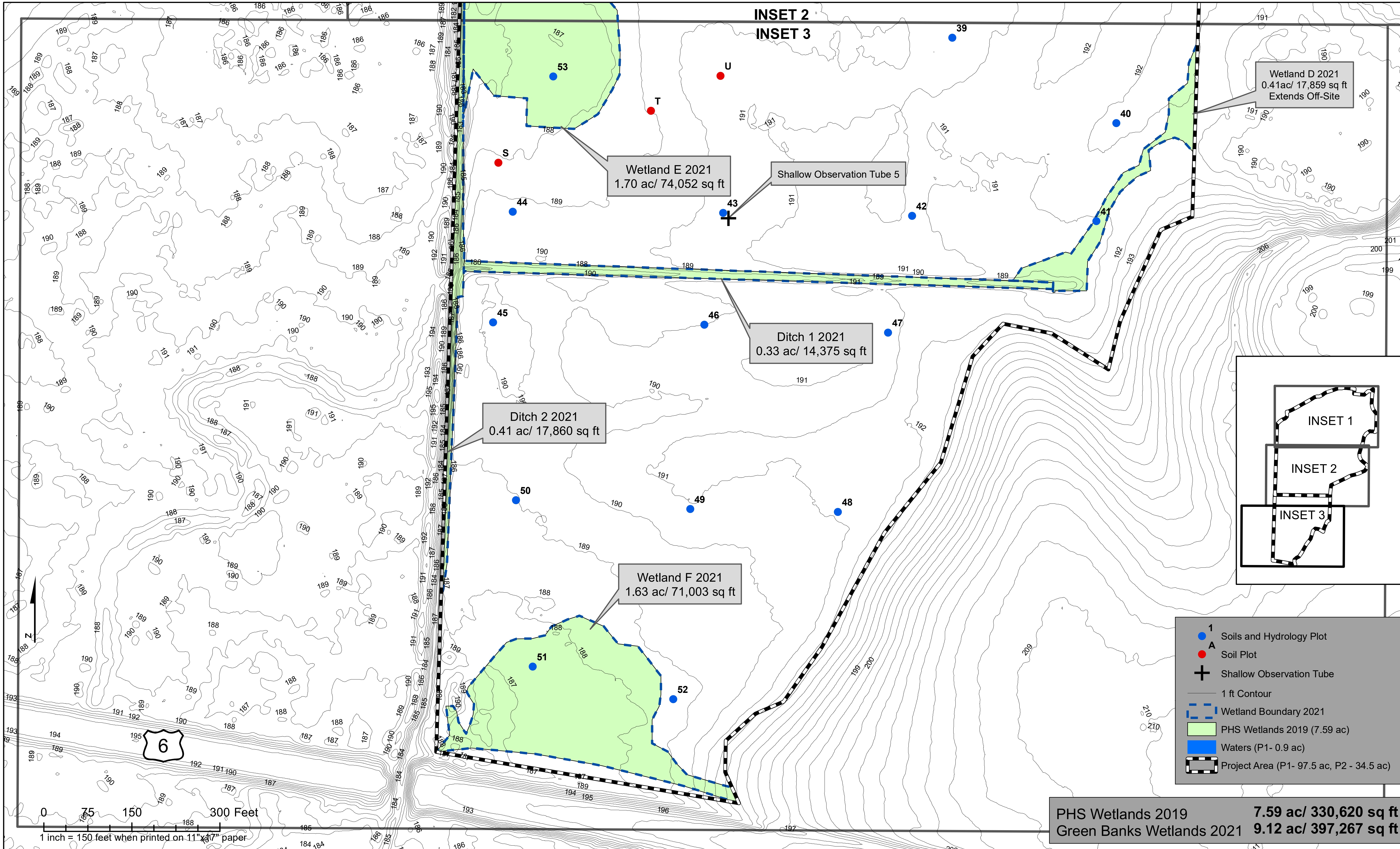
greenbanks

DCMB 2021 Wetland Delineation Modification: Green Banks LLC - Inset 3



Contours derived from LiDAR provided by the Oregon Department of Geology and Mineral Industries (DOGAMI).

Ground elevations surveyed in stream channel and ditches where LiDAR inaccuracies were found.

Wetlands delineated by Pacific Habitat Services 2019.

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Map created by Miles Eubanks.
Ver. 5.6.21

greenbanks

Appendix B: Ground-Level Photographs

Appendix B: Ground-Level Photographs

Photo 1: View of the P1 and P2 project area taken on September 9, 2020, facing south.

Photo 2: View of saturated soils and inundation near P1 and P2 boundary taken on January 6, 2020, facing southeast.

Photo 3: View of inundation in P1 area on January 29, 2020, facing southwest.

Photo 4: View of surface water spilling out of W Fork Dairy Creek into the project area on January 29, 2020, facing southeast.

Photo 5: View of inundation in P2 East-West ditch on January 6, 2020, facing northeast.

Photo 6: View of groundwater seeping along P1 boundary on January 6, 2020, facing north.

Photo 7: View of surface water in the Straight Channel on January 13, 2020, north.

Photo 8: View of surface water in the Straight Channel on January 29, 2020, facing north.

Photo 9: View of shallow observation tube being "bailed" to clean out groundwater; captured on January 20, 2020.

Photo 10: View from bottom of Straight Channel on August 10, 2020, facing west.

Photo 11: View from bottom of Straight Channel on August 10, 2020, facing east.

Photo 12: View from bottom of Straight Channel on August 10, 2020, facing west.

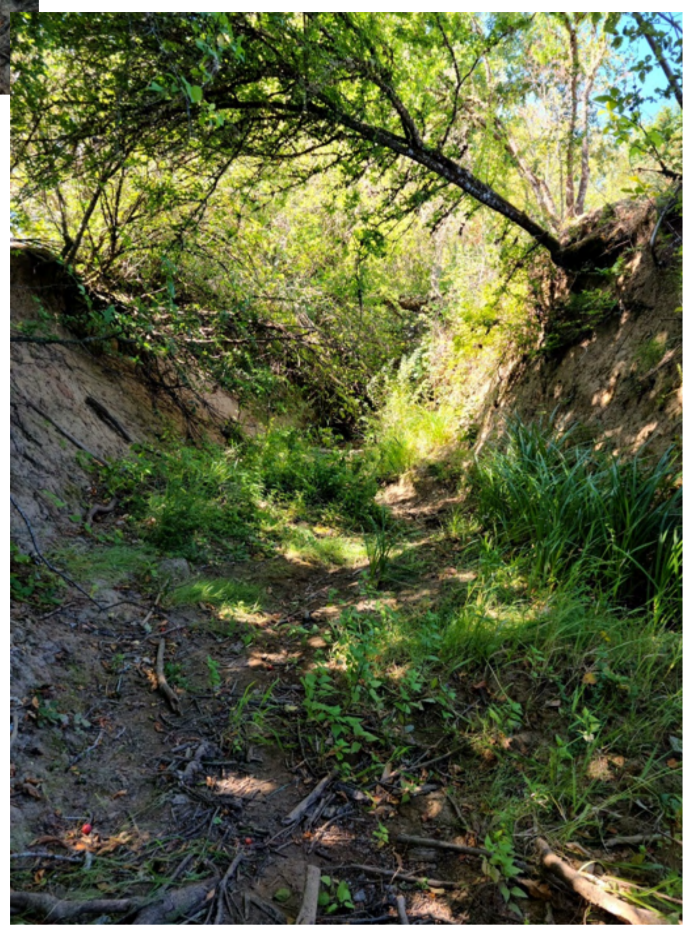


Photo 13: View from bottom of Straight Channel on August 10, 2020, facing east. This is a small inundated pool in late summer.

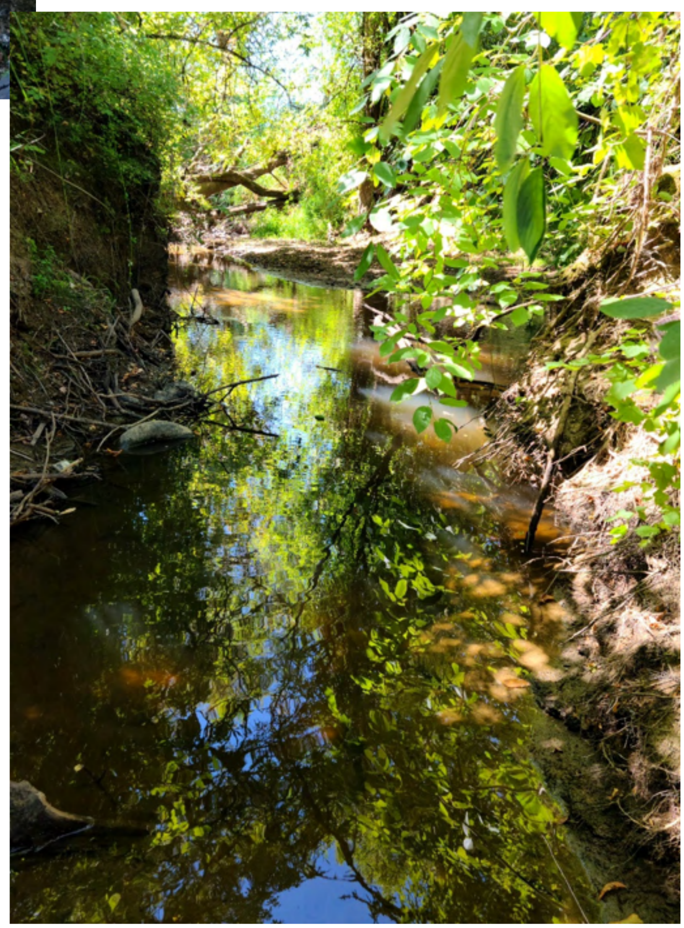


Photo 14: View from bottom of Straight Channel on August 10, 2020, facing west. This is the location where the art.chan. merges with W Fork Dairy

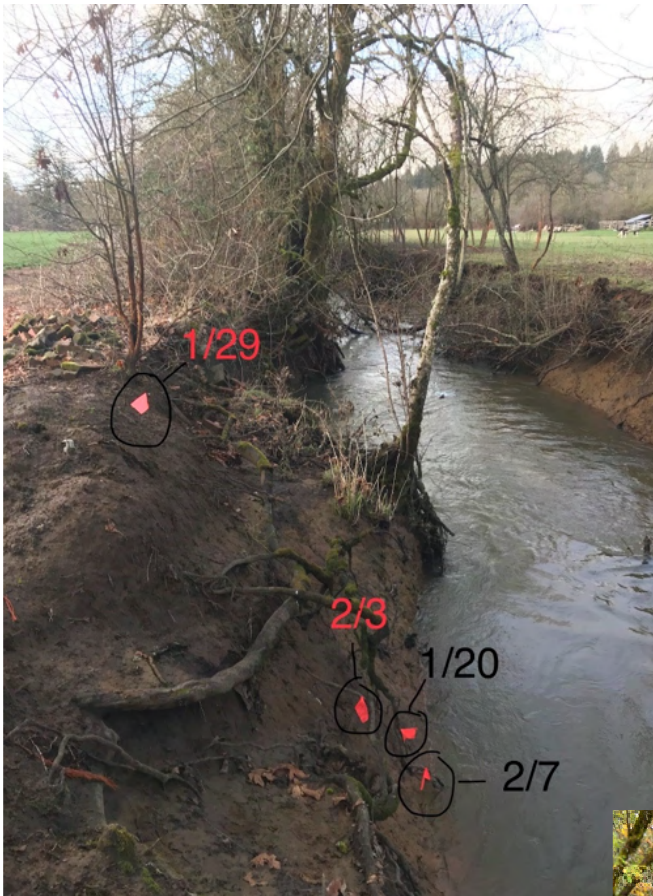


Photo 15: View of flags placed for various flood events on the Straight channel in 2020. Photo taken on February 10, 2020, facing west.

Photo 16: View of SFAM assessment in W Fork Dairy Creek on September 24, 2020, facing southwest. Low elevation wetland benches can be viewed.

Photo 17: View of North-South ditch adjacent to western project area boundary
on August 23, 2020, facing north.

Photo 18: View of Wapato Sitly Clay Loam typical color break between 10YR3/2
to 10YR4/2 around 16 inches.

Photo 19: View of reference site location just south of the DCMB project area on W. Fork Dairy Creek. Taken on September 24, 2020, facing southwest.

Photo 20: View of adjacent neighboring property to the north of Straight Channel with vertical banks. Taken on March 11, 2021.

Photo 21: View of East-West Ditch at location of Primary Tile outfall (flag) facing west on March 16, 2021.

Photo 22: View of Primary Tile outfal on March 16, 2021.

Photo 23: Close up view of primary tile outfall on March 16, 2021.

Photo 24: View of Secondary Tile outfall into North-South ditch facing east on March 16, 2021.

Photo 25: View of ceramic tile removed when digging up secondary tile outfall.

Photo 26: View of offsite wetland to the east of the Phase 2 area overflowing into the DCMB facing northeast on March 16, 2021.


Photo 27: View of inundation at the north end of wetland A on February 28, 2021.

Photo 28: View of Straight Channel overflowing into the DCMB on January 13, 2021, facing northwest.

Photo 29: View of Straight Channel overflowing into site facing west on Jan. 13, 2021.

Photo 30: View of Straight Channel overflowing into site facing east on January 13, 2021.

Photo 31: View of Straight Channel overflowing into site facing south on January 13, 2021.

Appendix C: Wetland Hydrology Study

Includes:

-2019-2020 Precipitation Tables
-Hydrology Plot Data
-Shallow Observation Tube Data-Logger Data and Graphs

2019 Hydrology Study:

Monthly Precipitation Data Table (2018 - 2019)

Month	Total Precipitation (Inches)	Average Precipitation (Inches)	Percent of Monthly Average Precipitation	Within "Normal" 30-70 percentile Range from WETS Table?	Current Water Year to Date (Inches)	Percent of Average Water Year to Date at end of Month
Oct. 2018	3.33	2.68	124.25%	Within normal range (1.45”-3.27”)	3.33	124.25%
Nov. 2018	2.61	6.03	43.28%	Below normal range (4.07”-7.21”)	5.94	68.20%
Dec. 2018	4.74	6.44	73.60%	Within normal range (4.44”-7.67”)	10.68	70.50%
Jan. 2019	3.12	5.76	54.17%	Below normal range (3.70”-6.93”)	13.80	66.00%
Feb. 2019	4.96*	4.72	105.08%	Within normal range (3.17”-5.65”)	18.76	73.20%
Mar. 2019	1.36*	3.93	34.61%	Below normal range (2.96”-4.59”)	20.12	68.06%

***It should be noted that there was snowfall and freezing temperatures that could have affected the hydrology in addition to precipitation. The NWS Monthly Climate Data and Portland-Hillsboro Airport WETS tables do not have snowfall data to show a measurable impact on hydrologic conditions. Source: Precipitation totals from Hillsboro station NWS. Averages from Hillsboro-Portland Airport WETS table 1971-2000.**

2020 Hydrology Study:

Monthly Precipitation Data Table (2019 – 2020)

Month	Total Precipitation (Inches)	Average Precipitation (Inches)	Percent of Monthly Average Precipitation	Within "Normal" 30-70 percentile Range from WETS Table?	Current Water Year to Date (Inches)	Percent of Average Water Year to Date at end of Month
Oct. 2019	1.51	2.68	56.34%	Within normal range (1.45”-3.27”)	1.51	56.34%
Nov. 2019	1.16	6.03	19.24%	Below normal range (4.07”-7.21”)	2.67	30.65%
Dec. 2019	5.22	6.44	81.06%	Within normal range (4.44”-7.67”)	7.89	52.07%
Jan. 2020	7.18	5.76	124.65%	Above normal range (3.70”-6.93”)	15.07	72.07%
Feb. 2020	1.49	4.72	31.56%	Below normal range (3.17”-5.65”)	16.56	64.61%
March 2020	2.12	3.93	53.94%	Below normal range (2.96”-4.59”)	18.68	63.19%

Source: Precipitation totals from NWS Hillsboro station. Averages are from Hillsboro-Portland Airport WETS Table 1971-2000.

2019 WETLAND HYDROLOGY STUDY PLOT DATA

Plot ID	14-Feb	18-Feb	22-Feb	11-Mar	15-Mar	18-Mar	26-Mar	8-Apr	15-Apr	23-Apr	Wetland Hydrology
P1	-6.5	> -24.0	-24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P2	-8.5	-22.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P3	IN	-7.0	-12.5	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P4	-1.5	-14.5	-22.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P5	IN (+.25)	-7.5	-12.0	> -24.0	> -24.0	> -24.0	> -24.0	-4.5	> -24.0	> -24.0	NO
P6	-1	-3.0	-5.3	-19.0	-20.8	> -24.0	> -24.0	-15.0	-21.5	> -24.0	NO
P7	-13	-21.0	-24.5	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P8	-1.5	-4.5	-5.5	-20.0	-16.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P9	-0.5	-4.5	-8.0	-23.8	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P10	-9.5	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P11	-9.5	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P12	-4	-11.0	-16.3	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P13	N/A	-1.5	-2.5	-16.8	-18.0	-24.0	> -24.0	-23.0	> -24.0	> -24.0	NO
P14	N/A	-1.0	-2.0	-18.0	-20.0	> -24.0	> -24.0	-23.8	> -24.0	> -24.0	NO
P15	N/A	-14.0	-16.5	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P16	N/A	-4.5	-8.5	-23.5	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P17	N/A	-0.5	-5.8	-23.8	-20.0	> -24.0	> -24.0	IN (+ 0.2)	-21.5	> -24.0	NO
P18	N/A	-6.5	-10.0	-23.5	> -24.0	> -24.0	> -24.0	-23.8	> -24.0	> -24.0	NO
P19	N/A	-14.5	-18.5	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P20	N/A	0.0	-0.3	-17.0	-18.5	-23.5	> -24.0	-16.0	-23.5	> -24.0	NO
P21	N/A	-0.8	-1.3	-24.0	-20.0	> -24.0	> -24.0	-15.5	> -24.0	> -24.0	NO
P22	N/A	-3.0	-6.0	-24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P23	N/A	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P24	N/A	-5.5	-14.5	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P25	N/A	-8.0	-15.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P26	N/A	-0.5	-3.0	-22.0	-22.0	> -24.0	> -24.0	-15.0	> -24.0	> -24.0	NO
P27	N/A	N/A	-5.5	-23.0	-23.5	> -24.0	> -24.0	-16.0	> -24.0	> -24.0	NO
P28	N/A	N/A	-14.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P29	N/A	N/A	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P30	N/A	N/A	-6.5	-12.5	-14.0	-17.0	-17.5	-10.0	-13.0	-17.0	YES (offsite)
P31	N/A	N/A	-20.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	> -24.0	NO
P32	N/A	N/A	-2.0	-16.0	-17.8	-21.0	> -24.0	-8.0	-17.8	> -24.0	NO
P33	N/A	N/A	-2.5	-15.5	-17.5	-23.0	> -24.0	-8.3	-18.0	> -24.0	NO
P34	N/A	N/A	-8.0	> -24.0	-21.5	> -24.0	> -24.0	-9.5	-21.5	> -24.0	NO
P35	N/A	N/A	N/A	N/A	-22.5	> -24.0	> -24.0	-13.0	-22.8	> -24.0	NO
P36	N/A	N/A	N/A	N/A	-18.0	-21.5	-20.5	-14.0	-16.8	-17.8	NO
P37	N/A	N/A	N/A	N/A	-16.3	-19.0	> -24.0	-6.3	-15.0	-20.5	NO
P38	N/A	N/A	N/A	N/A	> -24.0	> -24.0	> -24.0	-10.8	-23.5	> -24.0	NO
P39	N/A	N/A	N/A	N/A	-23.8	> -24.0	> -24.0	-8.5	-21.5	> -24.0	NO
P40	N/A	N/A	N/A	N/A	-23.0	> -24.0	> -24.0	-19.5	-22.0	> -24.0	NO
P41	N/A	N/A	N/A	N/A	-6.3	-7.5	-9.0	IN (+ 1.5)	-2.5	-7.3	YES (wetland)
P42	N/A	N/A	N/A	N/A	-19.0	-19.0	-20.3	-12.3	-18.5	-21.0	NO
P43	N/A	N/A	N/A	N/A	-22.8	-23.5	> -24.0	-16.8	-22.0	-24.0	NO
P44	N/A	N/A	N/A	N/A	> -24.0	> -24.0	> -24.0	-22.0	> -24.0	> -24.0	NO
P45	N/A	N/A	N/A	N/A	> -24.0	> -24.0	> -24.0	-22.5	> -24.0	> -24.0	NO
P46	N/A	N/A	N/A	N/A	-17.5	-17.5	-19.5	-14.3	-17.5	-19.0	NO
P47	N/A	N/A	N/A	N/A	-17.0	-18.0	-19.5	-9.8	-14.3	-18.3	NO
P48	N/A	N/A	N/A	N/A	N/A	N/A	> -24.0	-16.0	> -24.0	> -24.0	NO
P49	N/A	N/A	N/A	N/A	N/A	N/A	> -24.0	-22.3	> -24.0	> -24.0	NO
P50	N/A	N/A	N/A	N/A	N/A	N/A	> -24.0	-25.0	> -24.0	> -24.0	NO
P51	N/A	N/A	N/A	N/A	N/A	N/A	-5.0	IN (+0.25	IN (+.1)	-4.5	YES (wetland)
P52	N/A	N/A	N/A	N/A	N/A	N/A	-11.3	-1.0	-4.5	-9.8	YES (non hydric)
P53	N/A	N/A	N/A	N/A	N/A	N/A	IN (+0.5)	IN (+1.0)	IN (+.8)	IN (+0.5)	YES (wetland)

Notes: Data displayed are "depth to free-water" measurements in inches. Cells shown as "N/A" were not yet installed at the date displayed; we were doing a soil survey congruently and were adding new soils/hydrology plots each survey day. Cells displaying "IN" means inundated in inches. Cells diplaying ">24.0" were dry to the bottom of the 24 inch hole.

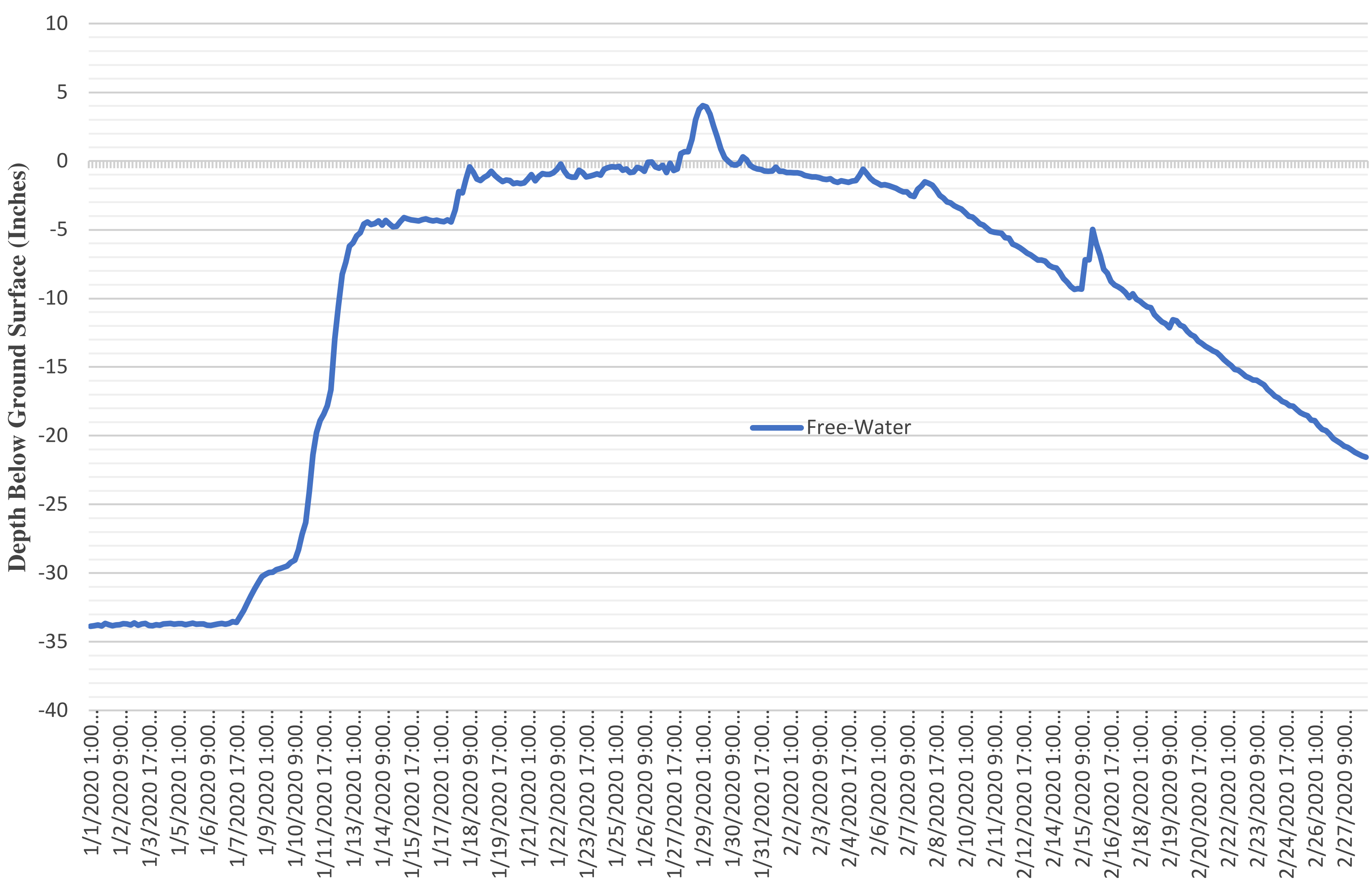
2020 WETLAND HYDROLOGY STUDY PLOT DATA

Plot ID	6-Jan	9-Jan	13-Jan	17-Jan	20-Jan	29-Jan	3-Feb	7-Feb	11-Feb	14-Feb	19-Feb	28-Feb	
E fork river gauge	**150 cfs, 5.1 ft**	**200 cfs, 5.3 ft**	**400 cfs, 6.0 ft**	**200 cfs, 5.4 ft**	**300 cfs, 5.75 ft**	**566 cfs, 6.6 ft**	**270 cfs, 5.6 ft**	**200 cfs, 5.3 ft**	**200 cfs, 5.3 ft**	**150 cfs, 5.1 ft**	**120 cfs, 4.9 ft**	**85 cfs, 4.7 ft**	**Wetland Hydrology**
P1	> -30.0	> -30.0	-22.0	> -30.0	-27.5	-2.0	-24.5	> -30.0	> -30.0	> -30.0	> -30.0	> -30.0	NO
P2	> -30.0	> -30.0	> -30.0	> -30.0	-24.5	-5.0	-21.0	> -30.0	> -30.0	> -30.0	> -30.0	> -30.0	NO
P3	> -30.0	> -30.0	-14.5	-13.5	-9.0	IN (+0.5)	-6.0	-14.5	-21.0	-25.5	> -30.0	> -30.0	NO
P4	> -30.0	> -30.0	-13.5	-20.5	-15.5	-1.0	-14.0	-23.5	> -30.0	> -30.0	> -30.0	> -30.0	NO
P5	IN (+0.5)	-4.5	IN (+1.0)	-5.0	IN	IN (+0.5)	-9.0	-18.0	-24.0	> -30.0	> -30.0	> -30.0	NO
P6	-16.5	-16.0	-2.0	-3.5	-2.0	IN (+0.5)	-3.0	-7.0	-10.5	-14.0	-18.0	-28.0	NO
P7	> -30.0	> -30.0	> -30.0	-29.5	-22.5	-9.0	-21.0	-25.0	> -30.0	> -30.0	> -30.0	> -30.0	NO
P8	> -30.0	> -30.0	-11.5	-9.0	-4.5	IN	-3.0	-5.0	-8.0	-11.5	-15.0	-28.0	NO
P9	> -30.0	> -30.0	-12.0	-9.5	-5.0	IN (+0.5)	-4.0	-7.0	-10.5	-14.0	-17.5	-28.5	NO
P10	> -30.0	> -30.0	> -30.0	> -30.0	-26.0	-7.0	-24.5	> -30.0	> -30.0	> -30.0	> -30.0	> -30.0	NO
P11	> -30.0	> -30.0	> -30.0	> -30.0	> -30.0	IN (+3.0)	> -30.0	> -30.0	> -30.0	> -30.0	> -30.0	> -30.0	NO
P12	> -30.0	> -30.0	-19.5	-17.5	-13.5	IN (+3.0)	-11.0	-17.0	-21.5	-25.5	> -30.0	> -30.0	NO
P13*	> -30.0	-29.5	-5.0	-4.5	-1.5	IN (+3.5)	-1.0	-2.5	-5.5	-8.0	-12.0	-22.5	NO
P14	> -30.0	> -30.0	-6.5	-6.0	-1.5	IN (+1.0)	-1.0	-2.0	-6.5	-9.5	-13.0	-22.5	NO
P15	> -30.0	> -30.0	-28.0	-23.5	-16.0	-4.0	-14.5	-18.0	-21.5	-25.5	-28.5	> -30.0	NO
P16*	> -30.0	-24.5	-16.5	-13.0	-8.0	IN (+5.5)	-7.5	-12.0	-15.5	-19.0	-21.5	> -30.0	NO
P17	IN (+0.25)	-11.0	IN (+0.5)	-3.0	IN	IN (+1.5)	-3.0	-8.0	-13.0	-15.5	-17.0	-29.0	NO
P18	-23.5	-23.0	-8.5	-10.0	-7.5	IN	-7.5	-12.0	-16.0	-19.0	-22.0	> -30.0	NO
P19	> -30.0	> -30.0	-24.5	-24.0	-17.0	-5.0	-14.5	-20.5	-26.0	> -30.0	> -30.0	> -30.0	NO
P20	> -30.0	-25.0	-1.5	-3.5	IN	IN (+3.5)	IN (+1.0)	IN	-5.5	-8.5	-11.5	-20.5	NO
P21	-26.0	-24.0	-1.0	-1.5	IN	IN (+5.5)	IN	-0.5	-5.0	-11.0	-15.5	-23.0	NO
P22	> -30.0	> -30.0	-8.0	-7.5	-4.5	IN (+2.5)	-2.5	-6.0	-11.5	-16.5	-21.5	> -30.0	NO
P23	> -30.0	> -30.0	> -30.0	> -30.0	-28.0	-6.0	-22.0	> -30.0	> -30.0	> -30.0	> -30.0	> -30.0	NO
P24	> -30.0	> -30.0	-9.5	-13.0	-9.5	IN	-7.0	-15.0	-22.0	-28.0	-30.0	> -30.0	NO
P25	> -30.0	-28.0	-5.5	-15.0	-11.5	IN	-7.0	-15.0	-21.0	-26.6	-30.0	> -30.0	NO
P26	-27.0	-21.0	IN	-4.5	IN	IN (+7.0)	IN	-2.5	-9.0	-12.5	-16.5	-24.5	NO
P27*	-24.5	-24.0	-4.5	-8.5	-4.0	IN (+2.0)	-2.0	-5.5	-10.5	-13.5	-16.5	-25.0	NO
P28	> -30.0	> -30.0	-15.0	-19.0	-12.0	-0.5	-11.5	-16.5	-21.5	-25.5	-26.5	> -30.0	NO
P29	> -30.0	> -30.0	-25.0	> -30.0	-17.0	IN (+1.5)	-16.5	-29.0	> -30.0	> -30.0	> -30.0	> -30.0	NO
P30	-3.3	-10.0	-4.0	-6.0	-4.0	-1.0	-5.0	-6.5	-8.5	-10.0	-11.0	-16.5	YES (offsite)
P31	> -30.0	> -30.0	-15.0	-22.0	-16.5	-6.5	-18.5	-23.5	> -30.0	> -30.0	> -30.0	> -30.0	NO
P32	-20.5	-15.5	IN (+1.0)	-2.5	IN (+0.5)	IN (+3.5)	IN (+1.0)	-1.0	-5.5	-7.5	-10.0	-18.5	NO
P33	-18.0	-15.5	IN	-3.0	IN	IN (+5.0)	IN (+1.0)	-1.5	-5.0	-7.5	-10.0	-17.5	NO
P34	-18.5	-17.0	IN	-5.0	-3.5	IN (+3.0)	-3.0	-6.0	-10.0	-13.0	-15.5	-21.5	NO
P35	-19.5	-17.0	-2.0	-5.5	-4.0	IN (+3.0)	-2.5	-6.0	-11.5	-15.0	-18.5	-22.0	NO
P36	-13.0	-17.0	-10.5	-14.0	-11.5	IN (+10.0)	-15.5	-15.0	-15.5	-16.0	-16.5	-17.0	NO
P37	-7.5	-13.0	-3.5	-7.5	-6.0	IN	-7.0	-7.5	-10.0	-12.0	-12.5	-16.0	YES?
P38	-21.0	-21.0	-5.5	-13.5	-10.0	-2.5	-12.5	-14.5	-16.5	-20.0	-20.5	-26.0	NO
P39	-21.5	-19.0	IN	-10.0	-6.0	IN (+0.5)	-10.0	-12.0	-15.0	-18.5	-18.5	-25.0	NO
P40	-12.0	-21.0	-13.0	-17.0	-16.0	-11.0	-17.5	-19.0	-20.0	-21.0	-22.0	-25.5	NO
P41	IN (+5.0)	IN (+3.0)	IN (+4.0)	IN (+3.0)	IN (+3.0)	IN (+4.5)	IN (+3.0)	IN (+4.0)	IN (+2.5)	IN (+1.5)	IN (+1.5)	-7.0	YES (wetland)
P42	-7.0	-16.5	-8.0	-15.5	-13.5	-5.5	-16.0	-17.5	-18.0	-19.0	-19.0	-20.0	NO
P43*	-16.0	-21.0	-13.5	-19.5	-17.5	-12.0	-20.0	-20.5	-21.5	-22.0	-21.5	-22.5	NO
P44	-18.0	-24.5	-20.0	-24.0	-23.0	-7.5	-26.5	-25.5	-26.0	-26.0	-26.0	-26.0	NO
P45	> -30.0	> -30.0	> -30.0	> -30.0	> -30.0	-19.0	> -30.0	> -30.0	> -30.0	> -30.0	> -30.0	> -30.0	NO
P46	-10.0	-15.0	-10.0	-14.0	-13.0	-9.0	-15.5	-15.5	-16.5	-17.0	-16.5	-17.5	NO
P47	-7.5	-10.5	-1.0	-7.5	-7.0	-2.0	-10.0	-12.5	-14.5	-16.0	-16.0	-18.0	NO
P48	-21.0	-17.5	-1.5	-10.5	-7.5	-3.0	-15.5	-22.0	> -30.0	-28.0	-29.5	> -30.0	NO
P49	-25.5	-26.0	-13.0	-22.0	-18.5	-14.0	-25.5	> -30.0	> -30.0	> -30.0	> -30.0	> -30.0	NO
P50	-25.5	-29.5	-22.5	-28.5	-26.5	-11.5	> -30.0	-27.0	-27.0	-27.5	27.5	-27.5	NO
P51	IN (+0.5)	IN (+0.5)	IN (+1.0)	IN (+0.5)	IN (+0.5)	IN (+1.0)	IN	IN	IN	IN	IN	-1.5	YES (wetland)
P52	-1.0	-3.0	IN	-2.0	-1.0	IN	-2.5	-3.5	-4.5	-5.0	-5.5	-7.0	YES (non hydric)
P53	IN (+0.5)	IN (+0.5)	IN (+0.5)	IN (+0.5)	IN (+0.5)	IN (+18.0)	IN (+0.5)	IN (+0.5)	IN (+1.0)	IN (+0.5)	IN (+0.5)	IN (+0.5)	YES (wetland)

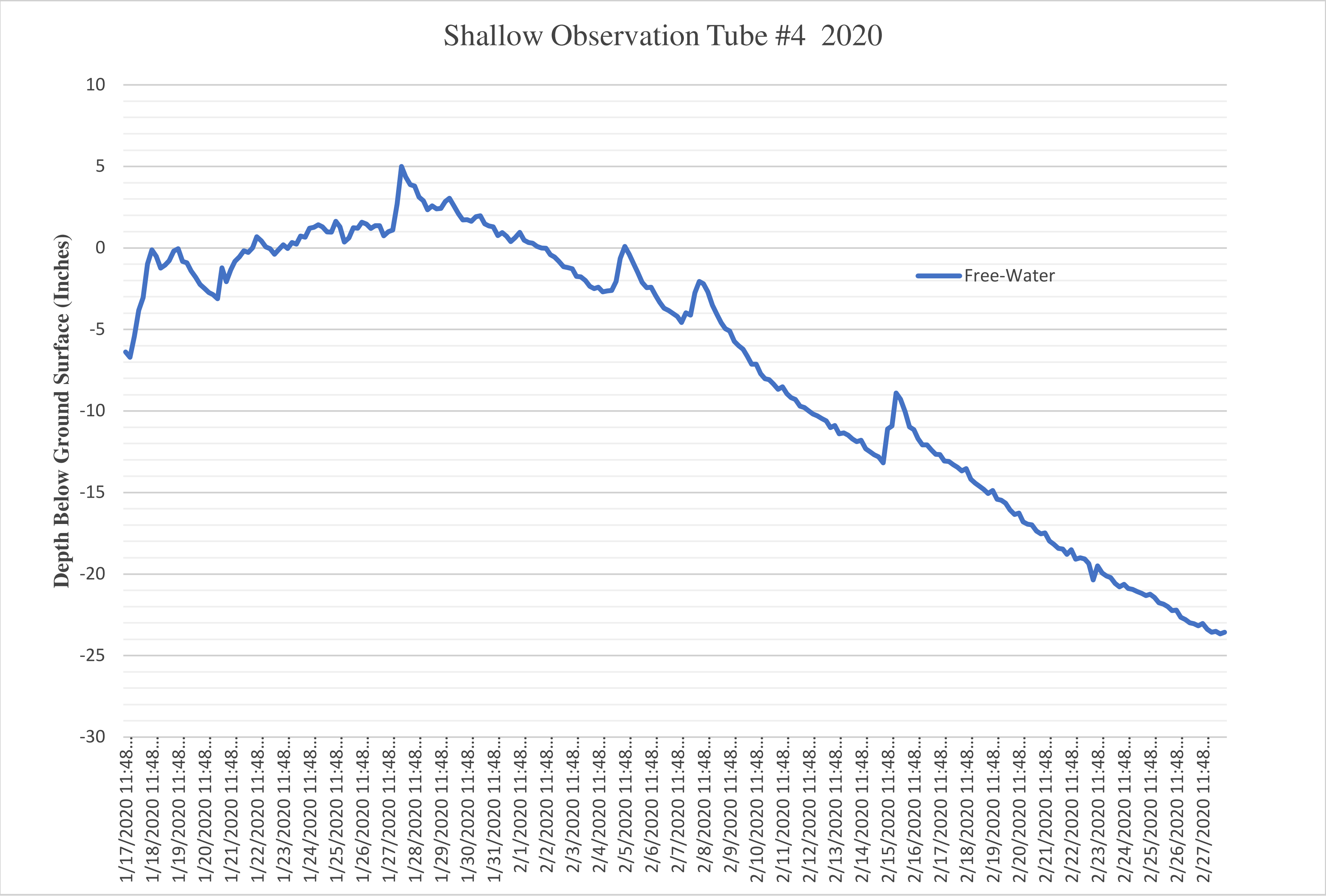
***This plot was near a shallow observation tube.**

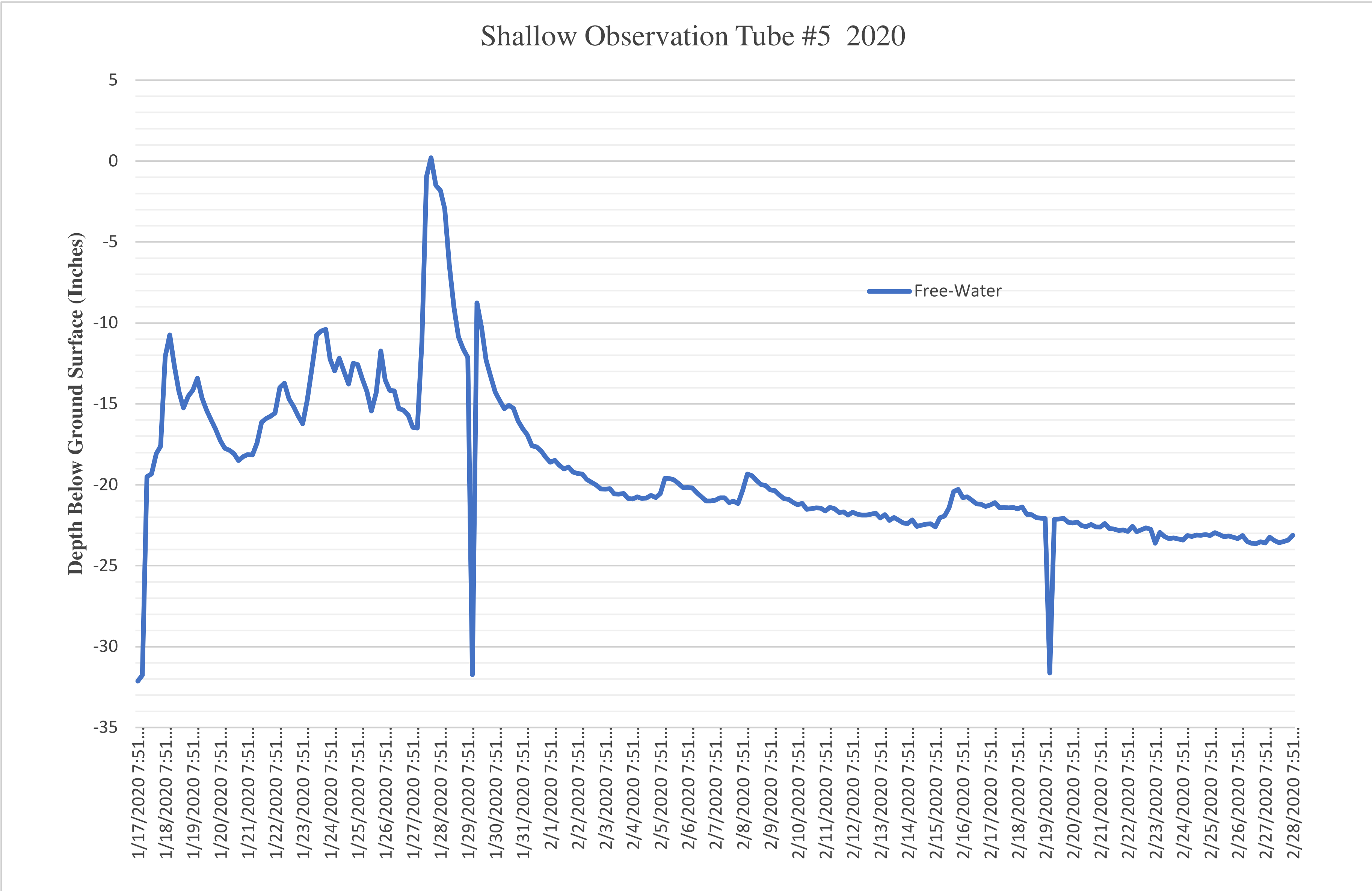
Notes: Data displayed are "depth to free-water" measurements in inches. Cells displaying "IN" means Inundated in inches. Cells diplaying ">24.0" were dry to the bottom of the 24 inch hole.

Shallow Observation Tube #1 2020




Shallow Observation Tube #3 2020
Depth Below Ground Surface (Inches)
10
5
0
-5
-10
-15
-20
-25
-30
-35
Free-Water
1/17/2020 11:42...
1/18/2020 15:42...
1/19/2020 19:42...
1/20/2020 23:42...
1/22/2020 3:42...
1/23/2020 7:42...
1/24/2020 11:42...
1/25/2020 15:42...
1/26/2020 19:42...
1/27/2020 23:42...
1/29/2020 3:42...
1/30/2020 7:42...
1/31/2020 11:42...
2/1/2020 15:42...
2/2/2020 19:42...
2/3/2020 23:42...
2/5/2020 3:42...
2/6/2020 7:42...
2/7/2020 11:42...
2/8/2020 15:42...
2/9/2020 19:42...
2/10/2020 23:42...
2/12/2020 3:42...
2/13/2020 7:42...
2/14/2020 11:42...
2/15/2020 15:42...
2/16/2020 19:42...
2/17/2020 23:42...
2/19/2020 3:42...
2/20/2020 7:42...
2/21/2020 11:42...
2/22/2020 15:42...
2/23/2020 19:42...
2/24/2020 23:42...
2/26/2020 3:42...
2/27/2020 7:42...


Shallow Observation Tube #4 2020
Depth Below Ground Surface (Inches)
10
5
0
-5
-10
-15
-20
-25
-30
Free-Water
1/17/2020 11:48...
1/18/2020 11:48...
1/19/2020 11:48...
1/20/2020 11:48...
1/21/2020 11:48...
1/22/2020 11:48...
1/23/2020 11:48...
1/24/2020 11:48...
1/25/2020 11:48...
1/26/2020 11:48...
1/27/2020 11:48...
1/28/2020 11:48...
1/29/2020 11:48...
1/30/2020 11:48...
1/31/2020 11:48...
2/1/2020 11:48...
2/2/2020 11:48...
2/3/2020 11:48...
2/4/2020 11:48...
2/5/2020 11:48...
2/6/2020 11:48...
2/7/2020 11:48...
2/8/2020 11:48...
2/9/2020 11:48...
2/10/2020 11:48...
2/11/2020 11:48...
2/12/2020 11:48...
2/13/2020 11:48...
2/14/2020 11:48...
2/15/2020 11:48...
2/16/2020 11:48...
2/17/2020 11:48...
2/18/2020 11:48...
2/19/2020 11:48...
2/20/2020 11:48...
2/21/2020 11:48...
2/22/2020 11:48...
2/23/2020 11:48...
2/24/2020 11:48...
2/25/2020 11:48...
2/26/2020 11:48...
2/27/2020 11:48...


Shallow Observation Tube #5 2020
Depth Below Ground Surface (Inches)
5
0
-5
-10
-15
-20
-25
-30
-35
Free-Water
1/17/2020 7:51…
1/18/2020 7:51…
1/19/2020 7:51…
1/20/2020 7:51…
1/21/2020 7:51…
1/22/2020 7:51…
1/23/2020 7:51…
1/24/2020 7:51…
1/25/2020 7:51…
1/26/2020 7:51…
1/27/2020 7:51…
1/28/2020 7:51…
1/29/2020 7:51…
1/30/2020 7:51…
1/31/2020 7:51…
2/1/2020 7:51…
2/2/2020 7:51…
2/3/2020 7:51…
2/4/2020 7:51…
2/5/2020 7:51…
2/6/2020 7:51…
2/7/2020 7:51…
2/8/2020 7:51…
2/9/2020 7:51…
2/10/2020 7:51…
2/11/2020 7:51…
2/12/2020 7:51…
2/13/2020 7:51…
2/14/2020 7:51…
2/15/2020 7:51…
2/16/2020 7:51…
2/17/2020 7:51…
2/18/2020 7:51…
2/19/2020 7:51…
2/20/2020 7:51…
2/21/2020 7:51…
2/22/2020 7:51…
2/23/2020 7:51…
2/24/2020 7:51…
2/25/2020 7:51…
2/26/2020 7:51…
2/27/2020 7:51…
2/28/2020 7:51…

Appendix D: Waters Hydrologic and Hydraulic Studies

Includes:
-Hydraulic Model (HEC-RAS)
-Offsite Drainage: FEMA Flood Insurance Study Figures
-Hydrology Model (HydroCAD)
-Designed Channel Flow Velocity and Erosion Potential
-Darcy's Law Calculation Graphs
-East Fork Dairy Creek Historic Flows Graph
-Designed Channel Activation Frequency Graph

Appendix D:

Hydraulic Model (HEC-RAS)

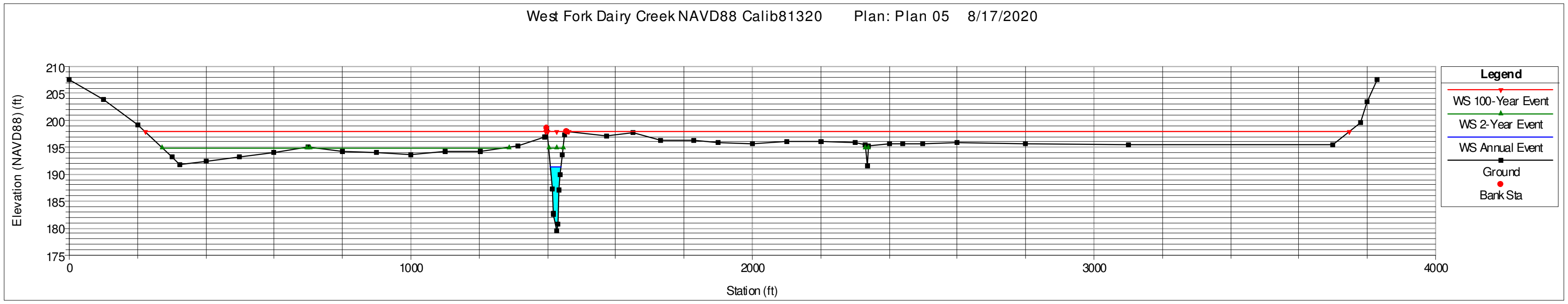
Hydraulic modeling data were acquired for the W. Fork Dairy Creek from the Corps (1980). These data were converted to HEC-RAS for use in the hydraulic model. The model can predict surface water elevations for various flow rates at model Station locations (Stations shown on Figure 6). The Channel and Floodplain Cross Sections provided are for river stations that were useful for the project design; these cross sections display various flood event elevations at Station locations allowing us to determine the depth of surface water in designed channels. The Cross Section at River Station 16.01 is located at HWY 6. *Note that the project design will not change any of these surface water levels predicted for various events at HWY 6.*

Offsite Drainage: Figures 1 and 2

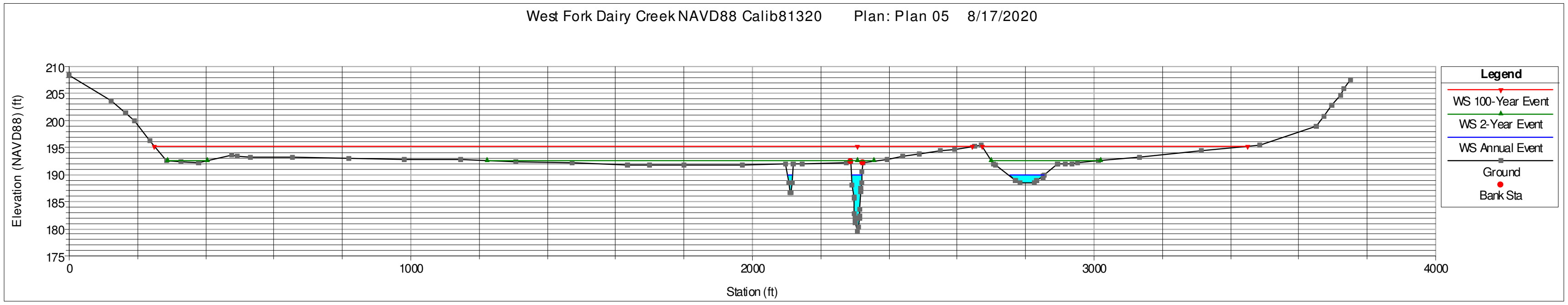
These figures display the 3 locations where flood waters flow under HWY 6; 2 culverts and a bridge. The purpose of evaluating the 3 locations at HWY 6 was to get a better understanding of the size of flood events the culverts were designed for; they are activated at the 2-Year event flow. The DCMB design will not change flood elevations for any flood events; the design will intercept annual event flood water which will flow through the proposed side-channels and back into the perennial W. Fork Dairy Creek. 2-Year events will cause waters to flow into the floodplain and through the HWY 6 culverts as it currently does. The project may decrease the flow through these culverts as it will provide additional flood storage and delay from the removal of artificial drainage features.

HYDRAULIC MODEL (HEC-RAS)

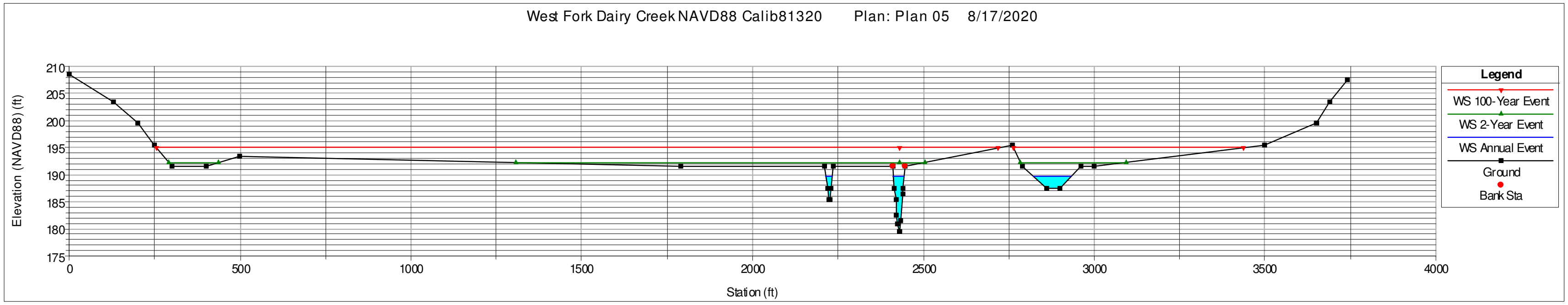
Channel & Floodplain Cross Section at River Station 17.65 (Stream Channel Inlet #1)



Channel & Floodplain Cross Section at River Station 17.30 (Stream Channel Inlet #2)

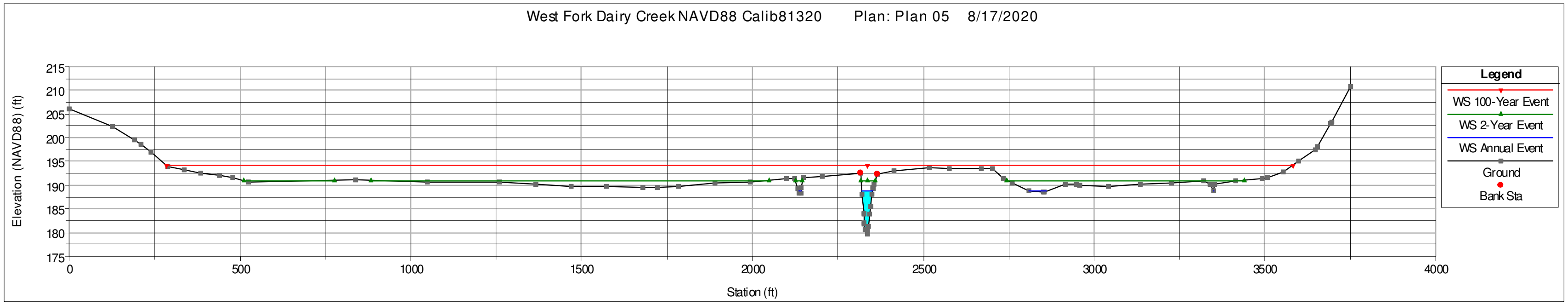


Channel & Floodplain Cross Section at River Station 17.25 (Stream Channel Inlet #3)

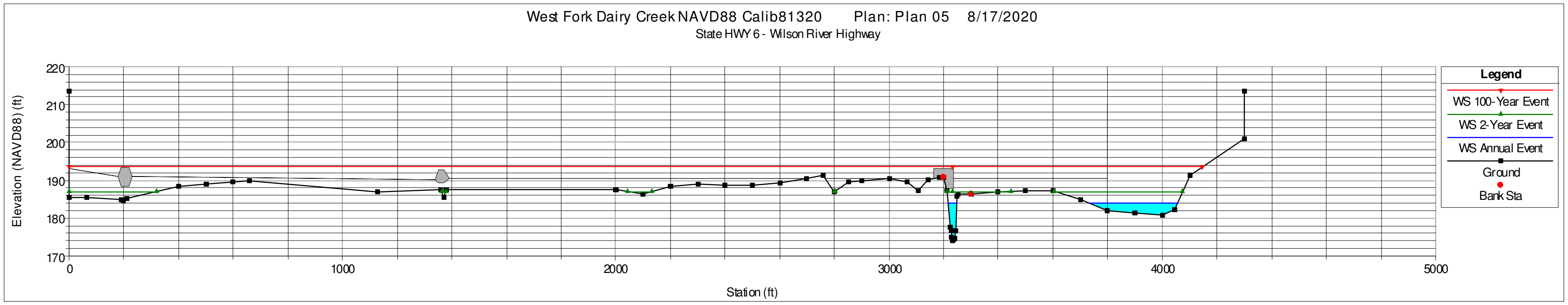


HYDRAULIC MODEL (HEC-RAS)

Channel & Floodplain Cross Section at River Station 17.06 (Lower end of project reach)

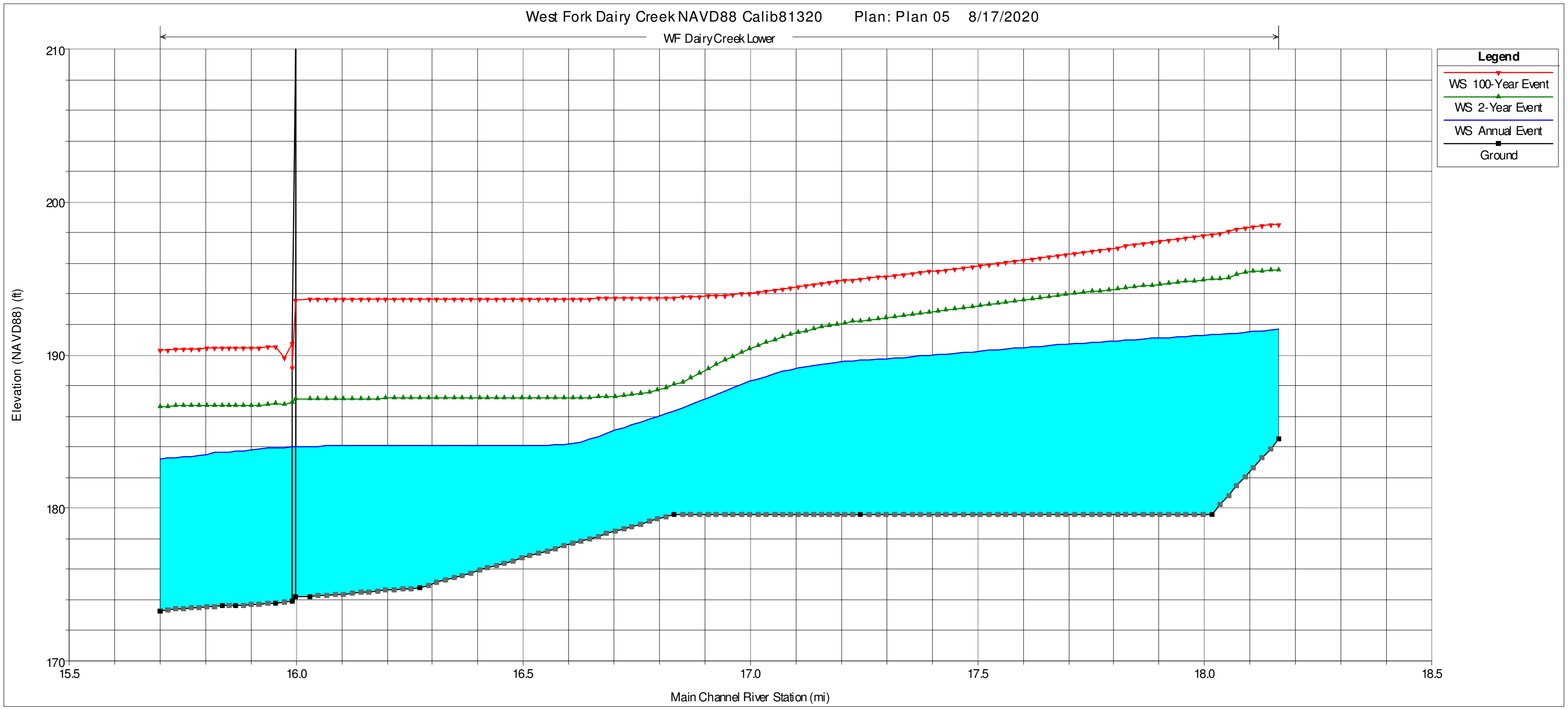


Channel & Floodplain Cross Section at River Station 16.01 (HWY 6 Bridge)



West Fork Dairy Creek Flood Profiles

Project Reach is From Main Channel River Station 17.06 to 17.65



HYDRAULIC MODEL (HEC-RAS)

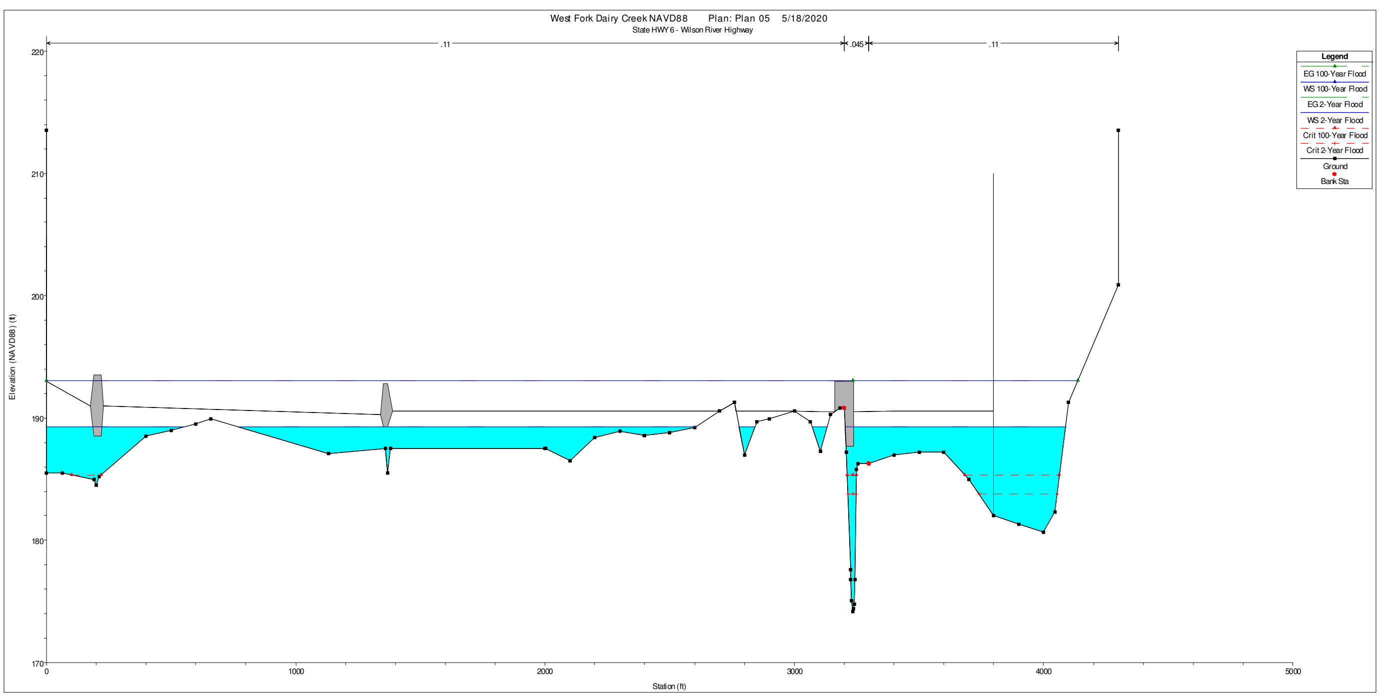
Dairy Creek Wetland Mitigation Bank
Water Surface Elevations and Flow Velocities at Constructed Channel Inlets
Data from HEC-RAS Hydraulic Model

Reach	River Sta	Profile	Flow Total	Min Chan.	W.S.	Channel
				Elevation	Elevation	Flow Velocity
			(cfs)	NAVD (ft)	NAVD (ft)	(ft/s)
Lower	17.65	Annual Event	315	179.6	191.33	1.45
Lower	17.65	2-Year Event	1171	179.6	194.95	2.19
Lower	17.65	100-Year Event	8240	179.6	197.85	2.8
Lower	17.299*	Annual Event	315	179.6	189.84	1.55
Lower	17.299*	2-Year Event	1171	179.6	192.56	2.37
Lower	17.299*	100-Year Event	8240	179.6	195.26	2.89
Lower	17.25	Annual Event	315	179.6	189.66	1.37
Lower	17.25	2-Year Event	1171	179.6	192.25	2.17
Lower	17.25	100-Year Event	8240	179.6	194.99	2.71

Dairy Creek Wetland Mitigation Bank Offsite Drainage

Figure 1: Oregon Highway 6 Culverts Southwest of Banks, Oregon (looking south) are circled in red. Dairy Creek drains through third culvert on right. Culvert on left is near SW corner of DCMB project area.

Figure 2: HEC-RAS Hydraulic Model Output (looking south and downstream). Blue shaded area shows cross section of 2-year event. Upper horizontal line indicates water surface elevation of 100-year event. Gray areas indicate road section at culvert locations. Note that all three flows come together between the 2-year and 100-year events.



Appendix D:

Hydrology Model: HydroCAD

The hydrology model was built in HydroCAD by Ecological Engineering LLC (Gorman 2020). The drainage basin which directly drains to the DCMB project area was delineated to be approximately 30,962 acres. Most of the land is covered by forest and agriculture. The Hillsboro Airport NWS precipitation data were used to predict the various events produced by the model. The model was calibrated to the FEMA 100-year peak flow from the 2018 Flood Insurance Study (FEMA 2018). Flow rates for various precipitation events are provided: annual, 2, 10, 25, 50, and 100-Year events.

Summary for Subcatchment 1S: W Fork Dairy Creek Above Banks

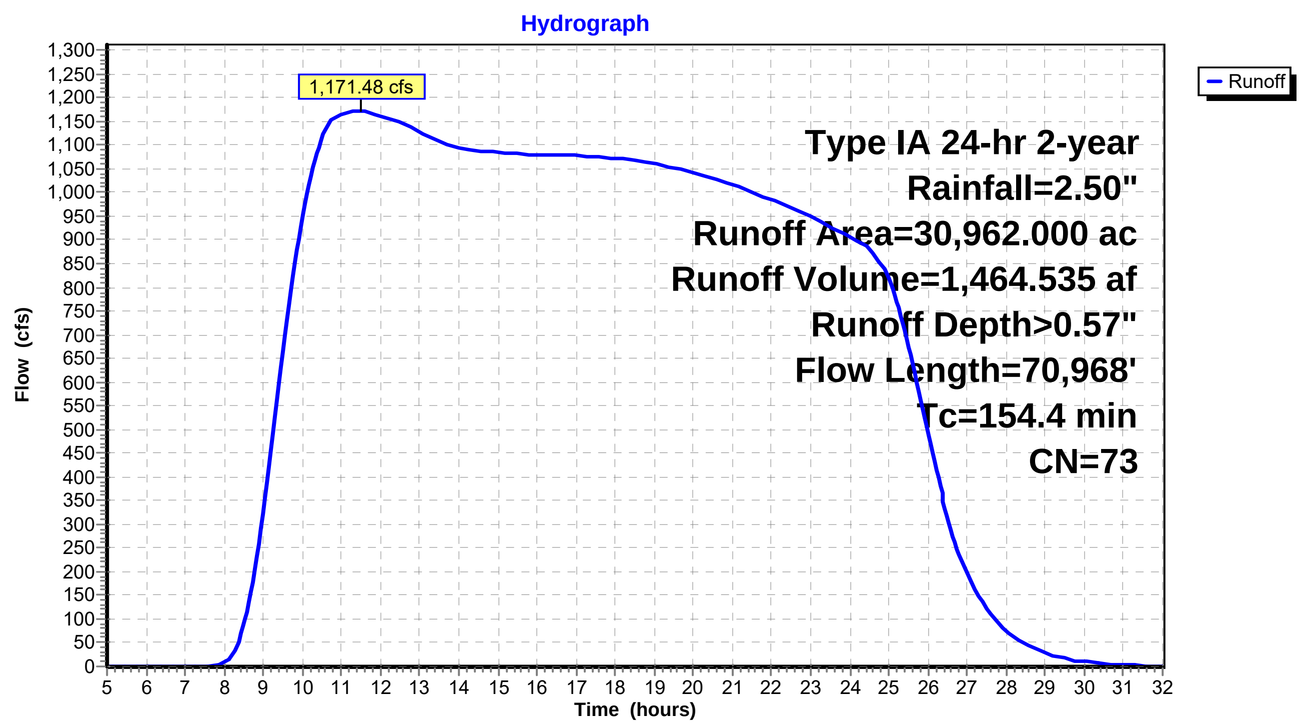
Runoff = 1,171.48 cfs @ 11.48 hrs, Volume= 1,464.535 af, Depth> 0.57"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-32.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2-year Rainfall=2.50"

Area (ac)	CN	Description
* 12,385.000	66	Woods, Poor, HSG B
* 18,577.000	77	Woods, Poor, HSG C
30,962.000	73	Weighted Average
30,962.000		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
36.1	300	0.2670	0.14		**Sheet Flow, WFCD Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.50"
10.8	900	0.3110	1.39		**Shallow Concentrated Flow, Shallow Concentrated Flow** Forest w/Heavy Litter Kv= 2.5 fps
6.5	11,628	0.0791	29.81	6,856.75	**Trap/Vee/Rect Channel Flow, Upper channel (Vee Shape)** Bot.W=3.00' D=10.00' Z= 2.0 '/' Top.W=43.00' n= 0.040
101.0	58,140	0.0069	9.59	2,878.38	**Trap/Vee/Rect Channel Flow, Lower Channel** Bot.W=10.00' D=10.00' Z= 2.0 '/' Top.W=50.00' n= 0.040
154.4	70,968	Total			

Subcatchment 1S: W Fork Dairy Creek Above Banks



Summary for Subcatchment 1S: W Fork Dairy Creek Above Banks

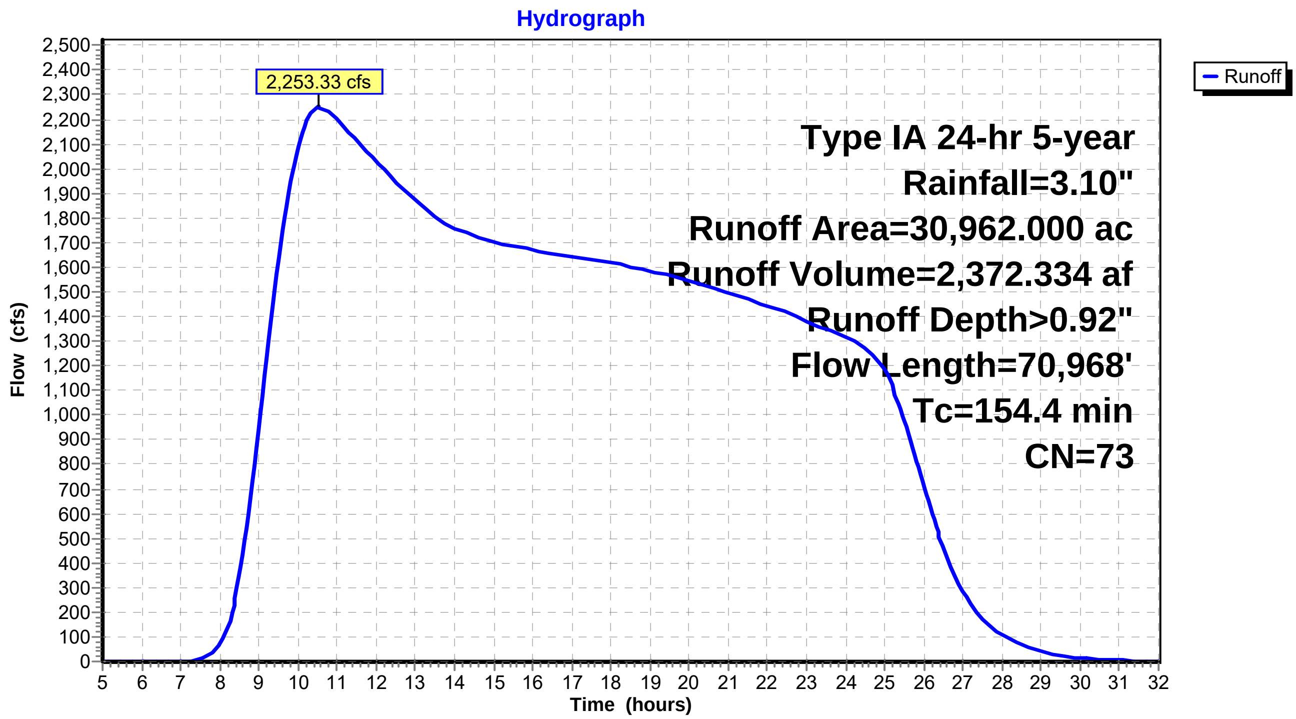
Runoff = 2,253.33 cfs @ 10.51 hrs, Volume= 2,372.334 af, Depth> 0.92"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-32.00 hrs, dt= 0.05 hrs
Type IA 24-hr 5-year Rainfall=3.10"

Area (ac)	CN	Description
* 12,385.000	66	Woods, Poor, HSG B
* 18,577.000	77	Woods, Poor, HSG C
30,962.000	73	Weighted Average
30,962.000		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
36.1	300	0.2670	0.14		**Sheet Flow, WFCD Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.50"
10.8	900	0.3110	1.39		**Shallow Concentrated Flow, Shallow Concentrated Flow** Forest w/Heavy Litter Kv= 2.5 fps
6.5	11,628	0.0791	29.81	6,856.75	**Trap/Vee/Rect Channel Flow, Upper channel (Vee Shape)** Bot.W=3.00' D=10.00' Z= 2.0 '/' Top.W=43.00' n= 0.040
101.0	58,140	0.0069	9.59	2,878.38	**Trap/Vee/Rect Channel Flow, Lower Channel** Bot.W=10.00' D=10.00' Z= 2.0 '/' Top.W=50.00' n= 0.040
154.4	70,968	Total			

Subcatchment 1S: W Fork Dairy Creek Above Banks



Summary for Subcatchment 1S: W Fork Dairy Creek Above Banks

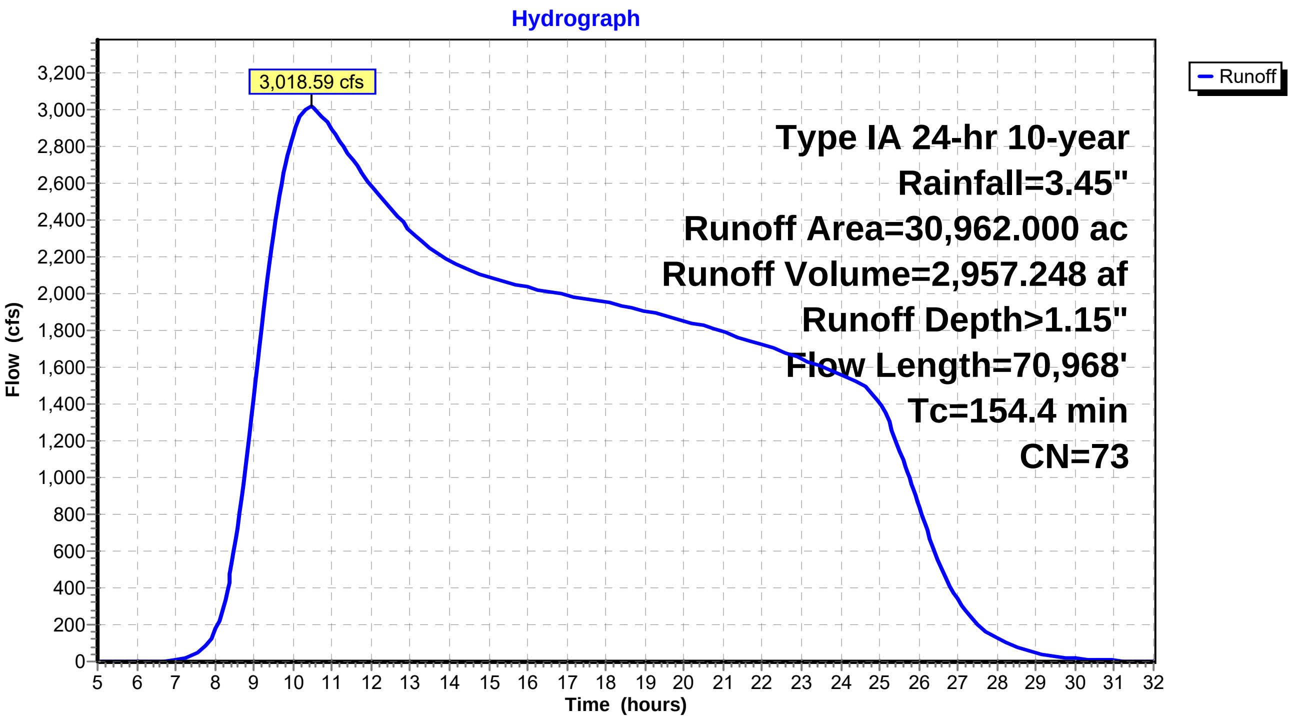
Runoff = 3,018.59 cfs @ 10.45 hrs, Volume= 2,957.248 af, Depth> 1.15"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-32.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-year Rainfall=3.45"

Area (ac)	CN	Description
* 12,385.000	66	Woods, Poor, HSG B
* 18,577.000	77	Woods, Poor, HSG C
30,962.000	73	Weighted Average
30,962.000		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
36.1	300	0.2670	0.14		**Sheet Flow, WFCD Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.50"
10.8	900	0.3110	1.39		**Shallow Concentrated Flow, Shallow Concentrated Flow** Forest w/Heavy Litter Kv= 2.5 fps
6.5	11,628	0.0791	29.81	6,856.75	**Trap/Vee/Rect Channel Flow, Upper channel (Vee Shape)** Bot.W=3.00' D=10.00' Z= 2.0 '/' Top.W=43.00' n= 0.040
101.0	58,140	0.0069	9.59	2,878.38	**Trap/Vee/Rect Channel Flow, Lower Channel** Bot.W=10.00' D=10.00' Z= 2.0 '/' Top.W=50.00' n= 0.040
154.4	70,968	Total			

Subcatchment 1S: W Fork Dairy Creek Above Banks



Summary for Subcatchment 1S: W Fork Dairy Creek Above Banks

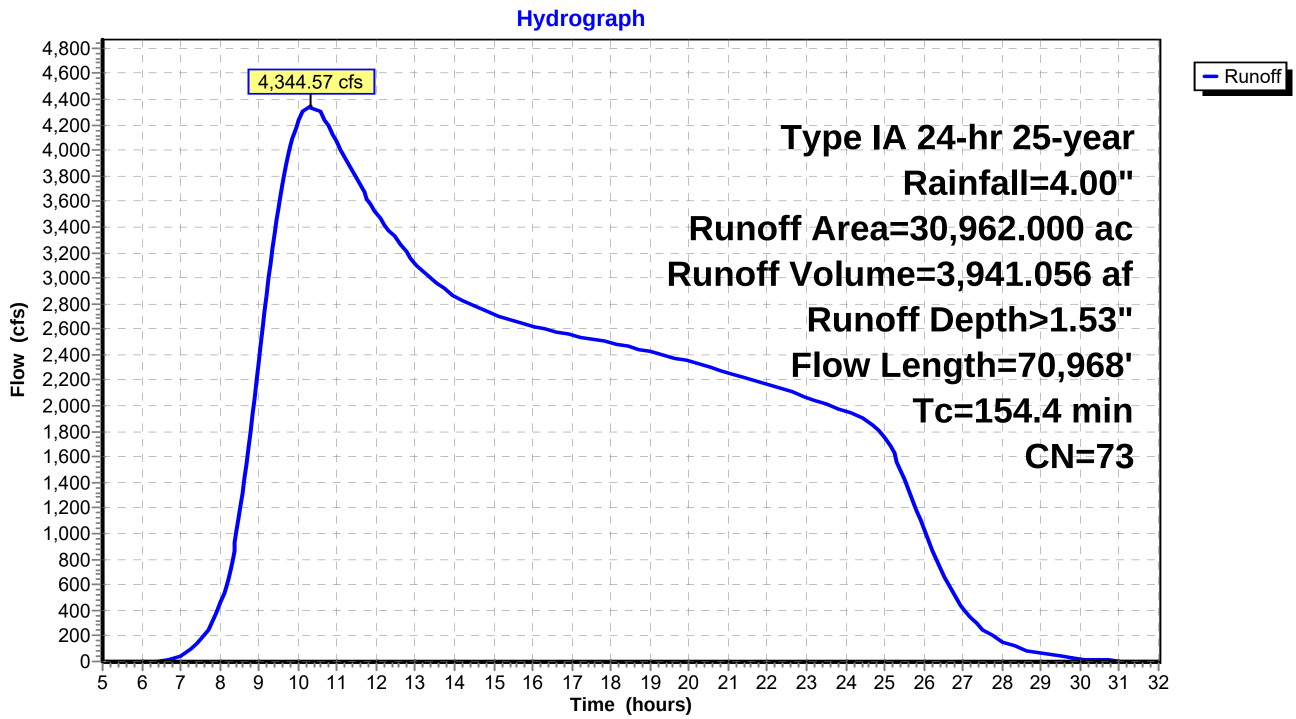
Runoff = 4,344.57 cfs @ 10.32 hrs, Volume= 3,941.056 af, Depth> 1.53"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-32.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25-year Rainfall=4.00"

Area (ac)	CN	Description
* 12,385.000	66	Woods, Poor, HSG B
* 18,577.000	77	Woods, Poor, HSG C
30,962.000	73	Weighted Average
30,962.000		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
36.1	300	0.2670	0.14		**Sheet Flow, WFCD Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.50"
10.8	900	0.3110	1.39		**Shallow Concentrated Flow, Shallow Concentrated Flow** Forest w/Heavy Litter Kv= 2.5 fps
6.5	11,628	0.0791	29.81	6,856.75	**Trap/Vee/Rect Channel Flow, Upper channel (Vee Shape)** Bot.W=3.00' D=10.00' Z= 2.0 '/' Top.W=43.00' n= 0.040
101.0	58,140	0.0069	9.59	2,878.38	**Trap/Vee/Rect Channel Flow, Lower Channel** Bot.W=10.00' D=10.00' Z= 2.0 '/' Top.W=50.00' n= 0.040
154.4	70,968	Total			

Subcatchment 1S: W Fork Dairy Creek Above Banks



Summary for Subcatchment 1S: W Fork Dairy Creek Above Banks

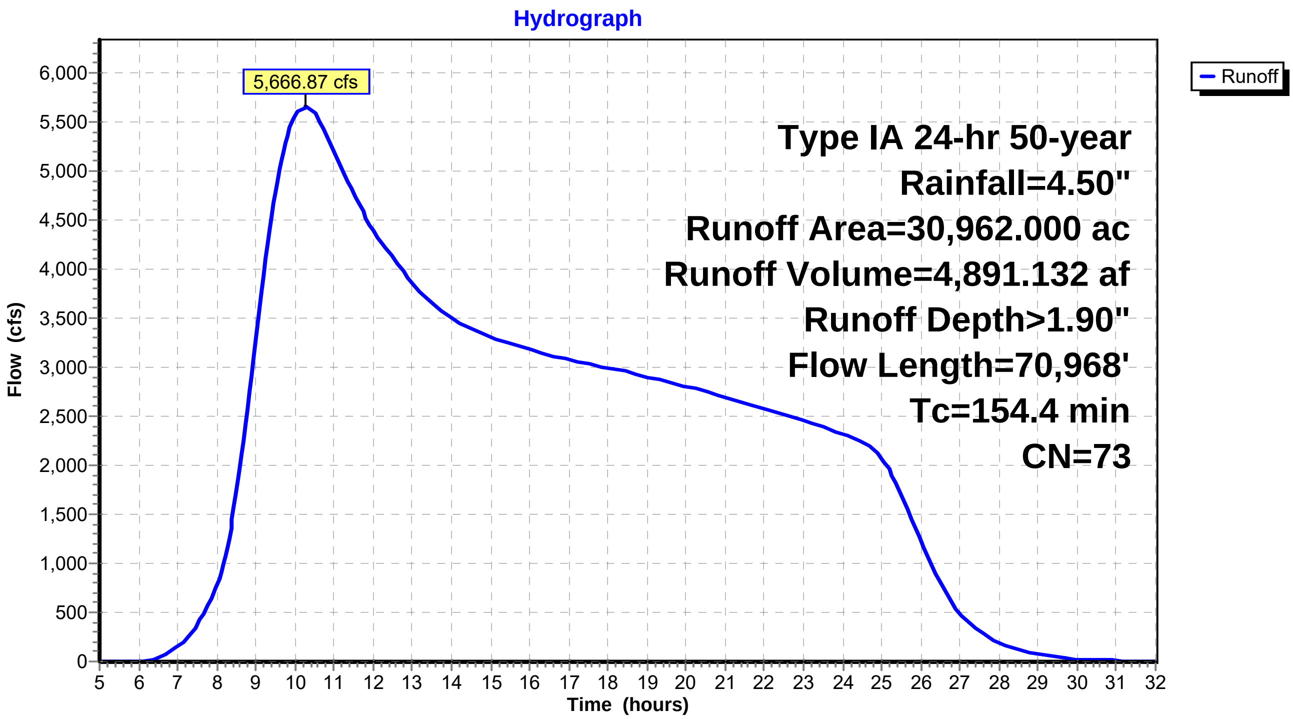
Runoff = 5,666.87 cfs @ 10.28 hrs, Volume= 4,891.132 af, Depth> 1.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-32.00 hrs, dt= 0.05 hrs
Type IA 24-hr 50-year Rainfall=4.50"

Area (ac)	CN	Description
* 12,385.000	66	Woods, Poor, HSG B
* 18,577.000	77	Woods, Poor, HSG C
30,962.000	73	Weighted Average
30,962.000		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
36.1	300	0.2670	0.14		**Sheet Flow, WFCD Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.50"
10.8	900	0.3110	1.39		**Shallow Concentrated Flow, Shallow Concentrated Flow** Forest w/Heavy Litter Kv= 2.5 fps
6.5	11,628	0.0791	29.81	6,856.75	**Trap/Vee/Rect Channel Flow, Upper channel (Vee Shape)** Bot.W=3.00' D=10.00' Z= 2.0 '/' Top.W=43.00' n= 0.040
101.0	58,140	0.0069	9.59	2,878.38	**Trap/Vee/Rect Channel Flow, Lower Channel** Bot.W=10.00' D=10.00' Z= 2.0 '/' Top.W=50.00' n= 0.040
154.4	70,968	Total			

Subcatchment 1S: W Fork Dairy Creek Above Banks



Summary for Subcatchment 1S: W Fork Dairy Creek Above Banks

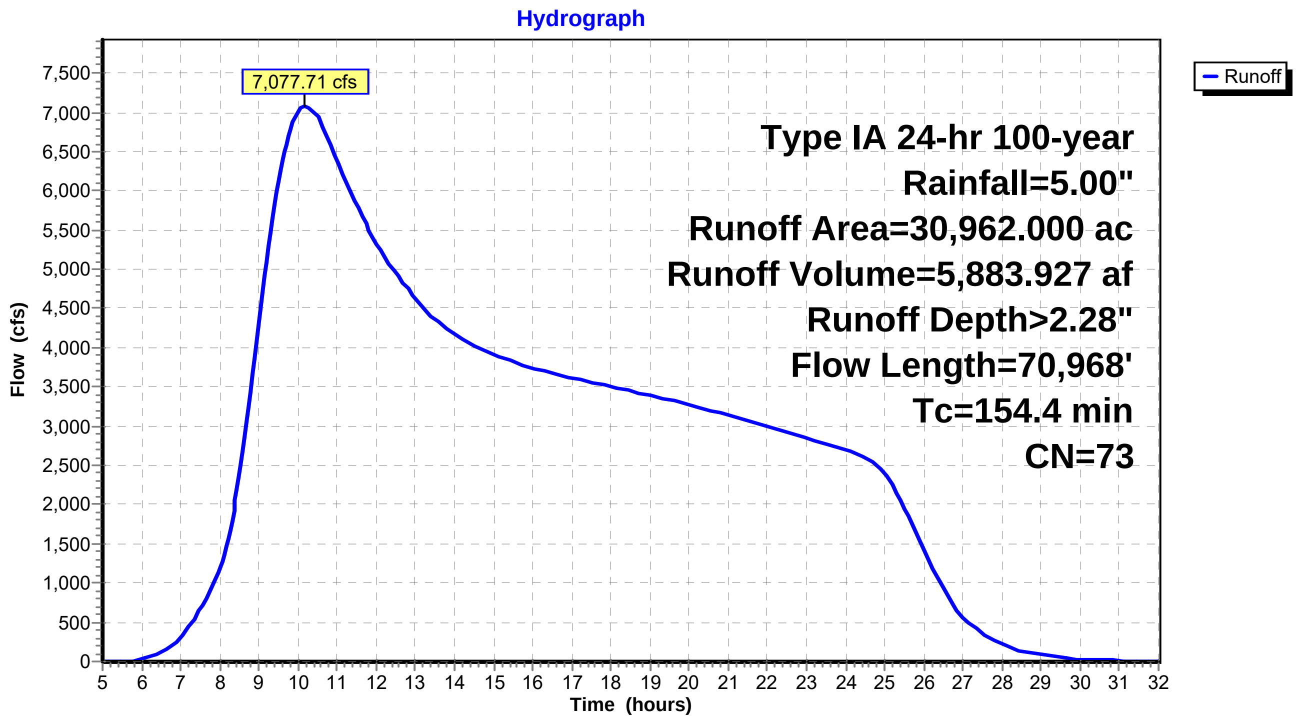
Runoff = 7,077.71 cfs @ 10.16 hrs, Volume= 5,883.927 af, Depth> 2.28"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-32.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100-year Rainfall=5.00"

Area (ac)	CN	Description
* 12,385.000	66	Woods, Poor, HSG B
* 18,577.000	77	Woods, Poor, HSG C
30,962.000	73	Weighted Average
30,962.000		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
36.1	300	0.2670	0.14		**Sheet Flow, WFCD Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.50"
10.8	900	0.3110	1.39		**Shallow Concentrated Flow, Shallow Concentrated Flow** Forest w/Heavy Litter Kv= 2.5 fps
6.5	11,628	0.0791	29.81	6,856.75	**Trap/Vee/Rect Channel Flow, Upper channel (Vee Shape)** Bot.W=3.00' D=10.00' Z= 2.0 '/' Top.W=43.00' n= 0.040
101.0	58,140	0.0069	9.59	2,878.38	**Trap/Vee/Rect Channel Flow, Lower Channel** Bot.W=10.00' D=10.00' Z= 2.0 '/' Top.W=50.00' n= 0.040
154.4	70,968	Total			

Subcatchment 1S: W Fork Dairy Creek Above Banks



Summary for Subcatchment 1S: W Fork Dairy Creek Above Banks

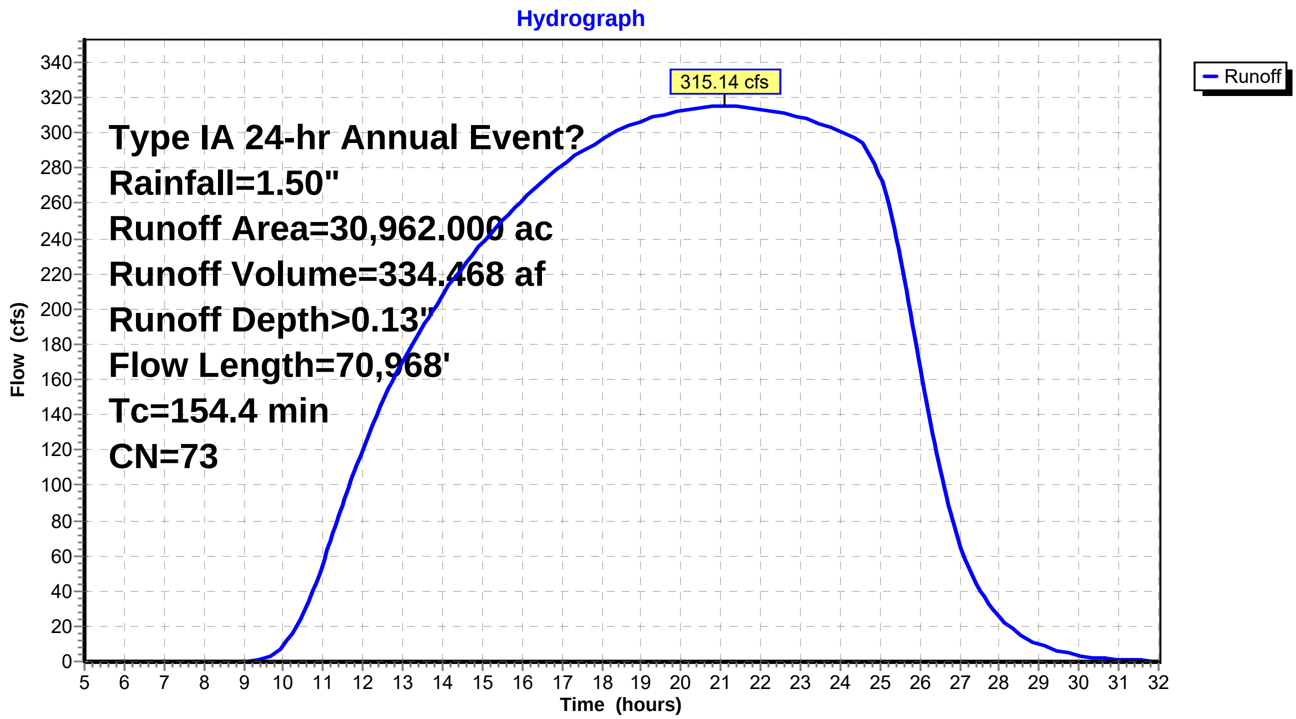
Runoff = 315.14 cfs @ 21.10 hrs, Volume= 334.468 af, Depth> 0.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-32.00 hrs, dt= 0.05 hrs
Type IA 24-hr Annual Event? Rainfall=1.50"

Area (ac)	CN	Description
* 12,385.000	66	Woods, Poor, HSG B
* 18,577.000	77	Woods, Poor, HSG C
30,962.000	73	Weighted Average
30,962.000		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
36.1	300	0.2670	0.14		**Sheet Flow, WFCD Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.50"
10.8	900	0.3110	1.39		**Shallow Concentrated Flow, Shallow Concentrated Flow** Forest w/Heavy Litter Kv= 2.5 fps
6.5	11,628	0.0791	29.81	6,856.75	**Trap/Vee/Rect Channel Flow, Upper channel (Vee Shape)** Bot.W=3.00' D=10.00' Z= 2.0 '/' Top.W=43.00' n= 0.040
101.0	58,140	0.0069	9.59	2,878.38	**Trap/Vee/Rect Channel Flow, Lower Channel** Bot.W=10.00' D=10.00' Z= 2.0 '/' Top.W=50.00' n= 0.040
154.4	70,968	Total			

Subcatchment 1S: W Fork Dairy Creek Above Banks



Appendix D:

Designed Channel Flow Velocity and Erosion Potential

Analysis included evaluating erosion potential in proposed channel based on soil type, and predicted flow rates for various flood events.

Dairy Creek Wetland Mitigation Bank
Primary Design Channel Velocity Check and Erosion Potential

Compare Flow Velocity in Design Channel with Dairy Creek

Design Channel Inlet Invert Elevation (ft) =	188.33
Channel Depth Above Which Flooding Occurs (ft) =	5.1
Design Channel Velocity Values Based on Annual Design Channel Flow Depth (ft) =	3

Site Soils:
McBee Silty Clay Loam @ 25-35% clay
Wapato Silty Clay Loam @ 27-35% clay

Maximum allowable mean channel velocity for bare earth channel material (silty clay) (ft/s) = 3.5

Flow Event	**Dairy Creek WSEL (ft)**	**Dairy Creek Flow Velocity (ft/s)**	**Des. Chann. Flow Depth (ft)**	**Des. Chann. Flow Velocity (ft/s)**	**Vel_D/Vel_E**
Annual	191.33	1.45	3	1.72	1.186207
2-Year	194.95	2.19	6.62	2.69	1.228311
5-Year	195.86	2.63	7.53	2.9	1.102662
10-Year	196.73	2.74	8.4	2.93	1.069343
50-Year	197.31	2.79	8.98	2.93	1.050179
100-Year	197.55	1.4	9.22	2.93	2.092857

CONCLUSIONS:
1. Flow velocities in the primary channel will be greater than velocities in Dairy Creek at all flows.
2. Significant sedimentation in the primary channel is not likely to occur.
3. Allowable maximim mean velocities for a bare earth channel material of silty clay is 3.5 ft/s.
4. Estimated velocities in the primary channel are expected to remain below 3.5 ft/s at all flows.
5. Significant erosion in the primary channel is not likely to occur.

Appendix D:

Groundwater Depression Calculation: Darcy's Law

Analysis calculated width of soil drainage based on depth of excavation, soil type, and precipitation amount. Graphs display width of drainage by depth for various precipitation events.

Dairy Creek Wetland Mitigation Bank
Groundwater Depression Calculation -
Resulting From Stream Channel Construction

Use Darcy's Law to solve for width of dewatering (dl)

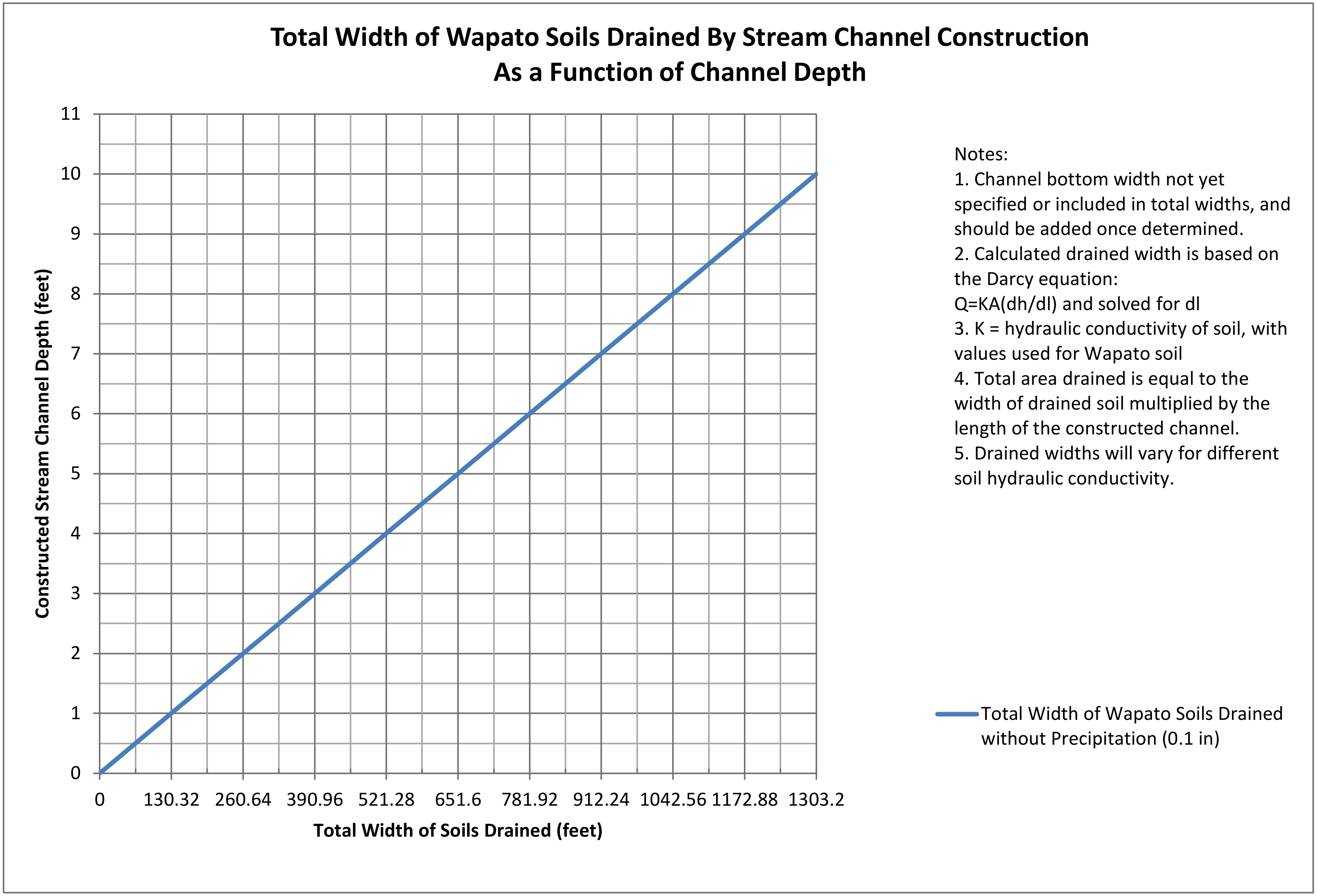
Q=KA(dh/dl)
Where:
Q = groundwater flow
K = hydraulic conductivity of soil
A = area of flow perpendicular to flow
dh= head loss
dl= distance of flow
dh/dl= hydraulic slope

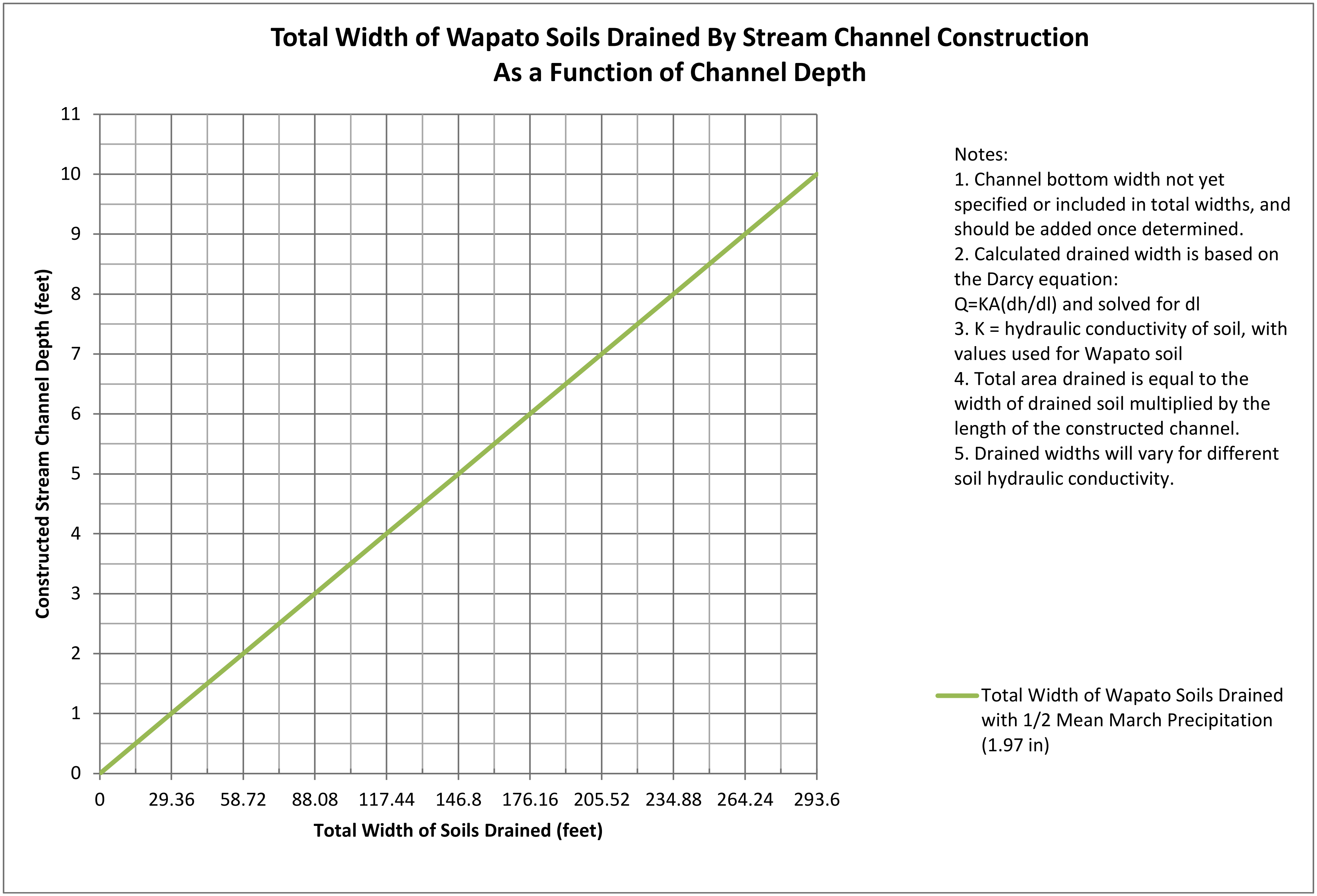
Solving for dl:
dl = KA(dh)/Q

Assumptions:
1. If Q is </= precipitation, no dewatering will occur
2. Calculations should use mean March precipation
3. Primary soils of concern are NRCS Wapato silty clay loam
4. Secondary soils of concern are NRCS McBee silty clay loam

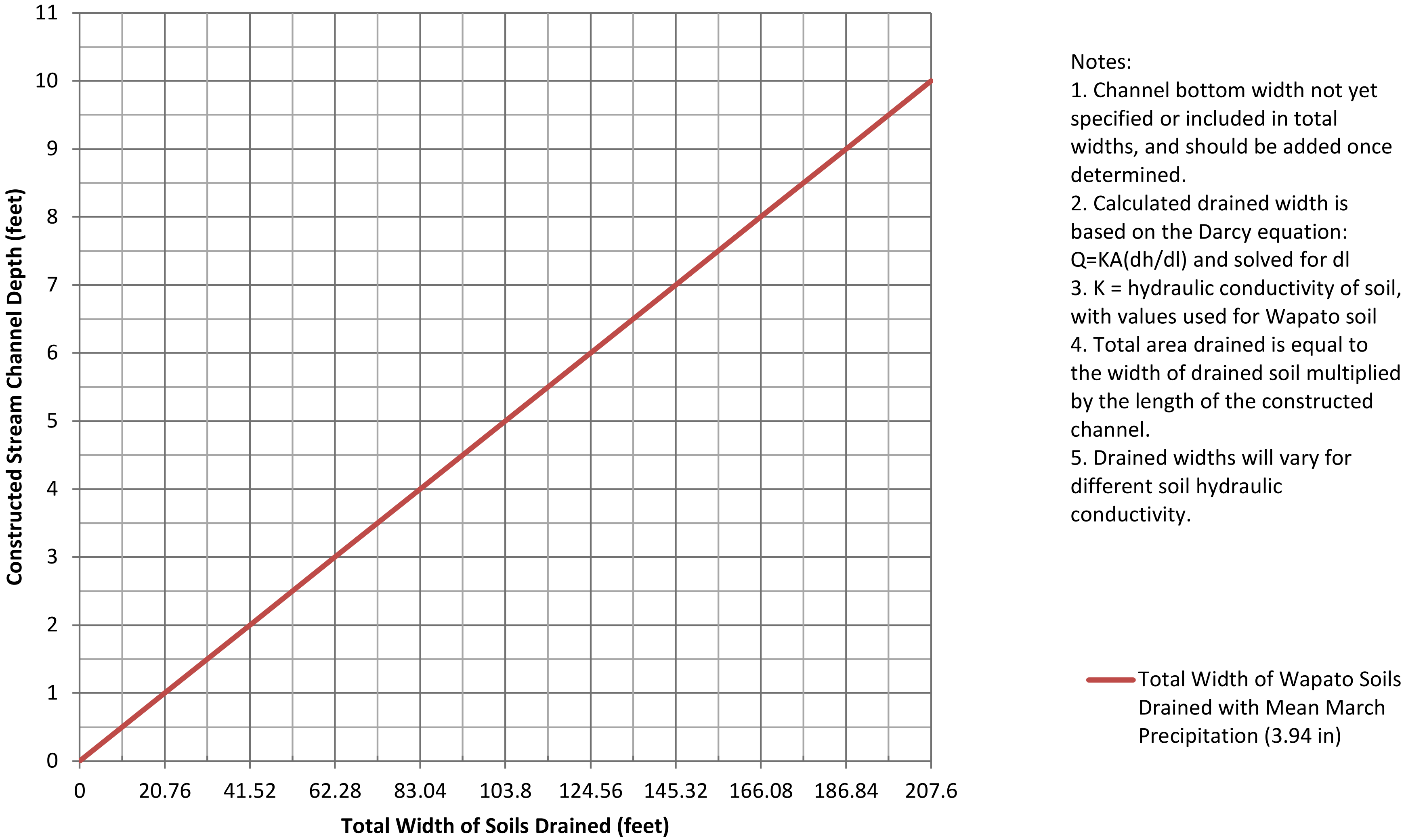
		M. March
Mean March Precipitation (in) =	3.94	3.94
Mean March Daily Precipitation (ft) =	0.010591	
Wapato Soil Hydraulic Conductivity (micrometer/sec) =	4.0261	
McBee Soil Hydraulic Conductivity (micrometer/sec) =	6.5858	
Design Channel Bottom Width (ft) =	0	
Channel Length for Analysis (ft) =	1	
Conversion Factor: micrometer/s to feet/day =	0.2835	

Groundwater Hydraulic Gradient Slope (X:1) =	7.34	5.19
Initial Flow Estimate per Unit Length Channel (cfd/lf) =	0.508387	
Design Channel Side Slope (X:1) =	3	

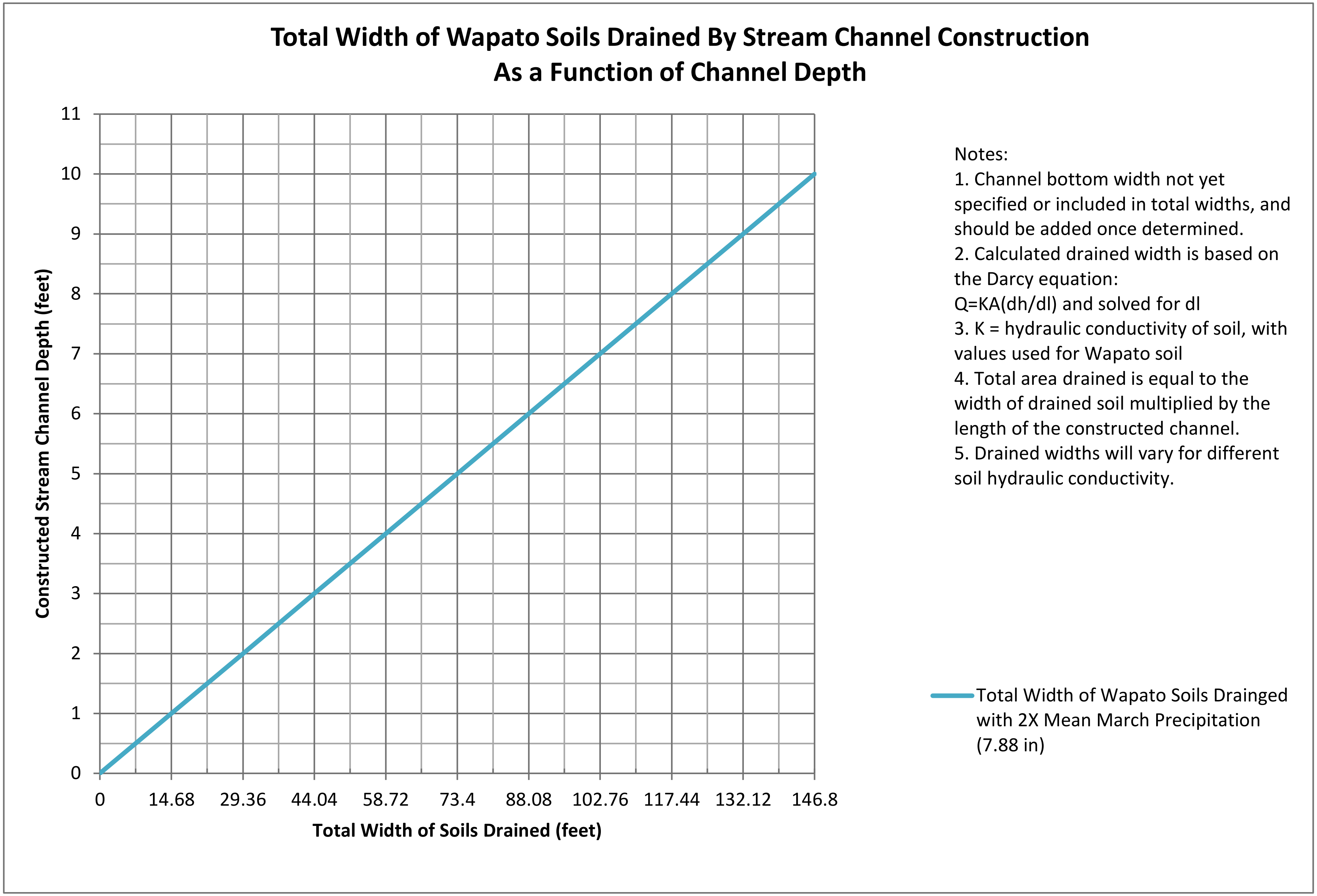

Total Width of Wapato Soils Drained By Stream Channel Construction
As a Function of Channel Depth
Constructed Stream Channel Depth (feet)
0
1
2
3
4
5
6
7
8
9
10
11
0
130.32
260.64
390.96
521.28
651.6
781.92
912.24
1042.56
1172.88
1303.2
Total Width of Soils Drained (feet)
Notes:
1. Channel bottom width not yet specified or included in total widths, and should be added once determined.
2. Calculated drained width is based on the Darcy equation:
Q=KA(dh/dl) and solved for dl
3. K = hydraulic conductivity of soil, with values used for Wapato soil
4. Total area drained is equal to the width of drained soil multiplied by the length of the constructed channel.
5. Drained widths will vary for different soil hydraulic conductivity.
Total Width of Wapato Soils Drained without Precipitation (0.1 in)


Total Width of Wapato Soils Drained By Stream Channel Construction
As a Function of Channel Depth
Constructed Stream Channel Depth (feet)
0
1
2
3
4
5
6
7
8
9
10
11
0
29.36
58.72
88.08
117.44
146.8
176.16
205.52
234.88
264.24
293.6
Total Width of Soils Drained (feet)
Notes:
1. Channel bottom width not yet specified or included in total widths, and should be added once determined.
2. Calculated drained width is based on the Darcy equation:
Q=KA(dh/dl) and solved for dl
3. K = hydraulic conductivity of soil, with values used for Wapato soil
4. Total area drained is equal to the width of drained soil multiplied by the length of the constructed channel.
5. Drained widths will vary for different soil hydraulic conductivity.
Total Width of Wapato Soils Drained with 1/2 Mean March Precipitation (1.97 in)

Total Width of Wapato Soils Drained By Stream Channel Construction As a Function of Channel Depth



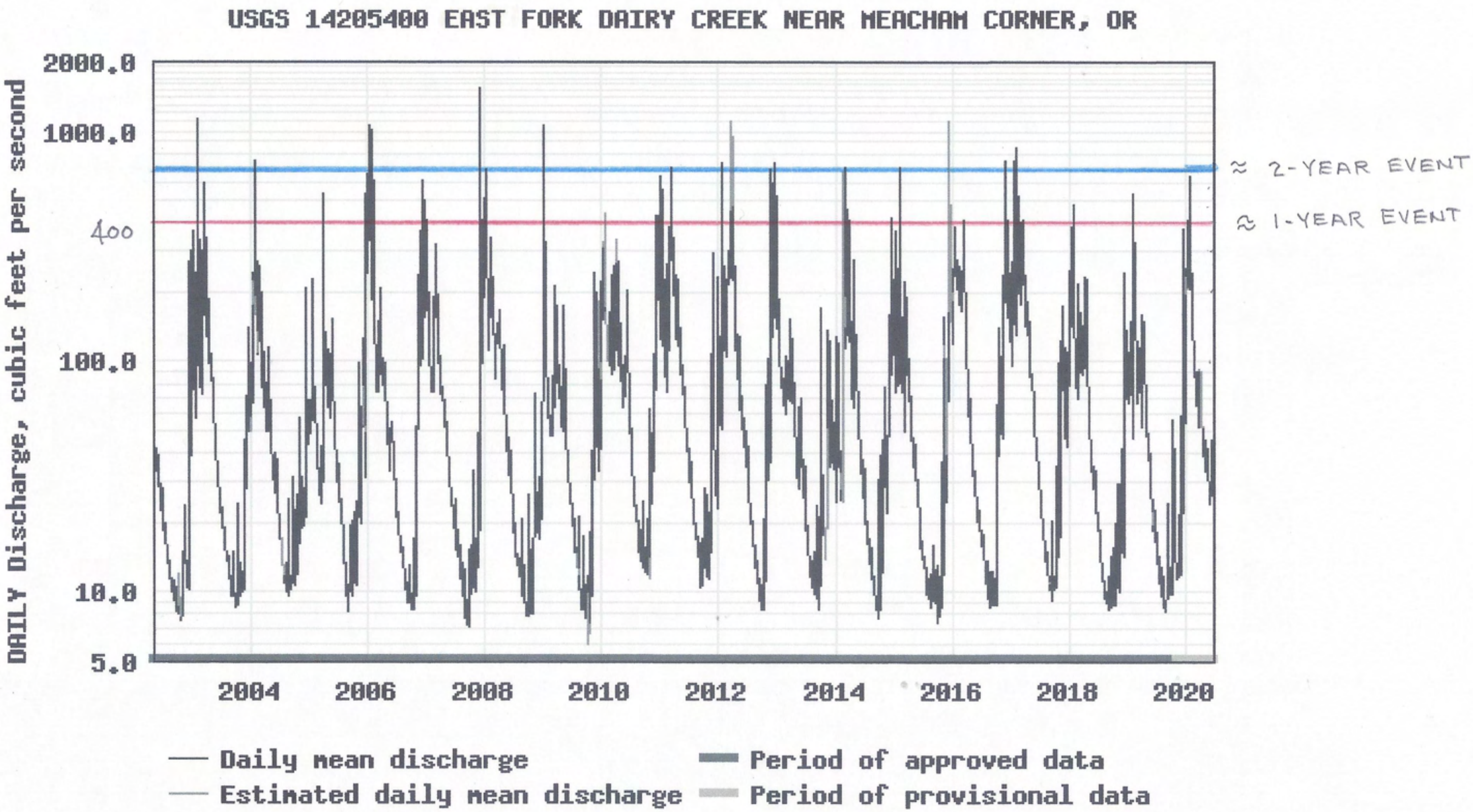
Notes:
1. Channel bottom width not yet specified or included in total widths, and should be added once determined.
2. Calculated drained width is based on the Darcy equation: Q=KA(dh/dl) and solved for dl
3. K = hydraulic conductivity of soil, with values used for Wapato soil
4. Total area drained is equal to the width of drained soil multiplied by the length of the constructed channel.
5. Drained widths will vary for different soil hydraulic conductivity.


Total Width of Wapato Soils Drained By Stream Channel Construction
As a Function of Channel Depth
Constructed Stream Channel Depth (feet)
0
1
2
3
4
5
6
7
8
9
10
11
0
14.68
29.36
44.04
58.72
73.4
88.08
102.76
117.44
132.12
146.8
Total Width of Soils Drained (feet)
Notes:
1. Channel bottom width not yet specified or included in total widths, and should be added once determined.
2. Calculated drained width is based on the Darcy equation:
Q=KA(dh/dl) and solved for dl
3. K = hydraulic conductivity of soil, with values used for Wapato soil
4. Total area drained is equal to the width of drained soil multiplied by the length of the constructed channel.
5. Drained widths will vary for different soil hydraulic conductivity.
Total Width of Wapato Soils Drainged with 2X Mean March Precipitation (7.88 in)

Appendix D:

<u>USGS Stream Gage on East Fork Dairy Creek (Graph)</u>

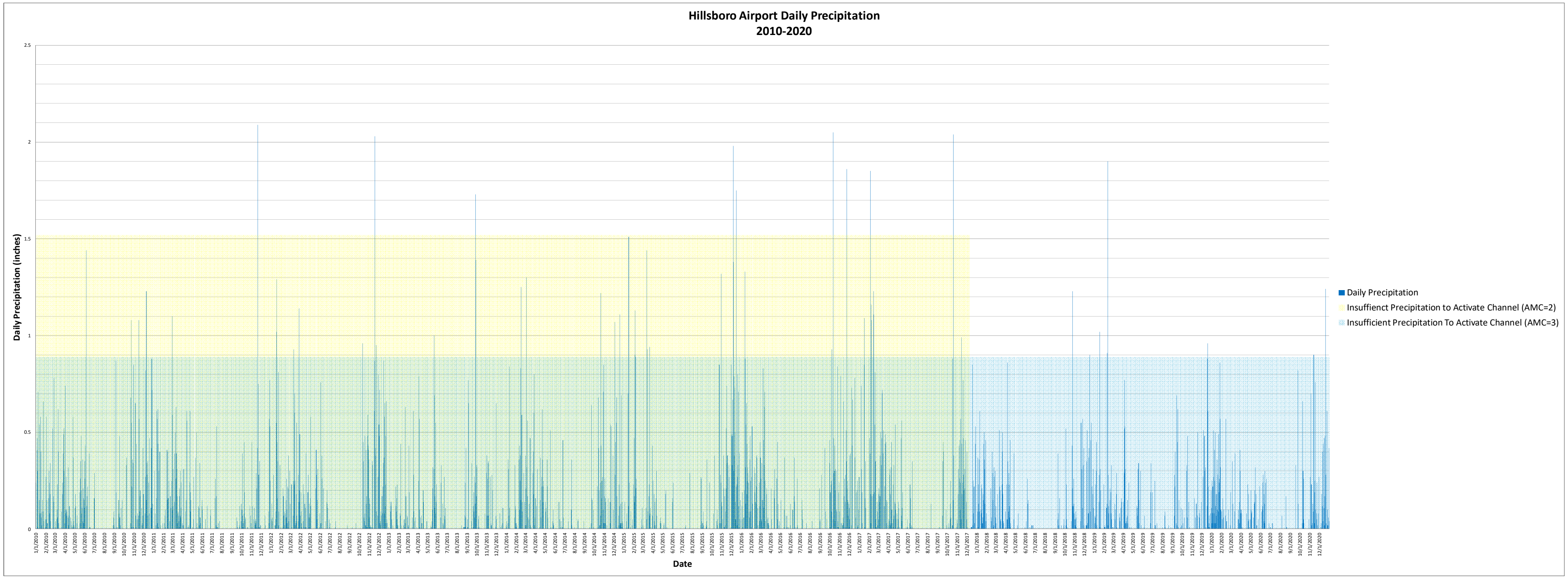
Graph displays 15 years (2004-2020) of E. Fork Gage flow rates. Graph peaks were used to estimate the approximate annual flow rate and 2-Year event flow rate of E. Fork. A conversion factor was applied to convert for use on the W. Fork. The stream design was based on the HydoCAD and Hydraulic model but these data were useful as a means to calibrate the site with a stream gage; there is no gage upstream on the W. Fork.


USGS 14205400 EAST FORK DAIRY CREEK NEAR MEACHAM CORNER, OR
DAILY Discharge, cubic feet per second
2000.0
1000.0
400
100.0
10.0
5.0
2004
2006
2008
2010
2012
2014
2016
2018
2020
≈ 2-YEAR EVENT
≈ 1-YEAR EVENT
Daily mean discharge
Estimated daily mean discharge
Period of approved data
Period of provisional data

Appendix D:

Designed Channel Activation Frequency

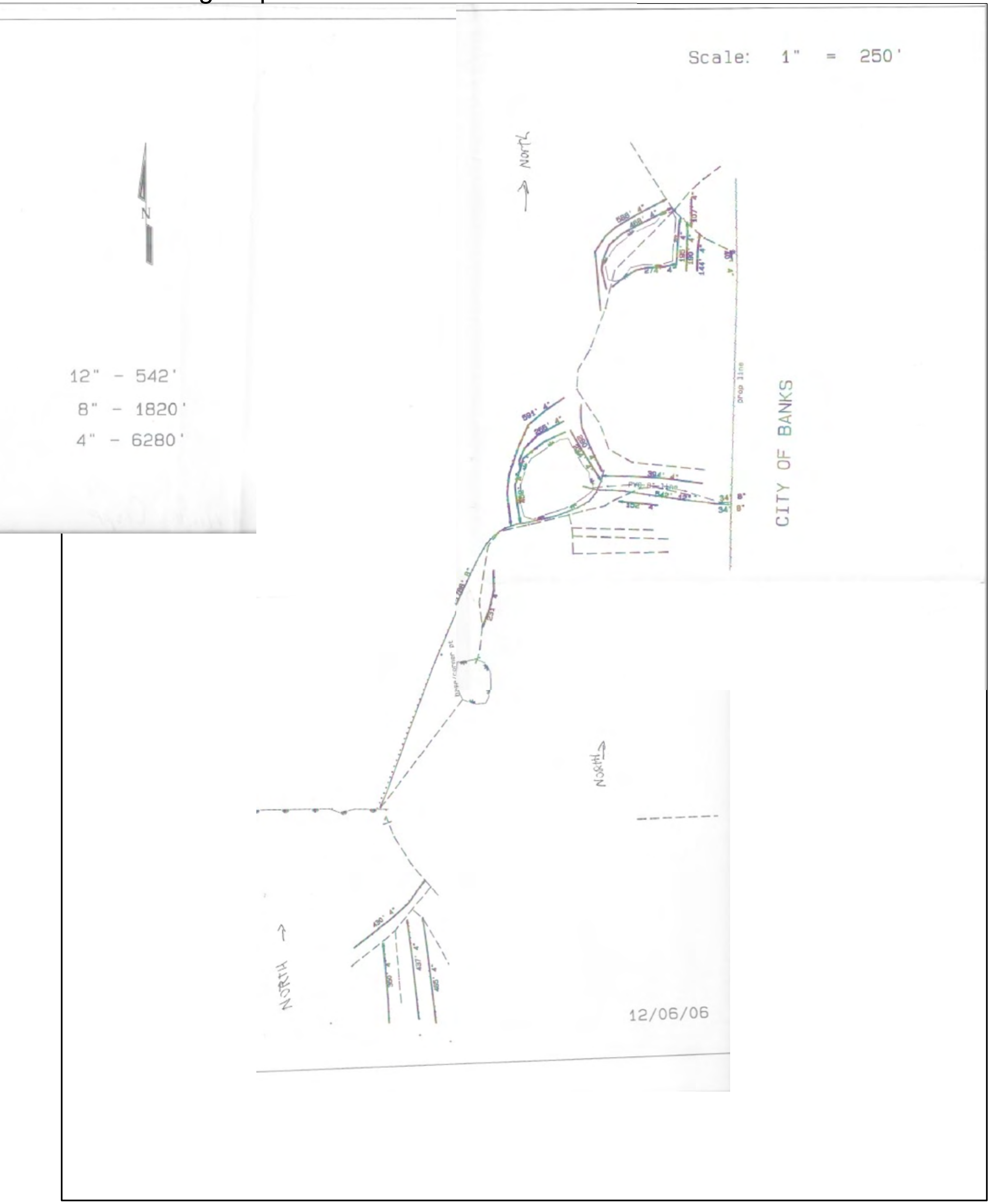
The designed channel activation frequency graph displays the daily 24-hour precipitation amounts for the last ten years at the Hillsboro Airport compared to the amount of precipitation required to activate the main constructed channel. Each vertical bar that extends above the red line indicates sufficient rainfall to activate the constructed stream channel. Based on this graph, the channel will be activated between 10 (precipitation bars above the yellow zone) and about 36 (precipitation bars within the yellow zone) over ten years. This gives an expected frequency of 1-3.6 times per year. All precipitation amounts in the green zone would not be expected to activate the channels.


Hillsboro Airport Daily Precipitation
2010-2020
Daily Precipitation (inches)
Date
Daily Precipitation
Insuffienct Precipitation to Activate Channel (AMC=2)
Insufficient Precipitation To Activate Channel (AMC=3)

Appendix E: Drain Tile Map (2006)

Map provided by Hostetler 2020.

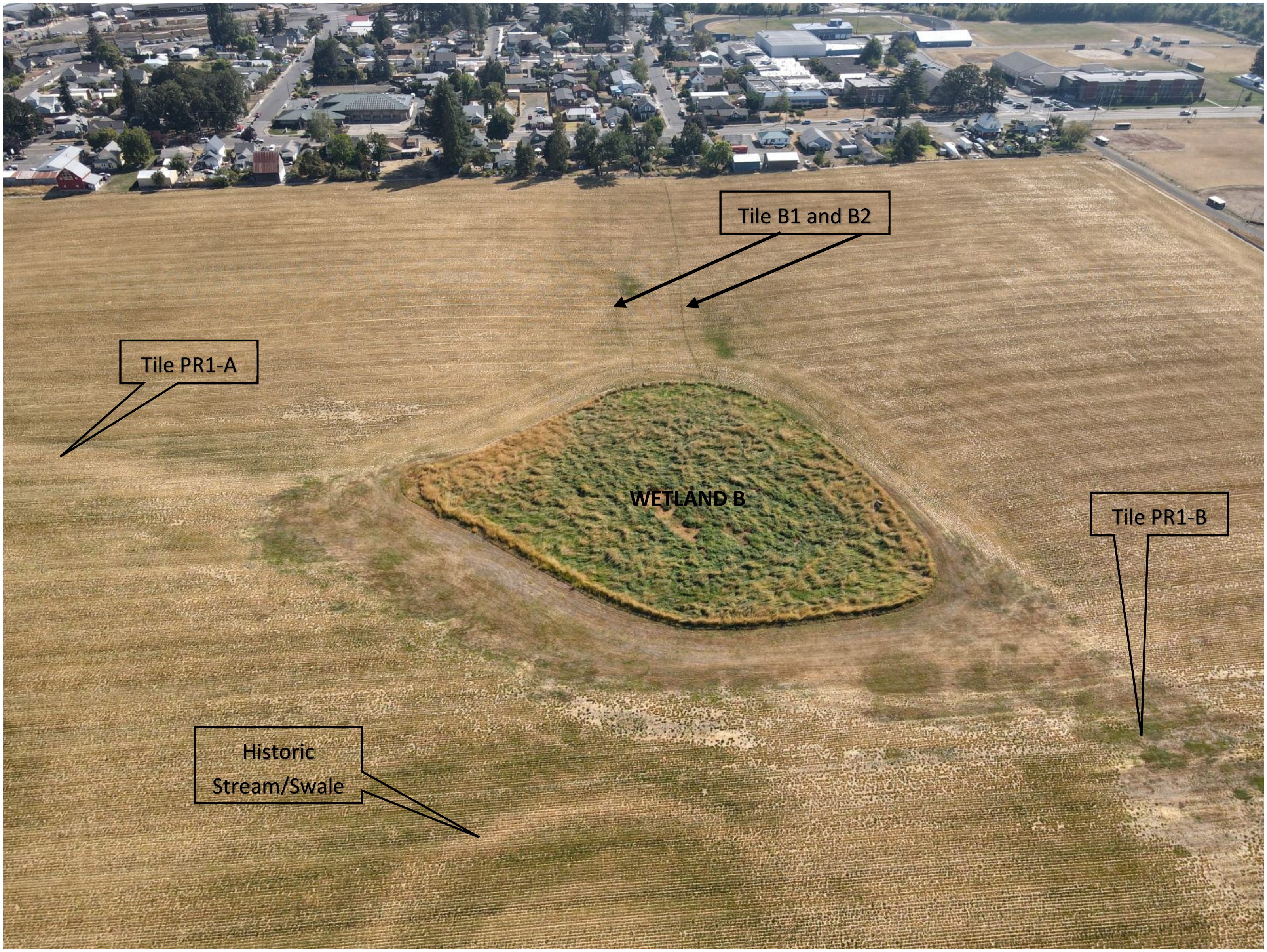
DCMB Tiling Map 2006



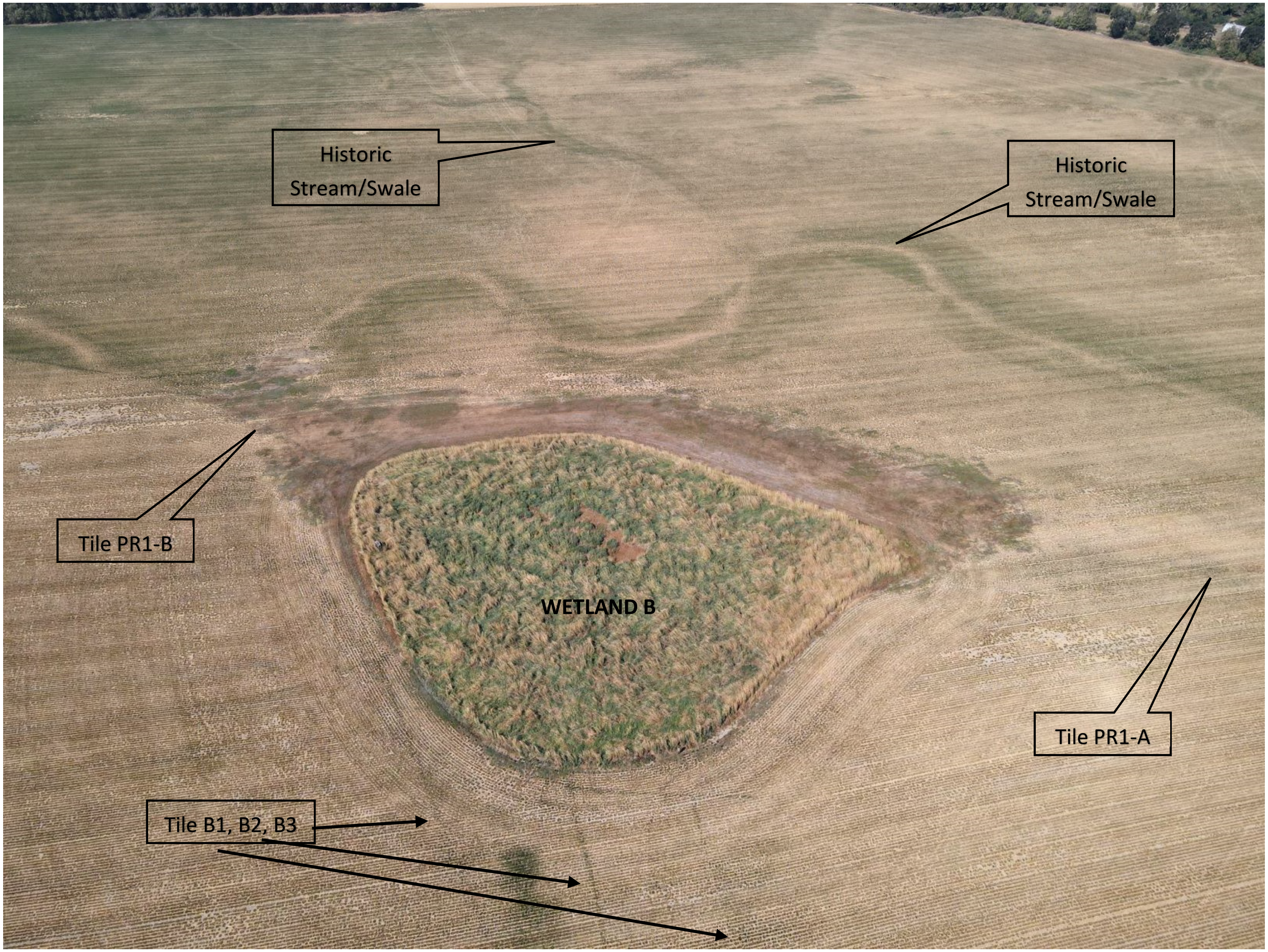
Appendix F: Drone Photographs (2020-2021)

Appendix F: 2020 and 2021 Drone Photos

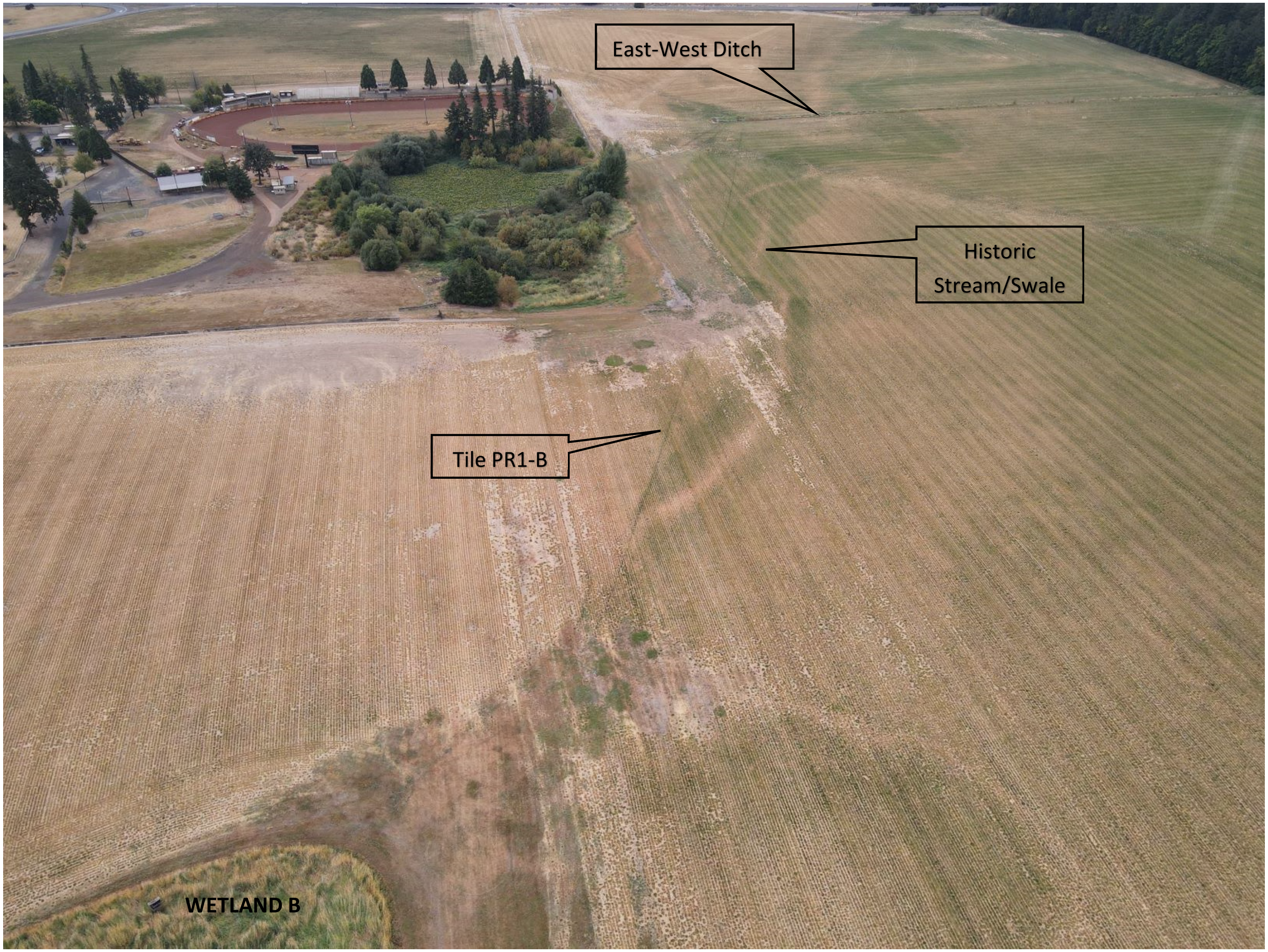
DPP1- Drone PP1 displays Wetlands A and B and active tile lines A1, A2, and PR1-A. It also displays the historic stream/swale flowing to the southwest. Photo was taken facing south/southwest from an altitude of 120m on 9/5/20.



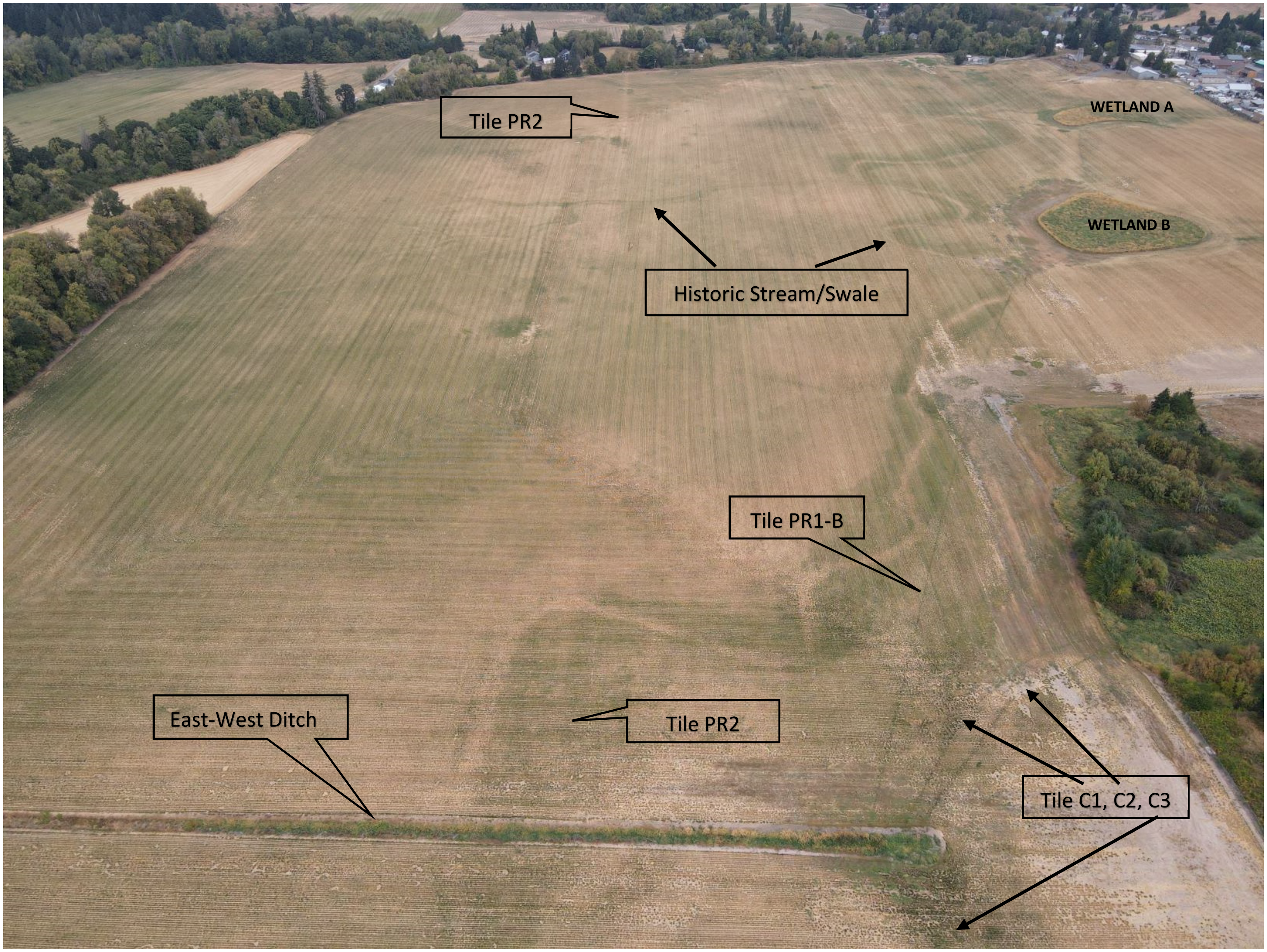
DPP2- Drone PP2 displays Wetland B and active tile lines B1, B2, PR1-A and B. Photo was taken facing east from an altitude of 120m on 9/9/20.



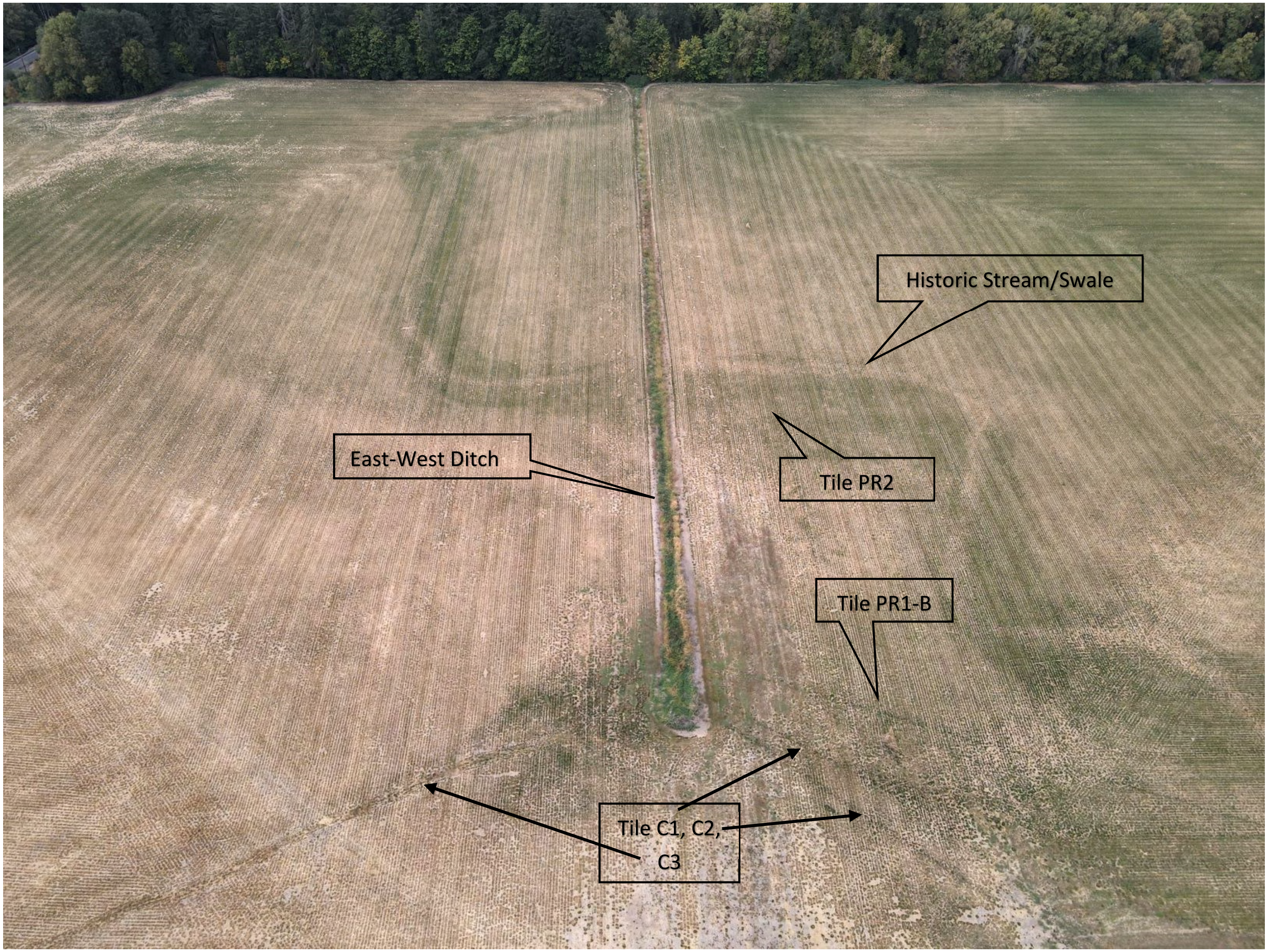
DPP3- Drone PP3 displays Wetland B, Tiles B1-B3 and Tile PR1-A and B. It also displays the historic stream/swale with a fork the flows to the west. Photo was taken facing west from an altitude of 120m on 9/9/20.



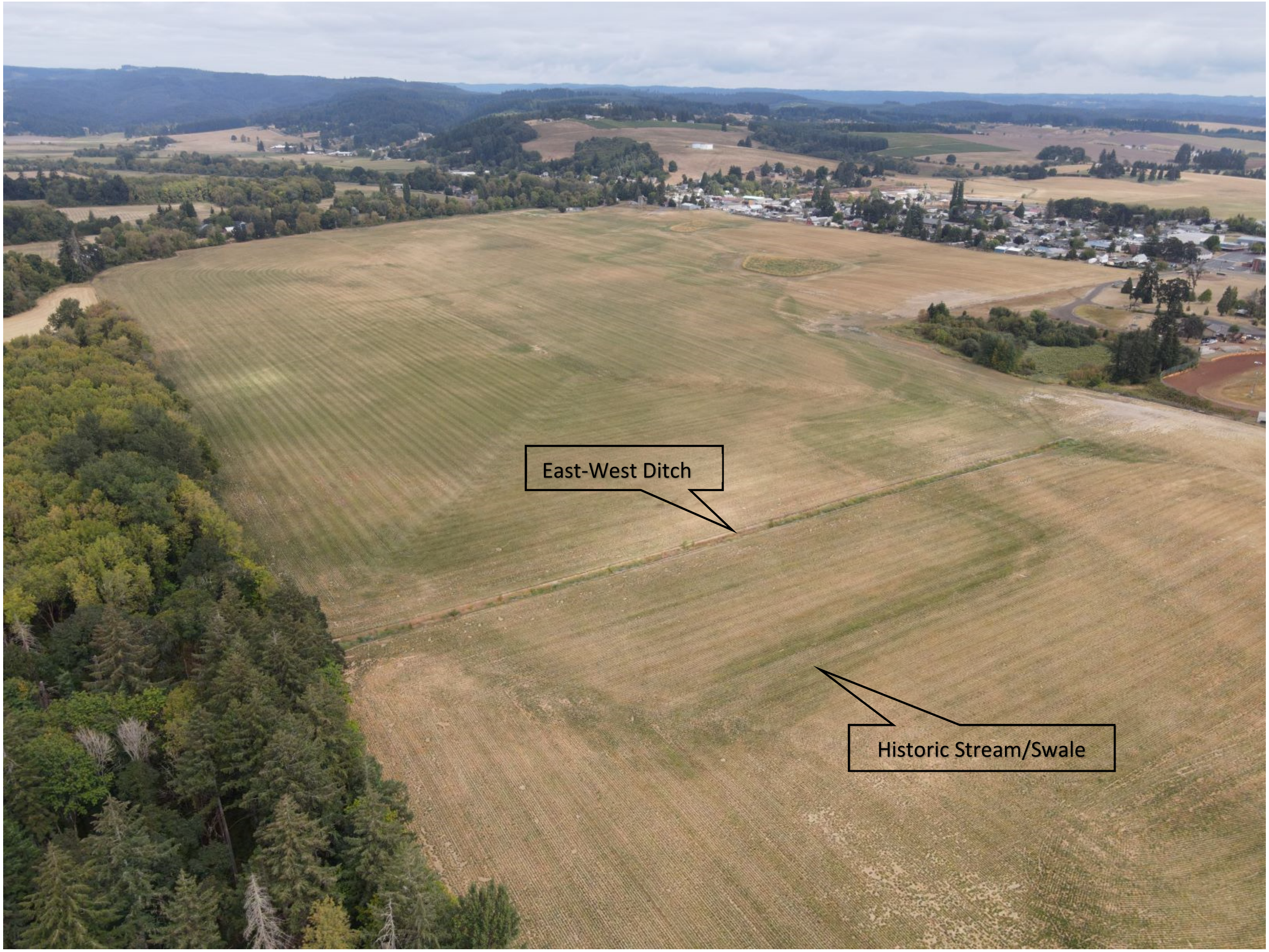
DPP4- Drone PP4 displays the south end of Wetland B, and the primary tile line (PR1-B) running toward the East-West Ditch. Photo was taken facing south from an altitude of 120m on 9/5/20.



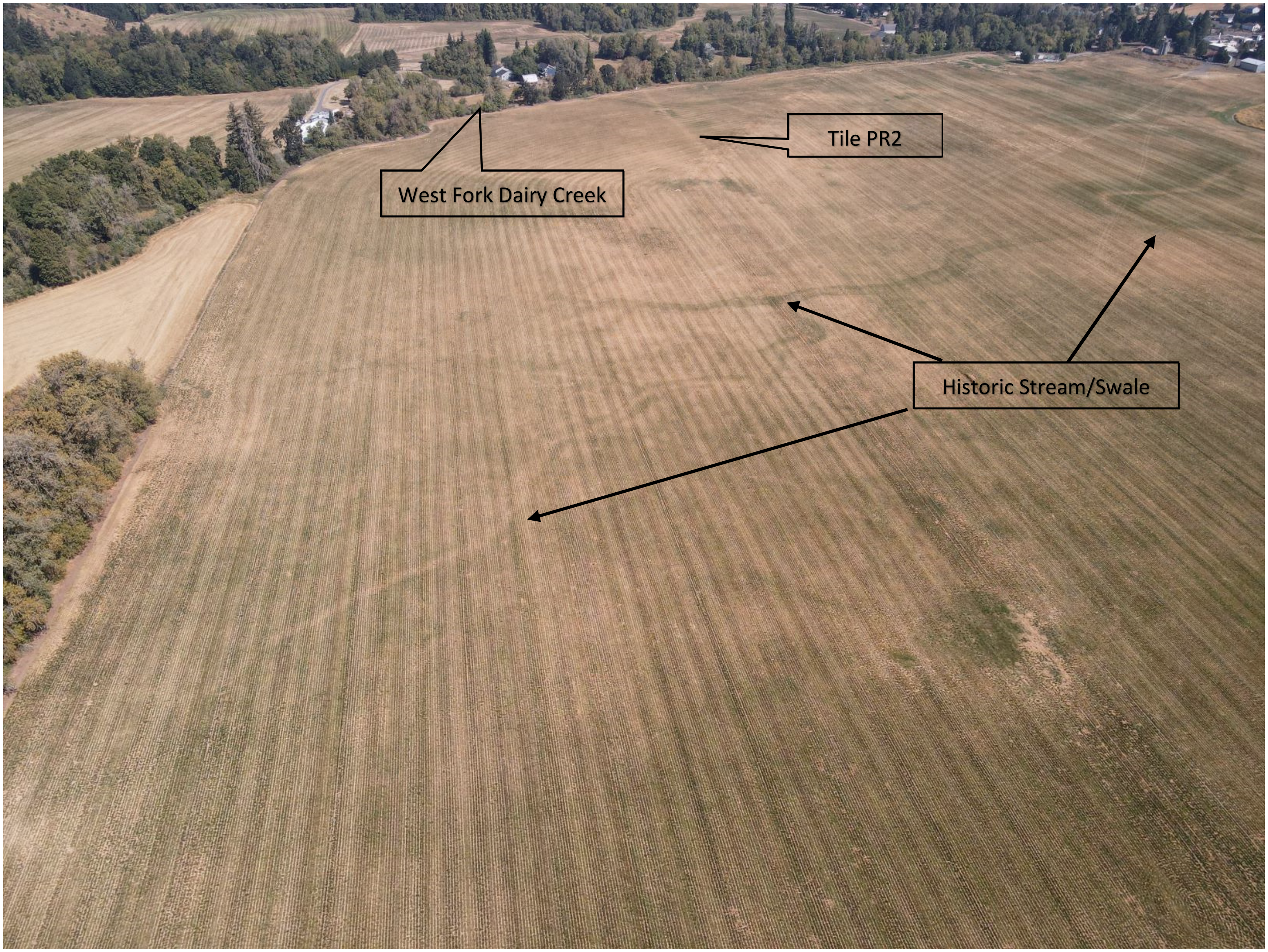
DPP5- Drone PP5 displays an overview of the DCMB facing north at an altitude of 120m on 9/5/20.



DPP6- Drone PP6 displays the East-West Ditch and Tiles PR1-B, PR2, C1, C2, and C3. It also displays the historic stream/swale running to the southwest. Photo was taken facing west at an altitude of 100m on 9/9/20.



DPP7- Drone PP7 displays an overview of the DCMB project facing northeast, taken from the southwest corner of project area. Photo was taken at an altitude of 120m on 9/9/20.



DPP8- Drone PP8 displays the western fork of the historic stream/swale system, facing north. Photo was taken at 120m on 9/9/20.

DPP9- Drone PP9 displays the westerly fork of the natural stream/swale system facing north. Photo was captured from an altitude of 100m on 9/9/20.

DPP10- Drone PP10 displays an overview of the DCMB facing south. Photo was taken at an altitude of 120m on 9/9/20.

DPP11- Drone PP11 displays an overview of the northern portion of the DCMB, facing east. Photo was taken at an altitude of 120m on 9/9/20.

Drone Photo 12: Captured from northeast corner of project area facing Southwest on January 13, 2021.

Drone Photo 13: View of Wetland B, historic swale, and flooding on January 13, 2021 facing southwest.

Drone Photo 14: View of W. Fork Dairy Creek and Straight Channel flooding into site on January 13, 2021, facing west.

Drone Photo 15: View of DCMB wetlands, historic swale, and flooding, on January 13, 2021, facing south.

Drone Photo 16: View of flooding into DCMB from W. Fork Dairy Creek and Straight Channel in approximate location of proposed channels. Photo taken on January 13, 2021, facing south.

Drone Photo 17: View of flooding from W. Fork Dairy Creek and Straight Channel into DCMB on January 14, 2021, facing east.

Drone Photo 18: View of approximate 2-Year flood event extent on January 13, 2021, facing north.

Drone Photo 19: Overview of 2-Year flood extent on January 13, 2021, facing north. Photo taken from Phase 2 area and displays E-W ditch.

Drone Photo 20: View of offsite wetland east of Phase 2 project area overflowing into the DCMB on January 13, 2021, facing south.

Appendix G: Soils Delineation Datasheets

Includes:

-2019-2020 Soils Survey Data Sheets
-Wapato Soil Series Description

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank   City/County: Banks, WA County   Sampling Date: 2/14/2019

Applicant/Owner: DCMB LLC   State: Oregon   Sampling Point: 1

Investigator(s): C. Jonas Moiel, Margret Harburg   Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): terrace   Local relief (concave, convex, none): ____   Slope (%): none

Subregion (LRR): A   Lat: 45.616   Long: -123.121   Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam   NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ____ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____ ,Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No
Hydric Soil Present?	Yes	No X
Wetland Hydrology Present?	Yes	No X

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:
Plot 1 is located at the northern end of the project area approximately 100 feet south of the West Fork Dairy Creek.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	70%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 30%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ____

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-7	7.5YR 3/2	100	no redox				silt loam	some gravel
7-11	7.5YR 3/2	98	7.5YR 3/4	2	C	M	silty clay loam	
11-16	7.5YR 3/2	85	7.5YR 4/4	15	C	M	silty clay loam	
16-20	7.5YR 4/3	90	7.5YR 4/6	10	C	M	clay loam	
20-24+	7.5YR 3/1	93	7.5YR 4/6	7	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):	
Water Table Present?	Yes		No	X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Wetland Hydrology Present? Yes ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C for hydrology data for this plot.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 2/14/2019

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **2**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): None

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: McBee Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No
Hydric Soil Present?	Yes	No **X**
Wetland Hydrology Present?	Yes	No **X**

Is the Sampled Area within a Wetland? **Yes** ___ **No** **X**

Remarks:
Plot 2 is located at the northern end of the project area approximately 200 feet south of the West Fork Dairy Creek, and 300 feet east and 1 foot higher in elevation than Plot 1.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	65%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	65%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	35%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **N/A** **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-10	7.5YR 3/2	100	no redox				silt loam	
10-14	7.5YR 3/2	95	7.5YR 3/3	5	C	M	silty clay loam	
14-24+	10YR 4/4	99	7.5YR 4/6	1	C	M	silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes ______	No	X	Depth (inches):	______
Water Table Present?	Yes ______	No	X	Depth (inches):	______
Saturation Present? (includes capillary fringe)	Yes ______	No	X	Depth (inches):	______

Wetland Hydrology Present? Yes ______ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank | City/County: Banks, WA County | Sampling Date: 2/14/2019

Applicant/Owner: DCMB LLC | State: Oregon | Sampling Point: 3

Investigator(s): C. Jonas Moiel, Margret Harburg | Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): None | Slope (%): <1%

Subregion (LRR): A | Lat: 45.616 | Long: -123.121 | Datum: NAD 83

Soil Map Unit Name: McBee Silty Clay Loam | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No	Is the Sampled Area within a Wetland?	
Hydric Soil Present?	Yes X	No		
Wetland Hydrology Present?	Yes	No X	Yes	No X

Remarks:
Plot 3 is located at the northern end of the project area approximately 300 feet south of the West Fork Dairy Creek, and 300 feet east and 1 foot lower in elevation than Plot 2.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	75%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	75%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 25%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2		
0-7	7.5YR 3/2	100	no redox				silt loam	
7-21	7.5YR 3/2	92	7.5YR 4/4	8	C	M	silty clay loam	
21-24+	7.5YR 4/2	80	7.5YR 4/6	20	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):
Water Table Present?	Yes		No	X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes		No	X	Depth (inches):

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank   City/County: Banks, WA County   Sampling Date: 2/14/2019

Applicant/Owner: DCMB LLC   State: Oregon   Sampling Point: 4

Investigator(s): C. Jonas Moiel, Margret Harburg   Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace   Local relief (concave, convex, none): None   Slope (%): <1

Subregion (LRR): A   Lat: 45.616   Long: -123.121   Datum: NAD 83

Soil Map Unit Name: McBee Silty Clay Loam   NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No ___
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:
Plot 4 is located at the northern end of the project area approximately 400 feet south of the West Fork Dairy Creek, and 500 feet east and 1 foot higher in elevation than Plot 3.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	70%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	30%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-9	7.5YR 3/2	100	no redox				silt loam	
9-13	10YR 3/2	95	7.5YR 3/4	5	C	M	clay loam	
13-18	10YR 4/2	80	7.5YR 4/6	20	C	M	clay loam	
18-24+	10YR 4/2	75	7.5YR 4/6	25	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes ______	No X	Depth (inches):	______
Water Table Present?	Yes ______	No X	Depth (inches):	______
Saturation Present? (includes capillary fringe)	Yes ______	No X	Depth (inches):	______

Wetland Hydrology Present? Yes ______ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 2/14/2019

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: 5

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): none Slope (%): 3

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: McBee Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ____, or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____ ,Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	N/A	
Hydric Soil Present?		X
Wetland Hydrology Present?		X

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:
Plot 5 is located at the northern end of the project area approximately 300 feet south of the West Fork Dairy Creek, and 300 feet east and 2 feet higher in elevation than Plot 4.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	65%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	65%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 35%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ____

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-11	7.5YR 3/2	100	no redox				silt loam	
11-18	7.5YR 3/1	85	7.5YR 4/4	15	C	M	silty clay loam	
18-24+	7.5YR 3/1	80	7.5YR 4/4	10	C	M	clay loam	
			5YR 4/6	10	R	C	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):	
Water Table Present?	Yes		No	X	Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes		No	X	Depth (inches):	varied

Wetland Hydrology Present? Yes ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 2/14/2019

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **6**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: McBee Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ____ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____ ,Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No	**Is the Sampled Area within a Wetland?**	
Hydric Soil Present?	Yes	No **X**		
Wetland Hydrology Present?	Yes	No **X**	**Yes**	**No X**

Remarks:
Plot 6 is located at the eastern end of the project area approximately 100 feet west of PHS delineated "Wetland A".

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	70%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	30%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
Wetland Non-Vascular Plants[1]
Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes N/A** **No**

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2		
0-11	7.5YR 3/1	100	no redox				silt loam	
11-15	7.5YR 3/1	85	7.5YR 4/4	15	C	M	silty clay loam	
15-24+	10YR 4/2	70	7.5YR 4/6	30	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):	
Water Table Present?	Yes		No	X	Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes		No	X	Depth (inches):	varied

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 2/14/2019

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **7**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation X ,Soil ___ , or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	N/A	
Hydric Soil Present?	X	
Wetland Hydrology Present?		X

Is the Sampled Area within a Wetland? Yes ___ No **X**

Remarks:
Plot 7 is located approximately 325 east and 6 inches higher in elevation than Plot 6.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	70%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 30%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **N/A** No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-11	7.5YR 3/1	98	7.5YR 4/3	2	C	M	silt loam	
11-21	7.5YR 3/1	85	7.5YR 4/3	15	C	M	clay loam	
21-24	7.5YR 4/2	70	7.5YR 4/4	30	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes ___	No	X	Depth (inches):	___
Water Table Present?	Yes ___	No	X	Depth (inches):	___
Saturation Present? (includes capillary fringe)	Yes ___	No	X	Depth (inches):	___

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 2/14/2019

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **8**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A** No ___	Is the Sampled Area within a Wetland?	Yes ___ No **X**
Hydric Soil Present?	Yes **X** No ___		
Wetland Hydrology Present?	Yes ___ No **X?**		

Remarks:
Plot 8 is located approximately 300 feet east and 2.5 feet lower in elevation than Plot 7.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	65%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	65%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	35%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **N/A** No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-6	7.5YR 3/1	100	no redox				silt loam	
6-12	7.5YR 3/1	95	7.5YR 4/4	5	C	M	silty clay loam	
12-24+	7.5YR 4/2	70	7.5YR 4/6	30	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):
Water Table Present?	Yes	X	No		Depth (inches): varied
Saturation Present? (includes capillary fringe)	Yes	X	No		Depth (inches): varied

Wetland Hydrology Present? Yes ___ **No** X?

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period; however was close to having wetland hydrology in 2020. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 2/14/2019

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: 9

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No
Hydric Soil Present?	Yes X	No
Wetland Hydrology Present?	Yes	No X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:
Plot 9 is located approximately 300 feet east and similar elevation to Plot 8.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	75%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	75%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	25%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

1 Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **9**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-10	7.5YR 3/1	97	7.5YR 4/4	3	C	M	silty clay loam	
10-16	7.5YR 3/1	90	7.5YR 4/4	10	C	M	silty clay loam	
16-24	7.5YR 4/2	85	7.5YR 4/6	15	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):	
Water Table Present?	Yes	X	No		Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes	X	No		Depth (inches):	varied

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank   City/County: Banks, WA County   Sampling Date: 2/14/2019

Applicant/Owner: DCMB LLC   State: Oregon   Sampling Point: **10**

Investigator(s): C. Jonas Moiel, Margret Harburg   Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): terrace   Local relief (concave, convex, none): none   Slope (%): <1

Subregion (LRR): A   Lat: 45.616   Long: -123.121   Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam   NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/S**	No ___
Hydric Soil Present?	Yes **X**	No ___
Wetland Hydrology Present?	Yes ___	No **X**

Is the Sampled Area within a Wetland? **Yes** ___ **No X**

Remarks:
Plot 10 is located approximately 300 feet east and 2 feet higher in elevation than Plot 9.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	60%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	60%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 40%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes N/A No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-7	7.5YR 3/1	100	no redox				silt loam	
7-13	7.5YR 3/1	92	7.5YR 4/3	8	C	M	silty clay loam	
13-24+	7.5YR 4/2	70	7.5YR 4/4	30	C	M	silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	
Water Table Present?	Yes ___	No X	Depth (inches): ___	
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___	

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:

Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 2/14/2019

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **11**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: McBee Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No ___
Hydric Soil Present?	Yes **X**	No ___
Wetland Hydrology Present?	Yes ___	No **X**

Is the Sampled Area within a Wetland? Yes ___ No **X**

Remarks:
Plot 11 is located approximately 75 east of the West Fork Dairy Creek top-of-bank.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	65%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	65%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	35%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	0 (A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **N/A** No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-6	7.5YR 3/1	98	7.5YR 4/3	2	C	M	silt loam	
6-10	7.5YR 3/1	85	7.5YR 4/3	15	C	M	silt loam	
10-24+	7.5YR 4/2	70	7.5YR 4/4	30	C	M	silt loam	some sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):	___
Water Table Present?	Yes ___	No X	Depth (inches):	___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	___

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank | City/County: Banks, WA County | Sampling Date: 2/14/2019

Applicant/Owner: DCMB LLC | State: Oregon | Sampling Point: 12

Investigator(s): C. Jonas Moiel, Margret Harburg | Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): none | Slope (%): <1

Subregion (LRR): A | Lat: 45.616 | Long: -123.121 | Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No ___
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:
Plot 12 is approximately 275 feet southeast and 2 feet lower in elevation than Plot 11.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	70%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	30%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-9	7.5YR 3/1	100	no redox				silt loam	
9-13	7.5YR 3/1	93	7.5YR 4/3	7	C	M	silty clay loam	
13-20	7.5YR 3/1	80	7.5YR 4/3	20	C	M	silty clay loam	
20-14+	7.5YR 4/2	70	7.5YR 4/4	30	C	M	silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):	
Water Table Present?	Yes	X	No		Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes	X	No		Depth (inches):	varied

Wetland Hydrology Present? Yes ______ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank | City/County: Banks, WA County | Sampling Date: 2/18/2019

Applicant/Owner: DCMB LLC | State: Oregon | Sampling Point: **13**

Investigator(s): C. Jonas Moiel, Margret Harburg | Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): concave | Slope (%): <1

Subregion (LRR): A | Lat: 45.616 | Long: -123.121 | Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No	Is the Sampled Area within a Wetland? Yes ___ No **X**
Hydric Soil Present?	Yes	No **X**	
Wetland Hydrology Present?	Yes **X?**	No	

Remarks:
Plot 13 is approximately 300 feet southeast and 1 foot lower in elevation than Plot 12.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	60%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	60%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum 40%			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **N/A** No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-10	10YR 3/2	100	no redox				silty clay loam	
10-13	10YR 3/2	97	7.5YR 3/3	3	C	M	silty clay loam	
13-18	10YR 3/2	92	7.5YR 4/6	8	C	M	clay loam	
18-24	10YR 4/2	70	7.5YR 5/8	30	C	M	clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):	
Water Table Present?	Yes	X	No		Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes	X	No		Depth (inches):	varied

Wetland Hydrology Present? Yes X? **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot had or was very close to having wetland hydrology in 2020. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank | City/County: Banks, WA County | Sampling Date: 2/18/2019

Applicant/Owner: DCMB LLC | State: Oregon | Sampling Point: **14**

Investigator(s): C. Jonas Moiel, Margret Harburg | Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): concave | Slope (%): <1

Subregion (LRR): A | Lat: 45.616 | Long: -123.121 | Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam | NWI classification: Riverine (or very close)

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No ___
Hydric Soil Present?	Yes **X**	No ___
Wetland Hydrology Present?	Yes **X?**	No ___

Is the Sampled Area within a Wetland? Yes ___ No **X**

Remarks:
Plot 14 is approximately 300 feet southeast and six inches lower in elevation than Plot 13.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	65%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	65%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	35%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **N/A** No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-8	10YR 3/2	100	no redox				silty clay loam	
8-11	10YR 3/2	95	7.5YR 4/4	5	C	M	silty clay loam	
11-15	10YR 3/2	80	7.5YR 4/6	20	C	M	silty clay loam	
15-24+	10YR 4/2	65	7.5YR 4/6	35	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Increasing clay content with depth.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

	Yes		No		Depth (inches):	
Surface Water Present?	Yes		No	X	Depth (inches):	
Water Table Present?	Yes	X	No		Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes	X	No		Depth (inches):	varied

Wetland Hydrology Present? **Yes** X? **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period; however, it was very close to having wetland hydrology in 2020. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank   City/County: Banks, WA County   Sampling Date: 2/18/2019

Applicant/Owner: DCMB LLC   State: Oregon   Sampling Point: **15**

Investigator(s): C. Jonas Moiel, Margret Harburg   Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace   Local relief (concave, convex, none): none   Slope (%): 2

Subregion (LRR): A   Lat: 45.616   Long: -123.121   Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam   NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No ___
Hydric Soil Present?	Yes ___	No **X**
Wetland Hydrology Present?	Yes ___	No **X**

Is the Sampled Area within a Wetland? **Yes** ___ **No X**

Remarks:
Plot 15 is approximately 300 feet southeast and 2 feet higher in elevation than Plot 14.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	65%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	65%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	35%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes N/A** **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-11	7.5YR 3/2	100	no redox				silty loam	
11-16	7.5YR 3/2	100	no redox				silty clay loam	
16-24+	7.5YR 3/2	85	7.5YR 4/4	15	C	M	silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

	Yes		No		Depth (inches):	
Surface Water Present?	Yes		No	X	Depth (inches):	
Water Table Present?	Yes	X	No		Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes	X	No		Depth (inches):	varied

Wetland Hydrology Present? Yes ______ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 2/18/2019

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **16**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: McBee Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No ___
Hydric Soil Present?	Yes ___	No **X**
Wetland Hydrology Present?	Yes ___	No **X**

Is the Sampled Area within a Wetland? **Yes** ___ **No** **X**

Remarks:
Plot 16 is approximately 300 feet southeast and 1 foot higher in elevation than Plot 15.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	60%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	60%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 40%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **N/A** **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **16**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-11	7.5YR 3/2	100	no redox				silt loam	
11-16	7.5YR 3/2	90	7.5YR 4/4	10	C	M	silty clay loam	
16-24+	7.5YR 4/2	85	7.5YR 4/6	15	C	M	silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):	
Water Table Present?	Yes	X	No		Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes	X	No		Depth (inches):	varied

Wetland Hydrology Present? Yes ______ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site:	Dairy Creek Mitigation Bank	City/County:	Banks, WA County	Sampling Date:	2/18/2019
Applicant/Owner:	DCMB LLC	State:	Oregon	Sampling Point:	17
Investigator(s):	C. Jonas Moiel, Margret Harburg	Section, Township, Range:	T2N R4W S36		
Landform (hillslope, terrace, etc.):	Terrace	Local relief (concave, convex, none):	none	Slope (%):	2
Subregion (LRR):	A	Lat: 45.616	Long: -123.121	Datum:	NAD 83
Soil Map Unit Name:	McBee Silty Clay Loam	NWI classification:	Riverine		

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ____ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____ ,Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	N/A	
Hydric Soil Present?		X
Wetland Hydrology Present?		X
Is the Sampled Area within a Wetland?		X

Remarks:
Plot 17 is approximately 300 feet east and same approximate elevation than Plot 16.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	60%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	60%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	40%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ____

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-13	7.5YR 3/2	100	no redox				silt loam	
13-17	7.5YR 3/2	95	7.5YR 4/4	5	C	M	silt loam	
17-22	7.5YR 3/2	90	7.5YR 4/6	10	C	M	silty clay loam	
22-24+	7.5YR 4/2	70	7.5YR 4/6	30	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ________

Depth (inches): ________

Hydric Soil Present? Yes ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):	
Water Table Present?	Yes	X	No		Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes	X	No		Depth (inches):	varied

Wetland Hydrology Present? Yes ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 2/18/2019

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **18**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: McBee Silty Clay Loam NWI classification: Freshwater Emergent Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation Yes ,Soil Yes? , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____ ,Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No
Hydric Soil Present?	Yes	No **X?**
Wetland Hydrology Present?	Yes	No **X**

Is the Sampled Area within a Wetland? **Yes** ____ **No** **X**

Remarks:
Plot 18 is approximately 350 feet south of Plot 17. Plot 18 is approximately 75ft from the delineated boundary of "Wetland B".

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	50%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	50%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	50%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Wetland Non-Vascular Plants[1]

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes N/A** **No** ____

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-11	7.5YR 3/2	100	no redox				silt loam	
11-14	7.5YR 3/2	75	7.5YR 4/6	5	C	M	silty clay loam	mixed matrix
	7.5YR 4/2	20	no redox				silty clay loam	mixed matrix
14-18	7.5YR 3/2	60	no redox				silty clay loam	mixed matrix
	7.5YR 4/2	33	7.5YR 4/6	7	C	M	silty clay loam	mixed matrix
18-24+	7.5YR 4/2	83	7.5YR 4/6	10	C	M	silty clay loam	
			7.5YR 4/4	7	C	M	silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X?

Remarks:
Soils may have been disced or plowed 7 or more years ago.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):	
Water Table Present?	Yes	X	No		Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes	X	No		Depth (inches):	varied

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank | City/County: Banks, WA County | Sampling Date: 2/18/2019

Applicant/Owner: DCMB LLC | State: Oregon | Sampling Point: **19**

Investigator(s): C. Jonas Moiel, Margret Harburg | Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): none | Slope (%): 1

Subregion (LRR): A | Lat: 45.616 | Long: -123.121 | Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No ___	
Hydric Soil Present?	Yes ___	No **X**	**Is the Sampled Area within a Wetland?**
Wetland Hydrology Present?	Yes ___	No **X**	**Yes** ___ **No X**

Remarks:
Plot 19 is located approximately 325 feet northwest and similar elevation to Plot 18.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	65%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	65%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	35%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **N/A** No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-12	7.5YR 3/2	100	no redox				silt loam	
12-17	7.5YR 3/2	90	no redox				silty clay loam	mixed matrix
	7.5YR 4/4	7	7.5YR 4/6	3	C	M	silty clay loam	mixed matrix
17-24+	7.5YR 4/2	95	7.5YR 4/6	5	C	M	silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ **No** **X**

Remarks:
Soils may have been disced or plowed 7 or more years ago.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):	
Water Table Present?	Yes	X	No		Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes	X	No		Depth (inches):	varied

Wetland Hydrology Present? Yes ______ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Exhibit C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank   City/County: Banks, WA County   Sampling Date: 2/18/2019
Applicant/Owner: DCMB LLC   State: Oregon   Sampling Point: **20**
Investigator(s): C. Jonas Moiel, Margret Harburg   Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace   Local relief (concave, convex, none): concave   Slope (%): 1
Subregion (LRR): A   Lat: 45.616   Long: -123.121   Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam   NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	N/A	
Hydric Soil Present?		X
Wetland Hydrology Present?	X	

Is the Sampled Area within a Wetland? Yes ___ No **X**

Remarks:
Plot 20 is located approximately 350 feet northwest and three feet lower in elevation than Plot 19.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	70%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	30%		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **N/A** No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-12	7.5YR 3/2	100	no redox				silt loam	
12-15	7.5YR 3/2	88	7.5YR 4/6	12	C	M	silty clay loam	
15-24+	7.5YR 4/2	70	7.5YR 5/8	30	C	M	clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
X High Water Table (A2)
X Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes	X	No	Depth (inches):	
Water Table Present?	Yes	X	No	Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes	X	No	Depth (inches):	varied

Wetland Hydrology Present? Yes X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot displayed wetland hydrology in 2020. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 2/18/2019
Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **21**
Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): convex Slope (%): <1
Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Riparian

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)
Are Vegetation Yes ,Soil ____ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____ ,Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No
Hydric Soil Present?	Yes **X**	No
Wetland Hydrology Present?	Yes	No **X**

Is the Sampled Area within a Wetland? Yes ____ No **X**

Remarks:
Plot 21 is approximately 300 feet northwest and 1 foot lower in elevation than Plot 20.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	35%	Yes	FAC
2. *Lolium perenne*	10%	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	45%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	55%		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
____ Prevalence Index is ≤3.0[1]
____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Wetland Non-Vascular Plants[1]
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **N/A** No ____

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **21**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-7	7.5YR 3/2	97	7.5YR 4/4	3	C	M	silt loam	
7-17	7.5YR 3/2	93	7.5YR 4/6	7	C	M	silty clay loam	
17-24+	7.5YR 3/2	92	7.5YR 4/6	8	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes	X	No	Depth (inches):	
Water Table Present?	Yes	X	No	Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes	X	No	Depth (inches):	varied

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period; however was close to having wetland hydrology in 2020. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 2/18/2019

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **22**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ____, or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____,Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No ____
Hydric Soil Present?	Yes ____	No **X**
Wetland Hydrology Present?	Yes ____	No **X**

Is the Sampled Area within a Wetland? **Yes** ____ **No** **X**

Remarks:
Plot 22 is approximately 200 feet northwest and 1 foot higher in elevation than Plot 21.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	65%	Yes	FAC
2. *Lolium perenne*	3%	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	68%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	32%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0	(A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **N/A** **No** ____

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 22

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-12	7.5YR 3/2	100	no redox				silt loam	
12-15	7.5YR 3/2	95	7.5YR 4/6	5	C	M	silty clay loam	
15-24	10YR 4/3	80	7.5YR 4/6	20	C	M	silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes	X	No		Depth (inches):	
Water Table Present?	Yes	X	No		Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes	X	No		Depth (inches):	varied

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 2/18/2019

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **23**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: McBee Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil Yes? , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No ___
Hydric Soil Present?	Yes **X?**	No ___
Wetland Hydrology Present?	Yes ___	No **X**

Is the Sampled Area within a Wetland? **Yes** ___ **No** **X**

Remarks:
Plot 23 is approximately 200 feet northwest and 2 feet higher in elevation than Plot 22.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	65%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	65%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	35%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **N/A** **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 23

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-8	7.5YR 3/2	100	no redox				silt loam	
8-13	7.5YR 3/2	70	no redox				silty clay loam	mixed matrix
	7.5YR 4/2	25	7.5YR 4/6	5	C	M	silty clay loam	mixed matrix
13-24+	7.5YR 4/3	95	7.5YR 4/6	5	C	M	silty clay loam	some sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X? Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X? **No** ___

Remarks:
Soils have mixed matrix, may have been disced or plowed 7 or more years ago.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):	
Water Table Present?	Yes		No	X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 2/18/2019

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **24**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No ___
Hydric Soil Present?	Yes ___	No **X**
Wetland Hydrology Present?	Yes ___	No **X**

Is the Sampled Area within a Wetland? **Yes** ___ **No X**

Remarks:
Plot 24 is approximately 75 feet from the western project area boundary in NRCS mapped hydric soil.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	65%	Yes	FAC
2. *Lolium perenne*	2%	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	67%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	33%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes N/A** **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 24

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-12	7.5YR 3/2	100	no redox				silt loam	
12-16	7.5YR 3/2	97	7.5YR 4/4	3	C	M	silty clay loam	
16-24+	7.5YR 4/3	85	7.5YR 4/6	15	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ________

Depth (inches): ________

Hydric Soil Present? Yes ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):
Water Table Present?	Yes		No	X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes		No	X	Depth (inches):

Wetland Hydrology Present? Yes ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank   City/County: Banks, WA County   Sampling Date: 2/18/2019

Applicant/Owner: DCMB LLC   State: Oregon   Sampling Point: **25**

Investigator(s): C. Jonas Moiel, Margret Harburg   Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace   Local relief (concave, convex, none): none   Slope (%): 1

Subregion (LRR): A   Lat: 45.616   Long: -123.121   Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam   NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No	**Is the Sampled Area within a Wetland?** Yes ___ No X
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes	No X	

Remarks:
Plot 25 is located approximately 300 feet southeast and 6 inches higher in elevation than Plot 24.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	70%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum 30%			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 25

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-8	7.5YR 3/2	100	no redox				silt loam	
8-11	7.5YR 3/2	95	7.5YR 4/4	5	C	M	silty clay loam	
11-18	7.5YR 3/2	85	7.5YR 4/6	15	C	M	clay loam	
18-24+	7.5YR 4/3	75	7.5YR 4/6	25	C	M	clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9) **(except NW coast)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**NW coast**)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Frost-Heave Hummocks (D4)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes	X	No	___	Depth (inches):	___
Water Table Present?	Yes	X	No	___	Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	varied

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 2/18/2019

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **26**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ____ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____ ,Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No	Is the Sampled Area within a Wetland?
Hydric Soil Present?	Yes **X**	No	
Wetland Hydrology Present?	Yes	No **X**	Yes ____ No **X**

Remarks:
Plot 26 is approximately 300 feet southeast and 1 foot lower in elevation than Plot 25.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	72%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	72%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	28%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **N/A** No ____

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 26

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-8	7.5YR 3/2	100	no redox				silt loam	
8-12	7.5YR 3/2	85	7.5YR 4/6	15	C	M	clay loam	
12-24+	7.5YR 4/2	70	7.5YR 5/8	30	C	M	clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes	X	No		Depth (inches):	
Water Table Present?	Yes	X	No		Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes	X	No		Depth (inches):	varied

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period; however, it was close to having wetland hydrology in 2020. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank	City/County: Banks, WA County		Sampling Date: 2/22/2019
Applicant/Owner: DCMB LLC		State: Oregon	Sampling Point: **27**
Investigator(s): C. Jonas Moiel, Margret Harburg	Section, Township, Range: T2N R4W S36		
Landform (hillslope, terrace, etc.): Terrace	Local relief (concave, convex, none): concave		Slope (%): 1
Subregion (LRR): A	Lat: 45.616	Long: -123.121	Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam		NWI classification: Riverine	

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A** No ___	Is the Sampled Area within a Wetland?	Yes ___ No **X**
Hydric Soil Present?	Yes **X** No ___		
Wetland Hydrology Present?	Yes ___ No **X**		

Remarks:
Plot 27 is approximately 300 feet southeast and six inches foot lower in elevation than Plot 26.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	70%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	30%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **N/A** No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 27

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-7	7.5YR 3/2	100	no redox				silt loam	
7-10	7.5YR 3/2	95	7.5YR 4/6	5	C	M	silty clay loam	
10-14	7.5YR 3/2	75	7.5YR 4/6	25	C	M	clay loam	
14-24	7.5YR 4/2	75	7.5YR 5/8	25	C	M	clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

__ Histosol (A1)
__ Histic Epipedon (A2)
__ Black Histic (A3)
__ Hydrogen Sulfide (A4)
__ Depleted Below Dark Surface (A11)
__ Thick Dark Surface (A12)
__ Sandy Mucky Mineral (S1)
__ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
__ Stripped Matrix (S6)
__ Loamy Mucky Mineral (F1) **(except MLRA 1)**
__ Loamy Gleyed Matrix (F2)
__ Depleted Matrix (F3)
X Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

__ 2 cm Muck (A10)
__ Red Parent Material (TF2)
__ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ____

Depth (inches): ____

Hydric Soil Present? **Yes** X **No** __

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

__ Surface Water (A1)
__ High Water Table (A2)
__ Saturation (A3)
__ Water Marks (B1)
__ Sediment Deposits (B2)
__ Drift Deposits (B3)
__ Algal Mat or Crust (B4)
__ Iron Deposits (B5)
__ Surface Soil Cracks (B6)
__ Inundation Visible on Aerial Imagery (B7)
__ Water-Stained Leaves (B9) **(except NW coast)**
__ Salt Crust (B11)
__ Aquatic Invertebrates (B13)
__ Hydrogen Sulfide Odor (C1)
__ Oxidized Rhizospheres along Living Roots (C3)
__ Presence of Reduced Iron (C4)
__ Recent Iron Reduction in Tilled Soils (C6)
__ Stunted or Stressed Plants (D1) (**LRR A**)
__ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

__ Water-Stained Leaves (B9) (**NW coast**)
__ Sparsely Vegetated Concave Surface (B8)
__ Drainage Patterns (B10)
__ Dry-Season Water Table (C2)
__ Saturation Visible on Aerial Imagery (C9)
__ Geomorphic Position (D2)
__ Shallow Aquitard (D3)
__ Frost-Heave Hummocks (D4)
__ FAC-Neutral Test (D5)
__ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes	X	No		Depth (inches):	
Water Table Present?	Yes	X	No		Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes	X	No		Depth (inches):	varied

Wetland Hydrology Present? **Yes** __ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period; however was close to displaying hydrology in 2020. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank | City/County: Banks, WA County | Sampling Date: 2/22/2019

Applicant/Owner: DCMB LLC | State: Oregon | Sampling Point: **28**

Investigator(s): C. Jonas Moiel, Margret Harburg | Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): | Slope (%):

Subregion (LRR): A | Lat: 45.616 | Long: -123.121 | Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	N/A	
Hydric Soil Present?		X
Wetland Hydrology Present?		X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:
Plot 28 is approximately 300 feet southeast and 1.5 feet higher in elevation than Plot 27.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	64%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	64%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	36%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 28

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-16	7.5YR 3/2	100	no redox				silt loam	
16-20	7.5YR 3/2	83	7.5YR 4/4	2	C	M	silty clay loam	mixed matrix
	7.5YR 4/2	15	no redox				silty clay loam	mixed matrix
20-24+	10YR 4/2	80	7.5YR 4/4	10	C	M	silty clay loam	
			7.5YR 4/6	10	C	M	silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ______ **No** **X**

Remarks:
Soils within the plot may have a mixed matrix due to discing or plowing which may have occurred 7 or more years ago.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):
Water Table Present?	Yes	X	No		Depth (inches): varied
Saturation Present? (includes capillary fringe)	Yes	X	No		Depth (inches): varied

Wetland Hydrology Present? **Yes** ______ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 2/22/2019
Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **29**
Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83
Soil Map Unit Name: McBee Silty Clay Loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No	
Hydrophytic Vegetation Present?	N/A		
Hydric Soil Present?		X	**Is the Sampled Area within a Wetland?** Yes ___ No X
Wetland Hydrology Present?		X	

Remarks:
Plot 29 is approximately 300 feet southeast and 1.5 feet higher in elevation than Plot 28.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	67%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	67%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	33%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 29

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-10	7.5YR 3/2	100	no redox				silt loam	
10-17	7.5YR 3/2	90	7.5YR 4/6	10	C	M	silty clay loam	
17-24+	7.5YR 4/2	80	7.5YR 4/4	10	C	M	clay loam	
			7.5YR 4/6	10	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9) **(except NW coast)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**NW coast**)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Frost-Heave Hummocks (D4)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):	
Water Table Present?	Yes		No	X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 2/22/2019
Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **30**
Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): none Slope (%): 2
Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83
Soil Map Unit Name: McBee Silty Clay Loam NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?		
Hydric Soil Present?		X
Wetland Hydrology Present?	X	

Is the Sampled Area within a Wetland? Yes ___ No **X**

Remarks:
Plot 30 is approximately 400 feet southeast and 1.5 feet lower in elevation than Plot 29. This plot is outside of the project area, it was collected in 2019 prior to some project boundary adjustments.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 100%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: ___ (A)
Total Number of Dominant Species Across All Strata: ___ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: #DIV/0! (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ___ No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 30

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc2	Texture	Remarks
0-9	7.5YR 3/2	no redox					silt loam	
9-16	7.5YR 3/2	90	7.5YR 4/6	10	C	M	silty clay loam	
16-24+	7.5YR 4/2	70	7.5YR 5/8	30	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

	Yes	No	Depth (inches)
Surface Water Present?		X	
Water Table Present?	X		varied
Saturation Present? (includes capillary fringe)	X		varied

Wetland Hydrology Present? Yes X **No** ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank | City/County: Banks, WA County | Sampling Date: 2/22/2019

Applicant/Owner: DCMB LLC | State: Oregon | Sampling Point: **31**

Investigator(s): C. Jonas Moiel, Margret Harburg | Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): none | Slope (%): 1

Subregion (LRR): A | Lat: 45.616 | Long: 123.121 | Datum: NAD 83

Soil Map Unit Name: McBee Silty Clay Loam | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___, or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	N/A	
Hydric Soil Present?		X
Wetland Hydrology Present?		X

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

Remarks:
Plot 31 is located approximately 300 feet northwest and 6 inches lower in elevation than Plot 30.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	70%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	30%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0	(A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** N/A **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **31**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-12	7.5YR 3/2	100	no redox				silt loam	
12-18	7.5YR 4/3	100	no redox				silty clay loam	
18-24+	7.5YR 4/3	90	7.5YR 4/6	10	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

__ Histosol (A1)
__ Histic Epipedon (A2)
__ Black Histic (A3)
__ Hydrogen Sulfide (A4)
__ Depleted Below Dark Surface (A11)
__ Thick Dark Surface (A12)
__ Sandy Mucky Mineral (S1)
__ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
__ Stripped Matrix (S6)
__ Loamy Mucky Mineral (F1) **(except MLRA 1)**
__ Loamy Gleyed Matrix (F2)
__ Depleted Matrix (F3)
__ Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

__ 2 cm Muck (A10)
__ Red Parent Material (TF2)
__ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ________

Depth (inches): ________

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

__ Surface Water (A1)
__ High Water Table (A2)
__ Saturation (A3)
__ Water Marks (B1)
__ Sediment Deposits (B2)
__ Drift Deposits (B3)
__ Algal Mat or Crust (B4)
__ Iron Deposits (B5)
__ Surface Soil Cracks (B6)
__ Inundation Visible on Aerial Imagery (B7)
__ Water-Stained Leaves (B9) **(except NW coast)**
__ Salt Crust (B11)
__ Aquatic Invertebrates (B13)
__ Hydrogen Sulfide Odor (C1)
__ Oxidized Rhizospheres along Living Roots (C3)
__ Presence of Reduced Iron (C4)
__ Recent Iron Reduction in Tilled Soils (C6)
__ Stunted or Stressed Plants (D1) (**LRR A**)
__ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

__ Water-Stained Leaves (B9) (**NW coast**)
__ Sparsely Vegetated Concave Surface (B8)
__ Drainage Patterns (B10)
__ Dry-Season Water Table (C2)
__ Saturation Visible on Aerial Imagery (C9)
__ Geomorphic Position (D2)
__ Shallow Aquitard (D3)
__ Frost-Heave Hummocks (D4)
__ FAC-Neutral Test (D5)
__ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

	Yes	No	Depth (inches):
Surface Water Present?		X	
Water Table Present?		X	
Saturation Present? (includes capillary fringe)		X	

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank   City/County: Banks, WA County   Sampling Date: 2/22/2019

Applicant/Owner: DCMB LLC   State: Oregon   Sampling Point: **32**

Investigator(s): C. Jonas Moiel, Margret Harburg   Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace   Local relief (concave, convex, none): none   Slope (%): 1

Subregion (LRR): A   Lat: 45.616   Long: 123.121   Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam   NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No ___
Hydric Soil Present?	Yes **X**	No ___
Wetland Hydrology Present?	Yes ___	No **X**

Is the Sampled Area within a Wetland? **Yes** ___ **No** **X**

Remarks:
Plot 32 is located approximately 300 feet northwest and 1.5 feet lower in elevation than Plot 31.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	75%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	75%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	25%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0	(A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **N/A** **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 32

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-11	7.5YR 3/2	100	no redox				silty clay loam	
11-24+	7.5YR 4/2	75	7.5YR 5/8	25	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
X Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches):	
Water Table Present?	Yes X	No ___	Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches):	varied

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period; however was very close to having hydrology in 2020. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank   City/County: Banks, WA County   Sampling Date: 2/22/2019
Applicant/Owner: DCMB LLC   State: Oregon   Sampling Point: **33**
Investigator(s): C. Jonas Moiel, Margret Harburg   Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace   Local relief (concave, convex, none): none   Slope (%): 1
Subregion (LRR): A   Lat: 45.616   Long: 123.121   Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam   NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	N/A	
Hydric Soil Present?	X	
Wetland Hydrology Present?		X

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

Remarks:
Plot 33 is located approximately 300 feet northwest and 6 inches lower in elevation than Plot 32.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	68%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	68%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 32%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** N/A **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 33

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-7	7.5YR 3/2	98	7.5YR 4/6	2	C	M	silt loam	
7-12	7.5YR 3/2	85	7.5YR 5/8	15	C	M	silty clay loam	
12-24+	7.5YR 4/2	75	7.5YR 5/8	25	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

__ Histosol (A1)
__ Histic Epipedon (A2)
__ Black Histic (A3)
__ Hydrogen Sulfide (A4)
__ Depleted Below Dark Surface (A11)
__ Thick Dark Surface (A12)
__ Sandy Mucky Mineral (S1)
__ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
__ Stripped Matrix (S6)
__ Loamy Mucky Mineral (F1) **(except MLRA 1)**
__ Loamy Gleyed Matrix (F2)
__ Depleted Matrix (F3)
X Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

__ 2 cm Muck (A10)
__ Red Parent Material (TF2)
__ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes** X **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

__ Surface Water (A1)
__ High Water Table (A2)
__ Saturation (A3)
__ Water Marks (B1)
__ Sediment Deposits (B2)
__ Drift Deposits (B3)
__ Algal Mat or Crust (B4)
__ Iron Deposits (B5)
__ Surface Soil Cracks (B6)
__ Inundation Visible on Aerial Imagery (B7)
__ Water-Stained Leaves (B9) **(except NW coast)**
__ Salt Crust (B11)
__ Aquatic Invertebrates (B13)
__ Hydrogen Sulfide Odor (C1)
__ Oxidized Rhizospheres along Living Roots (C3)
__ Presence of Reduced Iron (C4)
__ Recent Iron Reduction in Tilled Soils (C6)
__ Stunted or Stressed Plants (D1) (**LRR A**)
__ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

__ Water-Stained Leaves (B9) (**NW coast**)
__ Sparsely Vegetated Concave Surface (B8)
__ Drainage Patterns (B10)
__ Dry-Season Water Table (C2)
__ Saturation Visible on Aerial Imagery (C9)
__ Geomorphic Position (D2)
__ Shallow Aquitard (D3)
__ Frost-Heave Hummocks (D4)
__ FAC-Neutral Test (D5)
__ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes	X	No		Depth (inches):	
Water Table Present?	Yes	X	No		Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes	X	No		Depth (inches):	varied

Wetland Hydrology Present? **Yes** __ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period; however it was very close to having hydrology in 2020. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank | City/County: Banks, WA County | Sampling Date: 2/22/2019
Applicant/Owner: DCMB LLC | State: Oregon | Sampling Point: **34**
Investigator(s): C. Jonas Moiel, Margret Harburg | Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): none | Slope (%): 1
Subregion (LRR): A | Lat: 45.616 | Long: 123.121 | Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam | NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No
Hydric Soil Present?	Yes X	No
Wetland Hydrology Present?	Yes	No X

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

Remarks:
Plot 34 is located approximately 300 feet northwest and similar in elevation to Plot 33.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	75%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	75%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 25%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	0 (A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** N/A **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **34**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc2	Texture	Remarks
0-8	7.5YR 3/2	100	no redox				silty clay loam	
8-16	7.5YR 3/2	88	7.5YR 5/6	12	C	M	clay loam	
16-24+	7.5YR 4/2	70	7.5YR 5/6	30	C	M	clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

	Yes	No	Depth (inches):
Surface Water Present?	X		
Water Table Present?	X		varied
Saturation Present? (includes capillary fringe)	X		varied

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank — City/County: Banks, WA County — Sampling Date: 3/11/2019

Applicant/Owner: DCMB LLC — State: Oregon — Sampling Point: **35**

Investigator(s): C. Jonas Moiel, Margret Harburg — Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace — Local relief (concave, convex, none): none — Slope (%): 1

Subregion (LRR): A — Lat: 45.616 — Long: 123.121 — Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam — NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ____ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____ ,Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	N/A	
Hydric Soil Present?	X	
Wetland Hydrology Present?		X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Plot 35 is located approximately 300 feet northwest and 1 foot lower in elevation than Plot 34.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	70%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 30%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ____ Prevalence Index is ≤3.0[1]
- ____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** N/A **No** ____

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 35

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-10	7.5YR 3/2	95	7.5YR 4/6	5	C	M	silty clay loam	
10-14	7.5YR 3/1	92	7.5YR 4/6	8	C	M	clay loam	
14-24+	7.5YR 4/2	80	7.5YR 5/8	20	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches):	
Water Table Present?	Yes X	No ___	Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches):	varied

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 3/11/2019
Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **36**
Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1
Subregion (LRR): A Lat: 45.616 Long: 123.121 Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Riverine
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)
Are Vegetation Yes ,Soil ____ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____ ,Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No
Hydric Soil Present?	Yes X	No
Wetland Hydrology Present?	Yes	No X

Is the Sampled Area within a Wetland? **Yes** ____ **No X**

Remarks:
Plot 36 is located approximately 500 feet south of Plot 35 and 50 feet east of project area boundary.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	70%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 30%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes N/A** **No** ____

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **36**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-10	7.5YR 3/2	95	7.5YR 4/4	5	C	M	clay loam	
10-17	7.5YR 3/1	90	7.5YR 4/6	10	C	M	clay	
17-24+	7.5YR 4/1	75	7.5YR 5/8	25	C	M	clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ________

Depth (inches): ________

Hydric Soil Present? Yes **X** No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

	Yes	No	Depth (inches):
Surface Water Present?		X	
Water Table Present?	X		varied
Saturation Present? (includes capillary fringe)	X		varied

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 3/11/2019
Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **37**
Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): A Lat: 45.616 Long: 123.121 Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
Are Vegetation Yes ,Soil , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation ,Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No
Hydric Soil Present?	Yes **X**	No
Wetland Hydrology Present?	Yes	No **X?**

Is the Sampled Area within a Wetland? **Yes** **No X**

Remarks:
Plot 37 is approximatley 300 feet southeast and 1 foot higher in elevation than Plot 36.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	70%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	30%		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0	(A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
Prevalence Index is ≤3.0[1]
Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
Wetland Non-Vascular Plants[1]
Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes N/A** **No**

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 37

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-8	7.5YR 3/2	100	no redox				silt loam	
8-14	7.5YR 3/2	92	7.5YR 4/4	8	C	M	silty clay loam	
14-17	7.5YR 3/2	90	7.5YR 4/4	10	C	M	clay loam	
17-24+	7.5YR 4/2	75	7.5YR 5/8	25	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

__ Histosol (A1)
__ Histic Epipedon (A2)
__ Black Histic (A3)
__ Hydrogen Sulfide (A4)
__ Depleted Below Dark Surface (A11)
__ Thick Dark Surface (A12)
__ Sandy Mucky Mineral (S1)
__ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
__ Stripped Matrix (S6)
__ Loamy Mucky Mineral (F1) **(except MLRA 1)**
__ Loamy Gleyed Matrix (F2)
__ Depleted Matrix (F3)
X Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

__ 2 cm Muck (A10)
__ Red Parent Material (TF2)
__ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

__ Surface Water (A1)
__ High Water Table (A2)
__ Saturation (A3)
__ Water Marks (B1)
__ Sediment Deposits (B2)
__ Drift Deposits (B3)
__ Algal Mat or Crust (B4)
__ Iron Deposits (B5)
__ Surface Soil Cracks (B6)
__ Inundation Visible on Aerial Imagery (B7)
__ Water-Stained Leaves (B9) **(except NW coast)**
__ Salt Crust (B11)
__ Aquatic Invertebrates (B13)
__ Hydrogen Sulfide Odor (C1)
__ Oxidized Rhizospheres along Living Roots (C3)
__ Presence of Reduced Iron (C4)
__ Recent Iron Reduction in Tilled Soils (C6)
__ Stunted or Stressed Plants (D1) (**LRR A**)
__ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

__ Water-Stained Leaves (B9) (**NW coast**)
__ Sparsely Vegetated Concave Surface (B8)
__ Drainage Patterns (B10)
__ Dry-Season Water Table (C2)
__ Saturation Visible on Aerial Imagery (C9)
__ Geomorphic Position (D2)
__ Shallow Aquitard (D3)
__ Frost-Heave Hummocks (D4)
__ FAC-Neutral Test (D5)
__ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches):	
Water Table Present?	Yes X	No ___	Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches):	varied

Wetland Hydrology Present? **Yes** ___ **No** X?

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot was very close to or displayed wetland hydrology in 2020. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank   City/County: Banks, WA County   Sampling Date: 3/11/2019
Applicant/Owner: DCMB LLC   State: Oregon   Sampling Point: **38**
Investigator(s): C. Jonas Moiel, Margret Harburg   Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace   Local relief (concave, convex, none): none   Slope (%): 1
Subregion (LRR): A   Lat: 45.616   Long: 123.121   Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam   NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)
Are Vegetation Yes ,Soil ____, or Hydrology Yes significantly disturbed?   Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____ ,Soil ____, or Hydrology ____ naturally problematic?   (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No
Hydric Soil Present?	Yes X	No
Wetland Hydrology Present?	Yes	No X

Is the Sampled Area within a Wetland? **Yes** ____ **No X**

Remarks:
Plot 38 is approximatley 300 feet southeast and 1 foot higher in elevation than Plot 37.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	72%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	72%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 28%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** N/A **No** ____

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **38**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-11	7.5YR 3/2	99	7.5YR 4/4	1	C	M	silt loam	
11-16	7.5YR 4/2	70	7.5YR 5/8	25	C	M	silty clay loam	mixed matrix
	7.5YR 3/2	5	no redox				silty clay loam	mixed matrix
16-24+	7.5YR 4/2	70	7.5YR 5/8	30	C	M	silty clay loam	some sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

__ Histosol (A1)
__ Histic Epipedon (A2)
__ Black Histic (A3)
__ Hydrogen Sulfide (A4)
X Depleted Below Dark Surface (A11)
__ Thick Dark Surface (A12)
__ Sandy Mucky Mineral (S1)
__ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
__ Stripped Matrix (S6)
__ Loamy Mucky Mineral (F1) **(except MLRA 1)**
__ Loamy Gleyed Matrix (F2)
__ Depleted Matrix (F3)
__ Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

__ 2 cm Muck (A10)
__ Red Parent Material (TF2)
__ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ________

Depth (inches): ________

Hydric Soil Present? **Yes** X **No** ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

__ Surface Water (A1)
__ High Water Table (A2)
__ Saturation (A3)
__ Water Marks (B1)
__ Sediment Deposits (B2)
__ Drift Deposits (B3)
__ Algal Mat or Crust (B4)
__ Iron Deposits (B5)
__ Surface Soil Cracks (B6)
__ Inundation Visible on Aerial Imagery (B7)
__ Water-Stained Leaves (B9) **(except NW coast)**
__ Salt Crust (B11)
__ Aquatic Invertebrates (B13)
__ Hydrogen Sulfide Odor (C1)
__ Oxidized Rhizospheres along Living Roots (C3)
__ Presence of Reduced Iron (C4)
__ Recent Iron Reduction in Tilled Soils (C6)
__ Stunted or Stressed Plants (D1) (**LRR A**)
__ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

__ Water-Stained Leaves (B9) (**NW coast**)
__ Sparsely Vegetated Concave Surface (B8)
__ Drainage Patterns (B10)
__ Dry-Season Water Table (C2)
__ Saturation Visible on Aerial Imagery (C9)
__ Geomorphic Position (D2)
__ Shallow Aquitard (D3)
__ Frost-Heave Hummocks (D4)
__ FAC-Neutral Test (D5)
__ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

	Yes	No	Depth (inches):
Surface Water Present?		X	
Water Table Present?	X		varied
Saturation Present? (includes capillary fringe)	X		varied

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank | City/County: Banks, WA County | Sampling Date: 3/11/2019
Applicant/Owner: DCMB LLC | State: Oregon | Sampling Point: **39**
Investigator(s): C. Jonas Moiel, Margret Harburg | Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): none | Slope (%): 1
Subregion (LRR): A | Lat: 45.616 | Long: 123.121 | Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No ___
Hydric Soil Present?	Yes ___	No **X**
Wetland Hydrology Present?	Yes ___	No **X**

Is the Sampled Area within a Wetland? **Yes** ___ **No** **X**

Remarks:
Plot 39 is approximatley 300 feet southeast and 1 foot higher in elevation than Plot 38.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	70%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	30%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0	(A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **N/A** **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 39

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-11	7.5YR 3/2	100	no redox				silt loam	
11-14	7.5YR 3/2	90	7.5YR 4/6	10	C	M	clay loam	
14-24+	7.5YR 4/2	70	7.5YR 5/8	30	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes ______ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9) **(except NW coast)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**NW coast**)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Frost-Heave Hummocks (D4)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

	Yes	No	Depth (inches)
Surface Water Present?	X		
Water Table Present?	X		varied
Saturation Present? (includes capillary fringe)	X		varied

Wetland Hydrology Present? Yes ______ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 3/11/2019
Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **40**
Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1
Subregion (LRR): A Lat: 45.616 Long: 123.121 Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Riverine
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	N/A	
Hydric Soil Present?	X	
Wetland Hydrology Present?		X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:
Plot 40 is approximatley 300 feet southeast and 1 foot higher in elevation than Plot 39.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	70%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 30%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **40**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-11	7.5YR 3/2	100	no redox				silty clay loam	
11-24+	7.5YR 4/2	70	7.5YR 5/8	30	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes **X** No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9) **(except NW coast)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**NW coast**)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Frost-Heave Hummocks (D4)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):	
Water Table Present?	Yes		No	X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 3/11/2019

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **41**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___, or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No ___
Hydric Soil Present?	Yes **X**	No ___
Wetland Hydrology Present?	Yes **X**	No ___

Is the Sampled Area within a Wetland? **Yes X** **No ___**

Remarks:
Plot 41 is located within PHS' delineated "Wetland D".

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	60%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	60%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	40%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes N/A** **No ___**

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **41**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-10	7.5YR 3/2	95	7.5YR 4/4	5	C	M	silty clay loam	
10-24+	7.5YR 4/2	65	7.5YR 5/8	35	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9) **(except NW coast)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**NW coast**)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Frost-Heave Hummocks (D4)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes	X	No		Depth (inches):	
Water Table Present?	Yes	X	No		Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes	X	No		Depth (inches):	varied

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 3/11/2019
Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **42**
Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1
Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)
Are Vegetation Yes ,Soil ___, or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ ,Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	N/A	
Hydric Soil Present?		X
Wetland Hydrology Present?		X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:
Plot 42 is approximately 300 feet west and 4 inches higher in elevation than Plot 41.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	65%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	65%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 35%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 42

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc2	Texture	Remarks
0-9	7.5YR 3/2	97	7.5YR 4/4	3	C	M	silty clay loam	
9-15	7.5YR 3/2	88	7.5YR 4/6	12	C	M	clay loam	
15-24+	7.5YR 4/2	70	7.5YR 5/8	30	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9) **(except NW coast)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**NW coast**)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Frost-Heave Hummocks (D4)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

	Yes	No	Depth (inches)
Surface Water Present?		X	
Water Table Present?	X		
Saturation Present? (includes capillary fringe)	X		

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 3/11/2019
Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **43**
Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1
Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)
Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	N/A	
Hydric Soil Present?		X
Wetland Hydrology Present?		X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:
Plot 43 is approximately 300 feet west and 6 inches lower in elevation than Plot 42.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	80%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	80%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 20%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: 43

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-10	7.5YR 3/2	97	7.5YR 3/4	3	C	M	silty clay loam	
10-16	7.5YR 3/2	85	7.5YR 4/4	15	C	M	silty clay loam	
16-24+	7.5YR 4/3	80	7.5YR 4/6	20	C	M	silty clay loam	some sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes ___	No	X	Depth (inches):	___
Water Table Present?	Yes ___	No	X	Depth (inches):	___
Saturation Present? (includes capillary fringe)	Yes ___	No	X	Depth (inches):	___

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 3/11/2019

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **44**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No ___	**Is the Sampled Area within a Wetland?** **Yes** ___ **No** X
Hydric Soil Present?	Yes X	No ___	
Wetland Hydrology Present?	Yes ___	No X	

Remarks:
Plot 44 is approximately 325 feet west and 1 foot lower in elevation than Plot 43. It is in close proximity to East-West ditch.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	85%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	85%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	15%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0	(A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** N/A **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **44**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc2	Texture	Remarks
0-11	7.5YR 3/2	98	7.5YR 4/4	2	C	M	silt loam	
11-18	7.5YR 4/2	75	7.5YR 4/6	25	C	M	silty clay loam	
18-24+	7.5YR 4/1	75	7.5YR 5/8	25	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
X Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):	___
Water Table Present?	Yes ___	No X	Depth (inches):	___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 3/11/2019
Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **45**
Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1
Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)
Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	N/A	
Hydric Soil Present?	X	
Wetland Hydrology Present?		X
Is the Sampled Area within a Wetland?		X

Remarks:
Plot 45 is approximately 200 feet south and 1 foot higher in elevation than Plot 44. This plot is in proximity to the East-West ditch.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	70%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	30%		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** N/A **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **45**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-15	7.5YR 3/2	95	7.5YR 3/4	5	C	M	silt loam	
15-20	7.5YR 3/2	93	7.5YR 4/6	7	C	M	silty clay loam	
20-24+	7.5YR 4/2	70	7.5YR 4/6	30	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):	
Water Table Present?	Yes		No	X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 3/11/2019
Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **46**
Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1
Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)
Are Vegetation Yes ,Soil ___, or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ ,Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No ___
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

Remarks:
Plot 46 is approximately 325 feet east and 1 foot lower in elevation than Plot 45. Plot is in close proximity to East-West ditch.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	70%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 30%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0	(A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** N/A **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **46**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc2	Texture	Remarks
0-13	7.5YR 3/2	98	7.5YR 4/4	2	C	M	silty clay loam	
13-24+	7.5YR 4/2	70	7.5YR 5/8	30	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes ______ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

	Yes	No	Depth (inches)
Surface Water Present?		X	
Water Table Present?	X		varied
Saturation Present? (includes capillary fringe)	X		varied

Wetland Hydrology Present? Yes ______ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Attachment C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 3/11/2019
Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **47**
Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1
Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)
Are Vegetation Yes ,Soil ___, or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ ,Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	N/A	
Hydric Soil Present?		X
Wetland Hydrology Present?		X?

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:
Plot 47 is approximately 300 feet east and 1 foot higher in elevation than Plot 46. Plot is in close proximity to East-West ditch.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	70%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 30%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **47**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc2	Texture	Remarks
0-16	7.5YR 3/2	98	7.5YR 4/4	2	C	M	silt loam	
16-22	10YR 2/2	98	7.5YR 4/6	2	C	M	silty clay loam	
22-24+	10YR 2/2	80	7.5YR 5/8	20	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches):	
Water Table Present?	Yes X	No ___	Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches):	varied

Wetland Hydrology Present? Yes ______ **No** X?

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot was very close to displaying wetland hydrology in 2020. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 3/18/2019

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **48**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	N/A	
Hydric Soil Present?		X
Wetland Hydrology Present?		X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:
Plot 48 is approximately 100 feet west of project area boundary, and approximately 300 feet southwest of Plot 47.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	60%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	60%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 40%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	0 (A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **48**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-10	7.5YR 3/2	100	no redox				silty loam	
10-18	7.5YR 3/2	90	7.5YR 4/4	10	C	M	silty clay loam	
18-24+	7.5YR 4/3	85	7.5YR 5/6	15	C	M	silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes ______	No X	Depth (inches): ______
Water Table Present?	Yes ______	No X	Depth (inches): ______
Saturation Present? (includes capillary fringe)	Yes ______	No X	Depth (inches): ______

Wetland Hydrology Present? Yes ______ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 3/18/2019
Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **49**
Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1
Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)
Are Vegetation Yes ,Soil ___, or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ ,Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No ___
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

Remarks:
Plot 49 is approximately 275 feet west and 6 inches lower in elevation than Plot 48.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	60%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	60%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	40%		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0	(A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** N/A **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **49**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-12	7.5YR 3/2	99	7.5YR 4/4	1	C	M	silty loam	
12-24+	7.5YR 4/3	90	7.5YR 4/6	10	C	M	silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):	___	
Water Table Present?	Yes ___	No X	Depth (inches):	varied	
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	varied	

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Attachment C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank | City/County: Banks, WA County | Sampling Date: 3/18/2019

Applicant/Owner: DCMB LLC | State: Oregon | Sampling Point: **50**

Investigator(s): C. Jonas Moiel, Margret Harburg | Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): none | Slope (%): 1

Subregion (LRR): A | Lat: 45.616 | Long: -123.121 | Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___, or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No ___
Hydric Soil Present?	Yes **X?**	No ___
Wetland Hydrology Present?	Yes ___	No **X**

Is the Sampled Area within a Wetland? **Yes** ___ **No** **X**

Remarks:
Plot 50 is approximately 300 feet west and 1.5 inches lower in elevation than Plot 49.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	70%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 30%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **N/A** **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **50**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2		
0-11	7.5YR 3/2	100	no redox				silty loam	
11-15	7.5YR 4/2	60	7.5YR 5/8	20	C	M	silty clay loam	mixed matrix
	7.5YR 3/2	20	no redox				silty clay loam	mixed matrix
15-24+	7.5YR 4/2	70	7.5YR 4/6	30	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
X Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes **X?** No ___

Remarks:
Mixed matrix may be the result of discing or tilling which may have occurred 7 or more years ago.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):	___
Water Table Present?	Yes ___	No X	Depth (inches):	___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	___

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot did not display wetland hydrology for either monitoring period. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank | City/County: Banks, WA County | Sampling Date: 3/18/2019

Applicant/Owner: DCMB LLC | State: Oregon | Sampling Point: **51**

Investigator(s): C. Jonas Moiel, Margret Harburg | Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): none | Slope (%): 1

Subregion (LRR): A | Lat: 45.616 | Long: -123.121 | Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are “Normal Circumstances” present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No ___
Hydric Soil Present?	Yes **X**	No ___
Wetland Hydrology Present?	Yes **X**	No ___

Is the Sampled Area within a Wetland? **Yes X** **No** ___

Remarks:
Plot 51 is located within PHS' delineated "Wetland F".

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	45%	Yes	FAC
2. *Poa annua*	5%	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	50%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 50%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	0 (A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes N/A** **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **51**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-11	7.5YR 3/2	95	7.5YR 4/4	5	C	M	silty clay loam	
11-24+	7.5YR 4/2	80	7.5YR 5/8	20	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
X Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

X Surface Water (A1)
X High Water Table (A2)
X Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches):	varied
Water Table Present?	Yes X	No ___	Depth (inches):	varied
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches):	varied

Wetland Hydrology Present? Yes X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Attachment C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot displayed wetland hydrology in 2020. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank | City/County: Banks, WA County | Sampling Date: 3/18/2019

Applicant/Owner: DCMB LLC | State: Oregon | Sampling Point: **52**

Investigator(s): C. Jonas Moiel, Margret Harburg | Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): none | Slope (%): 1

Subregion (LRR): A | Lat: 45.616 | Long: -123.121 | Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	N/A	
Hydric Soil Present?		X
Wetland Hydrology Present?	X	

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

Remarks:
Plot 52 is approximately 300 feet east and 1 foot higher in elevation than Plot 51.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	45%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	45%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 55%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0	(A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** N/A **No** ___

Remarks:
`

SOIL

Sampling Point: **52**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-13	7.5YR 3/2	100	no redox				silty clay loam	
13-24+	7.5YR 4/2	70	7.5YR 5/8	30	C	M	silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ **No X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
X High Water Table (A2)
X Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): varied
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): varied

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Appendix C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot displayed wetland hydrology in 2020. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 3/18/2019

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **53**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___, or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No ___
Hydric Soil Present?	Yes **X**	No ___
Wetland Hydrology Present?	Yes **X**	No ___

Is the Sampled Area within a Wetland? **Yes X** **No** ___

Remarks:
Plot 53 is located within PHS' delineated "Wetland E".

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	90%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	90%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	10%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 0	(A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes N/A** **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **53**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc2	Texture	Remarks
0-14	7.5YR 3/2	90	7.5YR 4/6	8	C	M	clay loam	
			7.5YR 4/6	2	C	PL	clay loam	
14-24+	10YR 4/1	70	7.5YR 5/8	30	C	M	clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X **No** ______

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

X Surface Water (A1)
X High Water Table (A2)
X Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes X	No ______	Depth (inches): varied
Water Table Present?	Yes X	No ______	Depth (inches): varied
Saturation Present? (includes capillary fringe)	Yes X	No ______	Depth (inches): varied

Wetland Hydrology Present? Yes X **No** ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: See Exhibit C.

Remarks:
Long term hydrology monitoring occurred between 2/14/19-3/23/19 and 1/6/20-2/28/20; please refer to Section 4.3 of Exhibit C for more information. This plot displayed wetland hydrology in 2020. Hydrology is disturbed due to existing ditches and tiling systems.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 5/7/2020
Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **A**
Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1
Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	NA	
Hydric Soil Present?		X
Wetland Hydrology Present?		

Is the Sampled Area within a Wetland? Yes ___ No **X**

Remarks:
Plot A is located approximately 80 feet west and 1 foot lower than Plot 7, and approximatley 75 feet east and one foot higher than Plot B.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	90%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	90%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	10%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **N/A** No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **A**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-12	7.5YR3/2	100	none				SiL	
12-24	7.5YR3/2	70	7.5YR4/4	20	C	M	SiCL	
			7.5YR5/6	10	C	M	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ____

Depth (inches): ____

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches): ____
Water Table Present? Yes ____ No ____ Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 5/7/2020

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **B**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ____ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____ ,Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No ____
Hydric Soil Present?	Yes ____	No **X**
Wetland Hydrology Present?	Yes ____	No ____

Is the Sampled Area within a Wetland? **Yes** ____ **No** **X**

Remarks:
Plot B is approximately 75 feet west and 1 foot lower in elevation than Plot A; it is also approximately 85 feet east of Plot 8. Ground is very flat. Multiple soil pits were augered between Plot B and Plot 8 to determine the hydric soil boundary.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	95%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	95%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum 5%			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Wetland Non-Vascular Plants[1]

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **N/A** **No** ____

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-13	7.5YR3/2	100	none				SiL	
13-20+	7.5YR3/2	80	7.5YR4/4	15	C	M	SiCL	
			7.5YR5/6	5	C	M	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ________

Depth (inches): ________

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches): ____
Water Table Present? Yes ____ No ____ Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank   City/County: Banks, WA County   Sampling Date: 5/7/2020

Applicant/Owner: DCMB LLC   State: Oregon   Sampling Point: **C**

Investigator(s): C. Jonas Moiel, Margret Harburg   Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace   Local relief (concave, convex, none): none   Slope (%): <1

Subregion (LRR): A   Lat: 45.616   Long: -123.121   Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam   NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ____ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____ ,Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No
Hydric Soil Present?	Yes	No **X**
Wetland Hydrology Present?	Yes	No

Is the Sampled Area within a Wetland? **Yes** ____ **No X**

Remarks:
Plot C is approximately 100 feet east and 6 inches higher in elevation than Plot 14. Ground is very flat. Multiple soil pits were augered between Plot C and Plot 14 to determine the hydric soil boundary.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	95%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	95%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	5%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
____ Prevalence Index is ≤3.0[1]
____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Wetland Non-Vascular Plants[1]
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes N/A** **No** ____

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-9	7.5YR3/2	100	none				SiL	
9-24+	7.5YR3/2	90	7.5YR4/6	10	C	M	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ______ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present? Yes ______ No ______ Depth (inches): ______

Water Table Present? Yes ______ No ______ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ______ Depth (inches): ______

Wetland Hydrology Present? **Yes** ______ **No** ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 5/7/2020

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **D**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ____ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____ ,Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No
Hydric Soil Present?	Yes X	No
Wetland Hydrology Present?	Yes	No

Is the Sampled Area within a Wetland? **Yes** ____ **No** ____

Remarks:
Plot D is approximately 70 feet west and 6 inches lower in elevation than Plot 20. Ground is very flat. Multiple soil pits were augered between Plot D and Plot 20 to determine the hydric soil boundary.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	95%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	95%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	5%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** N/A **No** ____

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **D**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-7	7.5YR3/2	100	none				SiL	
7-12	7.5YR3/2	92	7.5YR4/6	8	C	M	SiL	
12-16	7.5YR3/1+	92	7.5YR5/6	8	C	M	SiL	
16-20+	7.5YR3/1	90	7.5YR4/6	10	C	M	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___________

Depth (inches): ___________

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___
Water Table Present? Yes ___ No ___ Depth (inches): ___
Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 5/7/2020

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: E

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No
Hydric Soil Present?	Yes	No X
Wetland Hydrology Present?	Yes	No

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:
Plot E is approximately 125 feet east and 4 inches higher in elevation than Plot 27. Ground is very flat. Multiple soil pits were augered between Plot E and Plot 27 to determine the hydric soil boundary.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	90%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	90%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	10%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **E**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-9	7.5YR3/2	100	none				SiL	
9-12	7.5YR3/2	92	7.5YR4/6	8	C	M	SiL	
12-24+	7.5YR3/1	85	7.5YR4/6	15	C	M	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9) **(except NW coast)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**NW coast**)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Frost-Heave Hummocks (D4)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes ____	No ____	Depth (inches): ____
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 5/7/2020

Applicant/Owner: State: Oregon Sampling Point: F

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ____ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____ ,Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	N/A	
Hydric Soil Present?		X
Wetland Hydrology Present?		

Is the Sampled Area within a Wetland? Yes ____ No ____

Remarks:
Plot F is approximately 75 feet east and same elevation as Plot G. Ground is very flat. Multiple soil pits were augered between Plot F and Plot G to determine the hydric soil boundary.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	95%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	95%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	5%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ____

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **F**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-9	7.5YR3/2	100	none				SiL	
9-11	7.5YR3/2	95	7.5YR4/6	5	C	M	SiL	
11-20+	7.5YR3/1	80	7.5YR4/6	20	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ______ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present? Yes ______ No ______ Depth (inches): ______
Water Table Present? Yes ______ No ______ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ______ No ______ Depth (inches): ______

Wetland Hydrology Present? **Yes** ______ **No** ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 5/7/2020

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **G**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ____ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____ ,Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No
Hydric Soil Present?	Yes X	No
Wetland Hydrology Present?	Yes	No

Is the Sampled Area within a Wetland? **Yes** ____ **No** ____

Remarks:
Plot G is approximately 75 feet west and same elevation as Plot F. Ground is very flat. Multiple soil pits were augered between Plot F and Plot G to determine the hydric soil boundary.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	98%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	98%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 2%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** N/A **No** ____

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **G**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-7	7.5YR3/2	100	none				SiL	
7-12	7.5YR3/1	80	7.5YR4/6	20	C	M	SiCL	
12-20+	7.5YR4/1	70	7.5YR5/8	30	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9) **(except NW coast)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**NW coast**)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Frost-Heave Hummocks (D4)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 5/7/2020

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **H**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No	Is the Sampled Area within a Wetland?
Hydric Soil Present?	Yes	No **X**	
Wetland Hydrology Present?	Yes	No	**Yes** ___ **No** ___

Remarks:
Plot H is approximately 75 feet southeast and same elevation as Plot I. Ground is very flat. Multiple soil pits were augered between Plot H and Plot I to determine the hydric soil boundary.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	95%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	95%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum 5%			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **N/A** **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: H

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-12	7.5YR3/2	100	none				SiL	
12-20+	7.5YR4/2	75	7.5YR5/6	25	C	M	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? **Yes** ______ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present? Yes ______ No ______ Depth (inches): ______

Water Table Present? Yes ______ No ______ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ______ Depth (inches): ______

Wetland Hydrology Present? **Yes** ______ **No** ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 5/7/2020

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: I

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation ___ ,Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes ___	No ___

Is the Sampled Area within a Wetland? Yes ___ No ___

Remarks:
Plot I is approximately 75 feet northwest and same elevation as Plot H. Ground is very flat. Multiple soil pits were augered between Plot H and Plot I to determine the hydric soil boundary.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	98%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	98%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	2%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	___	x 1 = ___
FACW species	___	x 2 = ___
FAC species	___	x 3 = ___
FACU species	___	x 4 = ___
UPL species	___	x 5 = ___
Column Totals:	0 (A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: I

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-8	7.5YR3/2	100	none				SiL	
8-12	7.5YR3/2	95	7.5YR4/6	5	C	M	SiCL	
12-15	7.5YR3/1+	85	7.5YR4/6	15	C	M	CL	
15-20+	7.5YR4/2	70	7.5YR4/6	30	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___
Water Table Present? Yes ___ No ___ Depth (inches): ___
Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank   City/County: Banks, WA County   Sampling Date: 5/19/2020
Applicant/Owner: DCMB LLC   State: Oregon   Sampling Point: **J**
Investigator(s): C. Jonas Moiel, Margret Harburg   Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace   Local relief (concave, convex, none): none   Slope (%): <1
Subregion (LRR): A   Lat: 45.616   Long: -123.121   Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam   NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No ___
Hydric Soil Present?	Yes **X**	No ___
Wetland Hydrology Present?	Yes ___	No ___

Is the Sampled Area within a Wetland? **Yes** ___ **No** ___

Remarks:
Plot J is approximately 80 feet southwest and 2 inches lower in elevation than Plot K; it is also approximately 90 feet northeast and same elevation of Plot L. Ground is very flat. Multiple soil pits were augered between Plot J, Plot K, and Plot L to determine the hydric soil boundary.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	90%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	90%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 10%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **N/A** **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **J**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-7	7.5YR3/2	100	none				SiL	
7-14	7.5YR3/2	95	7.5YR4/4	5	C	M	SiL	fine
14-24+	7.5YR3/2	88	7.5YR4/6	12	C	M	SiCL	medium

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___________

Depth (inches): ___________

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___
Water Table Present? Yes ___ No ___ Depth (inches): ___
Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank | City/County: Banks, WA County | Sampling Date: 5/19/2020

Applicant/Owner: DCMB LLC | State: Oregon | Sampling Point: K

Investigator(s): C. Jonas Moiel, Margret Harburg | Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): none | Slope (%): <1

Subregion (LRR): A | Lat: 45.616 | Long: -123.121 | Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	N/A	
Hydric Soil Present?		X
Wetland Hydrology Present?		

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:
Plot K is approximately 80 feet northeast and 2 inches higher in elevation than Plot J. Ground is very flat. Multiple soil pits were augered between Plot J and Plot K to determine the hydric soil boundary.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	95%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	95%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 5%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: K

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-11	7.5YR3/2	98	7.5YR4/4	2	C	M	SiL	fine
11-16	7.5YR3/2	93	7.5YR4/6	7	C	M	SiCL	medium
16-24+	7.5YR3/1+	85	7.5YR4/6	15	C	M	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ________

Depth (inches): ________

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches): ____
Water Table Present? Yes ____ No ____ Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank   City/County: Banks, WA County   Sampling Date: 5/19/2020

Applicant/Owner: DCMB LLC   State: Oregon   Sampling Point: L

Investigator(s): C. Jonas Moiel, Margret Harburg   Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace   Local relief (concave, convex, none): none   Slope (%): 1

Subregion (LRR): A   Lat: 45.616   Long: -123.121   Datum: NAD 83

Soil Map Unit Name: Wapato Silty ClayLoam   NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ____, or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____ ,Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No
Hydric Soil Present?	Yes	No X
Wetland Hydrology Present?	Yes	No

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:
Plot L is approximately 85 feet southwest and same elevation as Plot J; it is also approximately 75 feet east and same elevation as Plot 22. Ground is very flat. Multiple soil pits were augered between Plot J and Plot L to determine the hydric soil boundary.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	95%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	95%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 5%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0	(A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Wetland Non-Vascular Plants[1]

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ____

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: L

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-12	7.5YR3/2	98	7.5YR4/6	2	C	M	SiL	
12-17	7.5YR3/2	88	7.5YR5/8	12	C	M	SiCL	
17-24+	7.5YR3/2	80	7.5YR5/8	10	C	M	CL	
			10YR7/6	10	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ______ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9) **(except NW coast)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**NW coast**)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Frost-Heave Hummocks (D4)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present?	Yes ______	No ______	Depth (inches): ______
Water Table Present?	Yes ______	No ______	Depth (inches): ______
Saturation Present? (includes capillary fringe)	Yes ______	No ______	Depth (inches): ______

Wetland Hydrology Present? **Yes** ______ **No** ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank | City/County: Banks, WA County | Sampling Date: 5/19/2020

Applicant/Owner: DCMB LLC | State: Oregon | Sampling Point: **M**

Investigator(s): C. Jonas Moiel, Margret Harburg | Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): none | Slope (%): <1

Subregion (LRR): A | Lat: 45.616 | Long: -123.121 | Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam | NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **N/A**	No ___
Hydric Soil Present?	Yes ___	No **X**
Wetland Hydrology Present?	Yes ___	No ___

Is the Sampled Area within a Wetland? **Yes** ___ **No** **X**

Remarks:
Plot M is located approximately 80 feet west and at the same elevation as Plot 25. Ground is very flat. Multiple soil pits were augered between Plot M and Plot 25 to determine the hydric soil boundary.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	90%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	90%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 10%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0	(A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **N/A** **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **M**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-10	7.5YR3/2	100	none				SiL	
10-15	7.5YR3/2	93	7.5YR4/6	7	C	M	SiCL	
15-24+	7.5YR4/2	60	7.5YR4/6	40	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present? Yes ______ No ______ Depth (inches): ______

Water Table Present? Yes ______ No ______ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ______ Depth (inches): ______

Wetland Hydrology Present? Yes ______ **No** ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 5/19/2020

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **N**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No
Hydric Soil Present?	Yes	No X
Wetland Hydrology Present?	Yes	No

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

Remarks:
Plot N is located approximately 70 northwest and at the same elevation as Plot 35. Ground is very flat. Multiple soil pits were augered between Plot N and Plot 35 to determine the hydric soil boundary.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	70%	Yes	FAC
2. *Fraxinus latifolia seedlings*	2%	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	72%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 28%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** N/A **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: N

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc2	Texture	Remarks
0-13	7.5YR3/2	100	none				SiL	
13-20	7.5YR3/1	88	7.5YR4/6	12	C	M	SiCL	
20-24+	7.5YR4/1	70	7.5YR5/8	30	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___
Water Table Present? Yes ___ No ___ Depth (inches): ___
Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes ___ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 6/10/2020
Applicant/Owner: DCMB LLC State: Oregon Sampling Point: O
Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1
Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes ___	No ___

Is the Sampled Area within a Wetland? **Yes** ___ **No** ___

Remarks:
Plot 0 is approximately 80 feet southwest and 1 foot lower in elevation than Plot P. Ground is very flat. Multiple soil pits were augered between Plot O and Plot P to determine the hydric soil boundary.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	85%	Yes	FAC
2. *Lolium perenne*	15%	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	100%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0	(A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** N/A **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: O

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-8	7.5YR3/2	100	none				SiCL	
8-10	7.5YR3/2	95	7.5YR4/6	5	C	M	SiL	
10-17	7.5YR3/2	92	7.5YR4/6	8	C	M	SiL	
17-24+	7.5YYR4/2	85	7.5YR4/6	15	C	M	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___
Water Table Present? Yes ___ No ___ Depth (inches): ___
Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 6/10/2020

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **P**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ____ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____ ,Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No ____
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No ____

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Plot P is approximately 80 feet northeast and 1 foot higher in elevation than Plot O. Ground is very flat. Multiple soil pits were augered between Plot O and Plot P to determine the hydric soil boundary.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	90%	Yes	FAC
2. *Lolium perenne*	10%	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	100%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0	(A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
____ Prevalence Index is ≤3.0[1]
____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Wetland Non-Vascular Plants[1]
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** N/A **No** ____

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: **P**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-10	7.5YR3/2	100	none				SiL	
10-16	7.5YR3/2	95	7.5YR4/4	5	C	M	SiL	
16-24+	7.5YR3/2	93	7.5YR4/6	7	C	M	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ________

Depth (inches): ________

Hydric Soil Present? Yes ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches): ____
Water Table Present? Yes ____ No ____ Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): ____

Wetland Hydrology Present? Yes ____ **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 6/10/2020

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **Q**

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes ___	No ___

Is the Sampled Area within a Wetland? **Yes** ___ **No** ___

Remarks:
Plot Q is approximately 75 feet southeast and 2 inches lower in elevation than Plot R. Ground is very flat. Multiple soil pits were augered between Plot Q and Plot R to determine the hydric soil boundary.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	95%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	95%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	5%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** N/A **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: Q

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-8	7.5YR3/2	100	none				SiL	
8-14	7.5YR3/2	95	7.5YR4/6	5	C	M	SiL	
14-24+	7.5YR4/2	80	7.5YR4/6	20	C	M	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ________

Depth (inches): ________

Hydric Soil Present? Yes X **No** ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches): ____
Water Table Present? Yes ____ No ____ Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): ____

Wetland Hydrology Present? Yes ____ **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank   City/County: Banks, WA County   Sampling Date: 6/10/2020
Applicant/Owner: DCMB LLC   State: Oregon   Sampling Point: **R**
Investigator(s): C. Jonas Moiel, Margret Harburg   Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace   Local relief (concave, convex, none): none   Slope (%): <1
Subregion (LRR): A   Lat: 45.616   Long: -123.121   Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam   NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation Yes ,Soil ___, or Hydrology Yes significantly disturbed?   Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ ,Soil ___, or Hydrology ___ naturally problematic?   (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No ___
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No ___

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:
Plot R is approximately 75 feet northwest and 2 inches higher in elevation than Plot Q. Ground is very flat. Multiple soil pits were augered between Plot Q and Plot R to determine the hydric soil boundary.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	95%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	95%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 5%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0	(A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: R

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-12	7.5YR3/2	99	7.5YR4/6	1	C	M	SiL	
12-14	7.5YR3/2	90	7.5YR4/6	10	C	M	SiCL	
14-24+	7.5YR3/2	80	7.5YR4/4	10	C	M	SiCL	
			7.5YR4/6	10	C	M	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___
Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___
Water Table Present? Yes ___ No ___ Depth (inches): ___
Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 6/10/2020
Applicant/Owner: DCMB LLC State: Oregon Sampling Point: **S**
Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1
Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation Yes ,Soil ___ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ ,Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes ___	No ___

Is the Sampled Area within a Wetland? **Yes** ___ **No** ___

Remarks:
Plot S is approximately 100 feet south of PHS' delineated "Wetland E" and at the approximate same elevation.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	95%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	95%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	5%		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** N/A **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: S

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2		
0-6	7.5YR3/2	100	none				SiL	
6-11	7.5YR3/2	94	7.5YR4/6	6	C	M	SiL	
11-14	7.5YR3/2	60	7.5YR4/6	10	C	M	SiCL	
	7.5YR3/1	10	7.5YR5/8	20	C	M	SiCL	
14-20+	7.5YR4/2	80	7.5YR5/8	20	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ________

Depth (inches): ________

Hydric Soil Present? Yes X No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches): ____
Water Table Present? Yes ____ No ____ Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 6/10/2020
Applicant/Owner: State: Oregon Sampling Point: T
Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1
Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83
Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation Yes ,Soil ___, or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ ,Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes N/A	No
Hydric Soil Present?	Yes X	No
Wetland Hydrology Present?	Yes	No

Is the Sampled Area within a Wetland? **Yes** ___ **No** ___

Remarks:
Plot T is approximately 75 feet east and 1 foot higher than PHS' delineated "Wetland E". It is also approximately 100 feet southwest and 1 foot lower in elevation than Plot U. Ground is very flat. Multiple soil pits were augered between Plot T and Plot U to determine the hydric soil boundary.

VEGETATION

Tree Stratum (Plot size: 50 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	98%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	98%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		
% Bare Ground in Herb Stratum	2%		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals:	0 (A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** N/A **No** ___

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: T

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc2	Texture	Remarks
0-8	7.5YR3/2	98	7.5YR4/6	2	C	M	SiL	
8-17	7.5YR3/2	90	7.5YR4/6	10	C	M	SiCL	
17-24+	7.5YR4/2	75	7.5YR5/8	25	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

__ Histosol (A1)
__ Histic Epipedon (A2)
__ Black Histic (A3)
__ Hydrogen Sulfide (A4)
__ Depleted Below Dark Surface (A11)
__ Thick Dark Surface (A12)
__ Sandy Mucky Mineral (S1)
__ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
__ Stripped Matrix (S6)
__ Loamy Mucky Mineral (F1) **(except MLRA 1)**
__ Loamy Gleyed Matrix (F2)
__ Depleted Matrix (F3)
X Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

__ 2 cm Muck (A10)
__ Red Parent Material (TF2)
__ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

__ Surface Water (A1)
__ High Water Table (A2)
__ Saturation (A3)
__ Water Marks (B1)
__ Sediment Deposits (B2)
__ Drift Deposits (B3)
__ Algal Mat or Crust (B4)
__ Iron Deposits (B5)
__ Surface Soil Cracks (B6)
__ Inundation Visible on Aerial Imagery (B7)
__ Water-Stained Leaves (B9) **(except NW coast)**
__ Salt Crust (B11)
__ Aquatic Invertebrates (B13)
__ Hydrogen Sulfide Odor (C1)
__ Oxidized Rhizospheres along Living Roots (C3)
__ Presence of Reduced Iron (C4)
__ Recent Iron Reduction in Tilled Soils (C6)
__ Stunted or Stressed Plants (D1) (**LRR A**)
__ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

__ Water-Stained Leaves (B9) (**NW coast**)
__ Sparsely Vegetated Concave Surface (B8)
__ Drainage Patterns (B10)
__ Dry-Season Water Table (C2)
__ Saturation Visible on Aerial Imagery (C9)
__ Geomorphic Position (D2)
__ Shallow Aquitard (D3)
__ Frost-Heave Hummocks (D4)
__ FAC-Neutral Test (D5)
__ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___
Water Table Present? Yes ___ No ___ Depth (inches): ___
Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes ___ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Dairy Creek Mitigation Bank City/County: Banks, WA County Sampling Date: 6/10/2020

Applicant/Owner: DCMB LLC State: Oregon Sampling Point: U

Investigator(s): C. Jonas Moiel, Margret Harburg Section, Township, Range: T2N R4W S36

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): A Lat: 45.616 Long: -123.121 Datum: NAD 83

Soil Map Unit Name: Wapato Silty Clay Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation Yes ,Soil ____ , or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____ ,Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	N/A	
Hydric Soil Present?		X
Wetland Hydrology Present?		

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:
Plot U approximately 100 feet northeast and 1 foot higher in elevation than Plot T. Ground is very flat. Multiple soil pits were augered between Plot T and Plot U to determine the hydric soil boundary.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 50 ft.)			
1.			
2.			
3.			
4.			
Total Cover:	0%		
Sapling/Shrub Stratum (Plot size: 25 ft.)			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0%		
Herb Stratum (Plot size: 5 ft.)			
1. *Schedonorus arundinaceus*	96%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	96%		
Woody Vine Stratum (Plot Size: 5 ft.)			
1.			
2.			
Total Cover:	0%		

% Bare Ground in Herb Stratum 4%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	0	(A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes N/A No ____

Remarks:
Plot is located within agricultural area; tall fescue was planted.

SOIL

Sampling Point: U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc2	Texture	Remarks
0-14	7.5YR3/2	100	none				SiL	
14-24+	7.5YR4/2	80	7.5YR4/6	20	C	M	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9) **(except NW coast)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**NW coast**)
___ Sparsely Vegetated Concave Surface (B8)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Frost-Heave Hummocks (D4)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)

Field Observations:

Surface Water Present? Yes ______ No ______ Depth (inches): ______
Water Table Present? Yes ______ No ______ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ______ No ______ Depth (inches): ______

Wetland Hydrology Present? Yes ______ **No** ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydrology data collected at this location.

Appendix H: ORWAP Information, Data and Assumptions

Oregon Rapid Wetland Assessment (ORWAP) V.3.2.*	Cover Page: Basic Description of Assessment
Site Name:	Dairy Creek Mitigation Bank- Wetland E, G, H, I (Riverine) Baseline Conditions
Investigator Name:	**C. Jonas Moiel**
Date of Field Assessment:	Various dates in 2020 (including 7/22)
County:	Washington
Nearest Town:	Banks
Latitude (decimal degrees):	45.615196
Longitude (decimal degrees):	-123.1212
TRS, quarter/quarter section and tax lot(s):	Township 2 North, Range 4 West, Section 36, utilizing a portion of tax lot 800 (144.40 ac), and the entirety of tax lot 603 (1.76 ac)
Approximate size of the Assessment Area (AA, in acres):	2.6 acres
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	100%
If delineated, DSL file number (WD #) if known:	WD#2019-0378; updated 2021
Cowardin Systems & Classes (indicate all present, based on field visit and/or aerial imagery): Systems: Palustrine =P, Riverine =R, Lacustrine =L, Estuarine =E Classes: Emergent =EM, Scrub-Shrub =SS, Forested =FO, Aquatic Bed (incl. SAV) =AB, Open Water =OW, Unconsolidated Bottom =UB, Unconsolidated Shore =US	PEM currently. Future design includes PFO.
Predominant HGM Class: Estuarine=E, Lacustrine=L, Riverine=R, S= Slope, F= Flats, D= Depressional	Riverine
Soil Unit Mapped in Most of the AA:	Wapato silty clay loam
If tidal, the tidal phase during most of visit:	NA
What percent (approximate) of the **wetland** were you able to visit?	100
What percent (approximate) of the **AA** were you able to visit?	100
Have you attended an ORWAP training session? If so, indicate approximate month & year.	Yes. Sept. 2016
How many wetlands have you assessed previously using ORWAP (approximate)?	20
Comments about the site or this ORWAP assessment (attach extra page if desired):	This ORWAP assessment is for a wetland mitigation bank. The AA is for baseline Riverine Wetlands E, G, H, I.

ORWAP V.3.2 Site Name:	Dairy Creek Mitigation Bank- Wetland E, G, H, I (Riverine) Baseline Conditions
Investigator Name:	C. Jonas Moiel
Date of Field Assessment:	Various dates in 2020 (including 7/22)

Scores will appear below after data are entered in worksheets OF, F, T, and S. See Manual for definitions and descriptions of how scores were computed and ratings assigned.

Normalized Scores & Ratings for this Assessment Area (AA):

Specific Functions or Values:	Function Score	Function Rating	Rating Break Proximity	Values Score	Values Rating	Rating Break Proximity
Water Storage & Delay (WS)	6.29	Moderate		8.33	Higher	
Sediment Retention & Stabilization (SR)	3.38	Lower	LM	3.75	Moderate	LM
Phosphorus Retention (PR)	3.96	Moderate		4.30	Moderate	
Nitrate Removal & Retention (NR)	2.80	Lower		3.53	Lower	LM
Anadromous Fish Habitat (FA)	6.00	Moderate		10.00	Higher	
Resident Fish Habitat (FR)	0.00	Lower		0.00	Lower	
Amphibian & Reptile Habitat (AM)	6.25	Moderate		2.25	Lower	
Waterbird Nesting Habitat (WBN)	8.02	Higher		2.28	Moderate	
Waterbird Feeding Habitat (WBF)	3.89	Moderate		2.92	Moderate	LM
Aquatic Invertebrate Habitat (INV)	1.00	Lower		1.42	Lower	
Songbird, Raptor, Mammal Habitat (SBM)	1.71	Lower		5.00	Moderate	
Water Cooling (WC)	2.22	Lower	LM	0.00	Lower	
Native Plant Diversity (PD)	4.97	Moderate		6.67	Moderate	MH
Pollinator Habitat (POL)	5.36	Moderate		4.64	Moderate	
Organic Nutrient Export (OE)	4.89	Moderate				
Carbon Sequestration (CS)	2.46	Lower				
Public Use & Recognition (PU)				2.76	Lower	

Other Attributes:	Score	Rating	Rating Break Proximity
Wetland Sensitivity (SEN)	0.92	Lower	
Wetland Ecological Condition (EC)	0.00	Lower	
Wetland Stressors (STR)	6.79	Higher	

GROUPS	Selected Function	Function Rating	Rating Break Proximity	Values Rating	Rating Break Proximity
Hydrologic Function (WS)	Water Storage & Delay (WS)	Moderate		Higher	
Water Quality Support (SR, PR, or NR)	Phosphorus Retention (PR)	Moderate		Moderate	
Fish Habitat (FA or FR)	Anadromous Fish Habitat (FA)	Moderate		Higher	
Aquatic Habitat (AM, WBF, or WBN)	Waterbird Nesting Habitat (WBN)	Higher		Moderate	
Ecosystem Support (WC, INV, PD, POL, SBM, or OE)	Native Plant Diversity (PD)	Moderate		Moderate	MH

NOTE: A score of 0 does not always mean the function or value is absent from the wetland. It usually means that this wetland has equal or less capacity than the lowest-scoring one, for that function or value, from among the 200 calibration wetlands that were assessed previously by Oregon Department of State Lands.

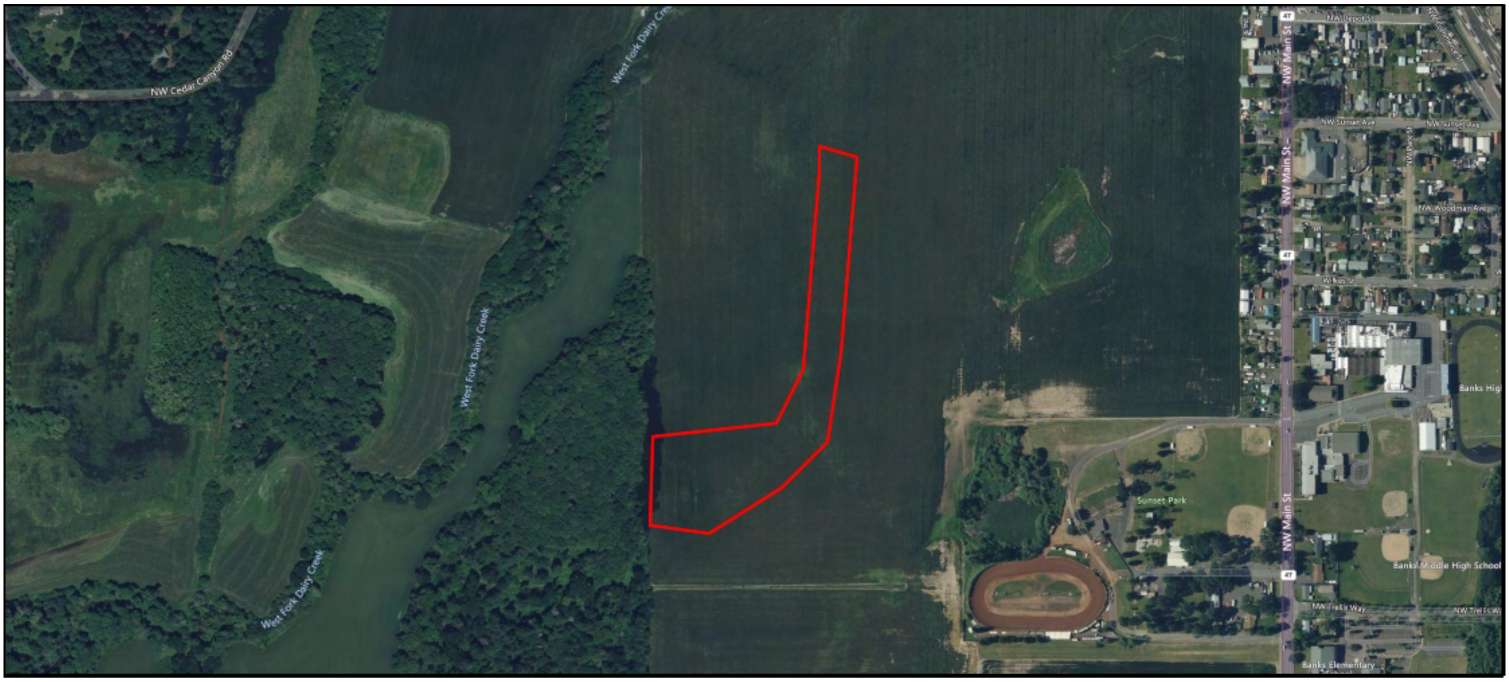
OREGON EXPLORER

Oregon Rapid Wetland Assessment Protocol (ORWAP) Report

Report Generated: June 8, 2021 07:17 AM

Assessment Area: 9.1 Acres

Location Map



Location Information

Latitude	45.613772172104	Longitude	-123.123786233921
Elevation	190 ft	Annual precipitation	43 in
Watershed (HUC12)		Middle West Fork Dairy Creek (170900100302)	
Presettlement Vegetation Class		Oak-Douglas fir	
Rare Wetland Type(s)		None	
Hydrologic Landscape Class		Wet	
In Special Protected Area?		No	

View Salinity Maps (pdf)

Soil Information

Soil Name	Wapato silty clay loam
Soil Symbol	43
Hydric Rating	Yes
Hydric Percent	92
Percent Area	100%
Erosion Hazard	Slight

This report was generated using the ORWAP Map Viewer, a tool of the Oregon Explorer (http://oregonexplorer.info).

Dom. Cond. Non-irrigated Capability Class	Class 3 soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Watershed Information

HUC Best

HUC Code	HUC Name	Is HUC Best?	Greatest Criteria met	FW, s/f, lg (Acres)	FW, em, lg (Acres)	EST, em, lg (Acres)	EST, s/f, lg (Acres)
HUC8: 17090010	Tualatin	No	n/a	179.6	115.8	0	0
HUC10: 1709001003	Scoggins Creek	No	n/a	50.2	30.8	0	0
HUC12: 170900100302	Middle West Fork Dairy Creek	No	n/a	9.9	30.2	0	0

[abbreviations: FW- freshwater (wetland); em- Emergent; lg- largest; s/f- Shrub/Forested; EST- Estuarine (wetland)

HUC 12 Functional Deficit

HUC Code	HUC Name	WS	SR	NT	WC	INV	AM	FH	WB
HUC12: 170900100302	Middle West Fork Dairy Creek								

[abbreviations: WS= Water Storage, SR= Sediment Retention, NT= Nutrient Retention (PR or NR), WC= Water Cooling (Thermoregulation), INV= Invertebrate Habitat, AM= Amphibian Habitat, FH= Fish Habitat (FA or FR), WB= Waterbird Habitat (WBF or WBN)]

Rare Species Scores

Rare Species Type	Maximum score	Sum Score	Rating
Non-anadromous Fish Species	0	0	None
Amphibian & Reptile Species	0	0	None
Feeding Waterbirds	0	0	None
Nesting Waterbirds	0	0	None
Songbirds, Raptors, and Mammals	0	0	None
Invertebrate Species	0	0	None
Plant Species	0	0	None

Scores have taken into account several factors for each rare species record contained in the official database of the Oregon Biodiversity Information Center (ORBIC): (a) the regional rarity of the species, (b) their proximity to the point of interest, and (c) the "certainty" that ORBIC assigns to each of those records.

Element of Occurrence (Rare Species)

View wildlife list for Middle West Fork Dairy Creek (170900100302)

Within Assessment Area	No EO Records
Within 1 mile	No EO Records
In HUC12 watershed	5 EO Records

Element of Occurrence Record(s) in HUC12

1 Steelhead (Upper Willamette River ESU, winter run) [5 occurences]

Oncorhynchus mykiss pop. 33

ORBIC State Status: S2

ORBIC Global Status: G5T2Q

ODFW Strategy Species: No

DCMB- Riverine Wetlands (E, G, H, I) RCA

Legend

States & Provinces

- Other States and Provinces
- Oregon

1: 26,001

0.8 | 0 | 0.41 | 0.8 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere

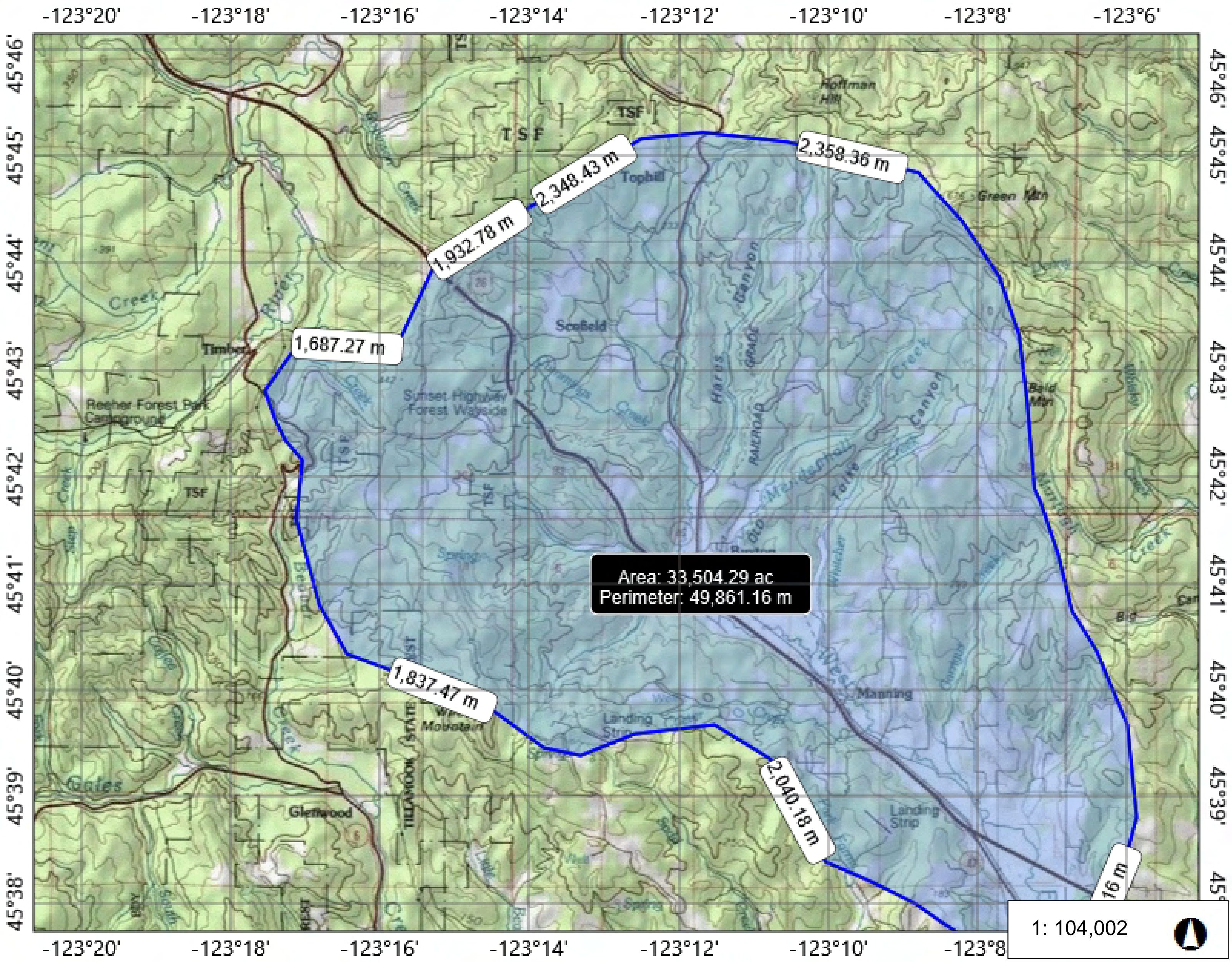
This map is a user generated static output for reference only from:
ORWAP and SFAM Map Viewer
Data layers that appear on this map may or may not be accurate, current, or reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Notes

Add your notes here

DCMB- Riverine Wetlands (E, G, H, I) SCA

OREGON EXPLORER



1: 104,002

Legend

States & Provinces

- Other States and Provinces
- Oregon

Notes

Add your notes here

3.3 0 1.64 3.3 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere

Oregon Rapid Wetland Assessment (ORWAP) V.3.2.*	Cover Page: Basic Description of Assessment
Site Name:	Dairy Creek Mitigation Bank- Wetland E, G, H, I (Riverine) Predicted Conditions
Investigator Name:	**C. Jonas Moiel**
Date of Field Assessment:	Predicted Conditions 5-10 Years after Construction
County:	Washington
Nearest Town:	Banks
Latitude (decimal degrees):	45.615196
Longitude (decimal degrees):	-123.1212
TRS, quarter/quarter section and tax lot(s):	Township 2 North, Range 4 West, Section 36, utilizing a portion of tax lot 800 (144.40 ac), and the entirety of tax lot 603 (1.76 ac)
Approximate size of the Assessment Area (AA, in acres):	2.6 acres
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	100%
If delineated, DSL file number (WD #) if known:	WD#2019-0378; updated 2021
Cowardin Systems & Classes (indicate all present, based on field visit and/or aerial imagery): Systems: Palustrine =P, Riverine =R, Lacustrine =L, Estuarine =E Classes: Emergent =EM, Scrub-Shrub =SS, Forested =FO, Aquatic Bed (incl. SAV) =AB, Open Water =OW, Unconsolidated Bottom =UB, Unconsolidated Shore =US	PEM currently. Future design includes PFO.
Predominant HGM Class: Estuarine=E, Lacustrine=L, Riverine=R, S= Slope, F= Flats, D= Depressional	Riverine
Soil Unit Mapped in Most of the AA:	Wapato silty clay loam
If tidal, the tidal phase during most of visit:	NA
What percent (approximate) of the **wetland** were you able to visit?	100
What percent (approximate) of the **AA** were you able to visit?	100
Have you attended an ORWAP training session? If so, indicate approximate month & year.	Yes. Sept. 2016
How many wetlands have you assessed previously using ORWAP (approximate)?	20
Comments about the site or this ORWAP assessment (attach extra page if desired):	This ORWAP assessment is for a wetland mitigation bank. The AA is for predicted conditions of Wetland E, G, H, I.

ORWAP V.3.2 Site Name:	**Dairy Creek Mitigation Bank- Wetland E, G, H, I (Riverine) Predicted Conditions**
Investigator Name:	**C. Jonas Moiel**
Date of Field Assessment:	**Predicted Conditions 5-10 Years after Construction**

Scores will appear below after data are entered in worksheets OF, F, T, and S. See Manual for definitions and descriptions of how scores were computed and ratings assigned.

Normalized Scores & Ratings for this Assessment Area (AA):

Specific Functions or Values:	**Function** Score	Function Rating	Rating Break Proximity	**Values** Score	Values Rating	Rating Break Proximity
Water Storage & Delay (WS)	6.78	Moderate		8.33	Higher	
Sediment Retention & Stabilization (SR)	4.71	Moderate		3.91	Moderate	LM
Phosphorus Retention (PR)	4.93	Moderate		3.93	Moderate	
Nitrate Removal & Retention (NR)	4.67	Moderate		3.22	Lower	LM
Anadromous Fish Habitat (FA)	6.82	Moderate		10.00	Higher	
Resident Fish Habitat (FR)	0.00	Lower		0.00	Lower	
Amphibian & Reptile Habitat (AM)	6.44	Moderate	MH	3.95	Lower	
Waterbird Nesting Habitat (WBN)	6.77	Moderate	MH	1.72	Moderate	LM
Waterbird Feeding Habitat (WBF)	4.12	Moderate		2.08	Lower	LM
Aquatic Invertebrate Habitat (INV)	7.18	Higher	MH	2.22	Lower	
Songbird, Raptor, Mammal Habitat (SBM)	3.32	Lower	LM	5.00	Moderate	
Water Cooling (WC)	2.96	Moderate	LM	0.00	Lower	
Native Plant Diversity (PD)	8.07	Higher		10.00	Higher	
Pollinator Habitat (POL)	8.44	Higher		6.70	Higher	
Organic Nutrient Export (OE)	5.42	Moderate				
Carbon Sequestration (CS)	4.71	Moderate				
Public Use & Recognition (PU)				4.47	Moderate	LM

Other Attributes:	Score	Rating	Rating Break Proximity
Wetland Sensitivity (SEN)	7.33	Higher	
Wetland Ecological Condition (EC)	4.22	Moderate	
Wetland Stressors (STR)	6.34	Higher	MH

GROUPS	Selected Function	Function Rating	Rating Break Proximity	Values Rating	Rating Break Proximity
Hydrologic Function (WS)	Water Storage & Delay (WS)	Moderate		Higher	
Water Quality Support (SR, PR, or NR)	Sediment Retention & Stabilization (SR)	Moderate		Moderate	LM
Fish Habitat (FA or FR)	Anadromous Fish Habitat (FA)	Moderate		Higher	
Aquatic Habitat (AM, WBF, or WBN)	Waterbird Nesting Habitat (WBN)	Moderate	MH	Moderate	LM
Ecosystem Support (WC, INV, PD, POL, SBM, or OE)	Native Plant Diversity (PD)	Higher		Higher	

NOTE: A score of 0 does not always mean the function or value is absent from the wetland. It usually means that this wetland has equal or less capacity than the lowest-scoring one, for that function or value, from among the 200 calibration wetlands that were assessed previously by Oregon Department of State Lands.

Oregon Rapid Wetland Assessment (ORWAP) V.3.2.*	Cover Page: Basic Description of Assessment
Site Name:	Dairy Creek Mitigation Bank- Wetlands A, B, D (Slope/Flats) Baseline Conditions
Investigator Name:	C. Jonas Moiel
Date of Field Assessment:	Various dates in 2020 (including 7/22)
County:	Washington
Nearest Town:	Banks
Latitude (decimal degrees):	45.615196
Longitude (decimal degrees):	-123.1212
TRS, quarter/quarter section and tax lot(s):	Township 2 North, Range 4 West, Section 36, utilizing a portion of tax lot 800 (144.40 ac), and the entirety of tax lot 603 (1.76 ac)
Approximate size of the Assessment Area (AA, in acres):	4.2 acres
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	100%
If delineated, DSL file number (WD #) if known:	WD#2019-0378; updated 2021
Cowardin Systems & Classes (indicate all present, based on field visit and/or aerial imagery): Systems: Palustrine =P, Riverine =R, Lacustrine =L, Estuarine =E Classes: Emergent =EM, Scrub-Shrub =SS, Forested =FO, Aquatic Bed (incl. SAV) =AB, Open Water =OW, Unconsolidated Bottom =UB, Unconsolidated Shore =US	PEM currently. Future design includes PEM, PSS, PFO.
Predominant HGM Class: Estuarine=E, Lacustrine=L, Riverine=R, S= Slope, F= Flats, D= Depressional	50% Slope, 50% Flats
Soil Unit Mapped in Most of the AA:	McBee silt loam
If tidal, the tidal phase during most of visit:	NA
What percent (approximate) of the **wetland** were you able to visit?	100
What percent (approximate) of the **AA** were you able to visit?	100
Have you attended an ORWAP training session? If so, indicate approximate month & year.	Yes. Sept. 2016
How many wetlands have you assessed previously using ORWAP (approximate)?	20
Comments about the site or this ORWAP assessment (attach extra page if desired):	This ORWAP assessment is for a wetland mitigation bank. The AA is for baseline Wetlands A,B, D. .

OREGON EXPLORER

Oregon Rapid Wetland Assessment Protocol (ORWAP) Report

Report Generated: March 9, 2021 09:53 AM

Assessment Area: 9.6 Acres

Location Map

Location Information

Latitude	45.6173945076643	Longitude	-123.117563579049
Elevation	196 ft	Annual precipitation	43 in
Watershed (HUC12)		Middle West Fork Dairy Creek (170900100302)	
Presettlement Vegetation Class		Oak-Douglas fir	
Rare Wetland Type(s)		None	
Hydrologic Landscape Class		Wet	
In Special Protected Area?		No	

[View Salinity Maps (pdf)](#)

Soil Information

Soil Name	McBee silty clay loam
Soil Symbol	30
Hydric Rating	No
Hydric Percent	9
Percent Area	77.7%
Erosion Hazard	Slight

Dom. Cond. Non-irrigated Capability Class	Class 3 soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Soil Name	Woodburn silt loam, 3 to 7 percent slopes
Soil Symbol	45B
Hydric Rating	No
Hydric Percent	1
Percent Area	22.3%
Erosion Hazard	Moderate
Dom. Cond. Non-irrigated Capability Class	Class 2 soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Watershed Information

HUC Best

HUC Code	HUC Name	Is HUC Best?	Greatest Criteria met	FW, s/f, lg (Acres)	FW, em, lg (Acres)	EST, em, lg (Acres)	EST, s/f, lg (Acres)
HUC8: 17090010	Tualatin	No	n/a	179.6	115.8	0	0
HUC10: 1709001003	Scoggins Creek	No	n/a	50.2	30.8	0	0
HUC12: 170900100302	Middle West Fork Dairy Creek	No	n/a	9.9	30.2	0	0

[abbreviations: FW- freshwater (wetland); em- Emergent; lg- largest; s/f- Shrub/Forested; EST- Estuarine (wetland)

HUC 12 Functional Deficit

HUC Code	HUC Name	WS	SR	NT	WC	INV	AM	FH	WB
HUC12: 170900100302	Middle West Fork Dairy Creek								

[abbreviations: WS= Water Storage, SR= Sediment Retention, NT= Nutrient Retention (PR or NR), WC= Water Cooling (Thermoregulation), INV= Invertebrate Habitat, AM= Amphibian Habitat, FH= Fish Habitat (FA or FR), WB= Waterbird Habitat (WBF or WBN)]

Rare Species Scores

Rare Species Type	Maximum score	Sum Score	Rating
Non-anadromous Fish Species	0	0	None
Amphibian & Reptile Species	0	0	None
Feeding Waterbirds	0	0	None
Nesting Waterbirds	0	0	None
Songbirds, Raptors, and Mammals	0	0	None
Invertebrate Species	0	0	None
Plant Species	0	0	None

Scores have taken into account several factors for each rare species record contained in the official database of the Oregon Biodiversity Information Center (ORBIC): (a) the regional rarity of the species, (b) their proximity to the point of interest, and (c) the “certainty” that ORBIC assigns to each of those records.

Element of Occurrence (Rare Species)

View wildlife list for Middle West Fork Dairy Creek (170900100302)

Within Assessment Area	No EO Records
Within 1 mile	No EO Records
In HUC12 watershed	5 EO Records

Element of Occurrence Record(s) in HUC12

1 Steelhead (Upper Willamette River ESU, winter run) [5 occurences]

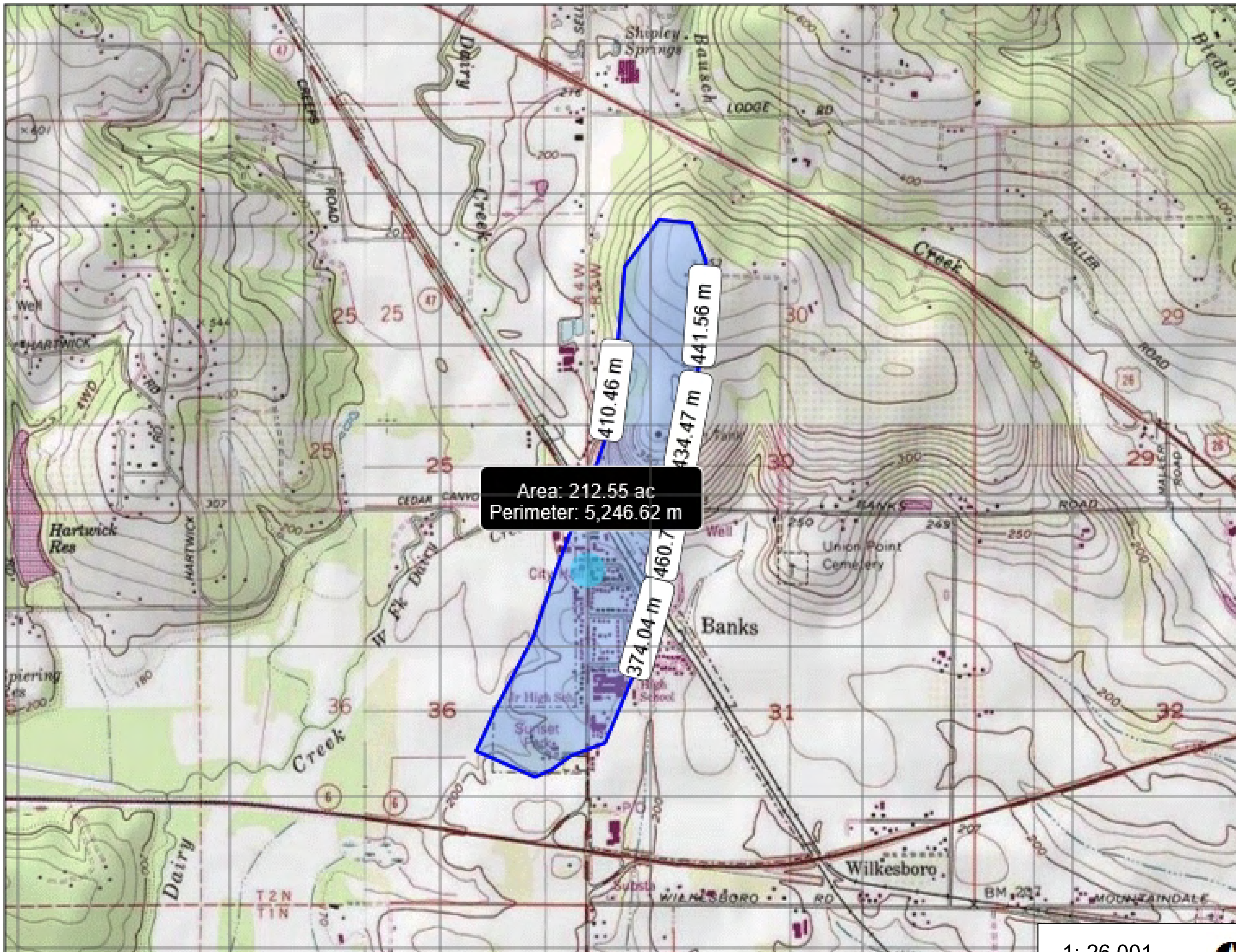
Oncorhynchus mykiss pop. 33

ORBIC State Status: S2

ORBIC Global Status: G5T2Q

ODFW Strategy Species: No

DCMB- Slope/Flats Wetlands (A, B, D) RCA



1: 26,001

Legend

States & Provinces

- Other States and Provinces
- Oregon

Notes

Add your notes here

0.8 0 0.41 0.8 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output for reference only from: ORWAP and SFAM Map Viewer
Data layers that appear on this map may or may not be accurate, current, or reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION.

ORWAP V.3.2 Site Name:	Dairy Creek Mitigation Bank- Wetlands A, B, D (Slope/Flats) Baseline Conditions
Investigator Name:	C. Jonas Moiel
Date of Field Assessment:	Various dates in 2020 (including 7/22)

Scores will appear below after data are entered in worksheets OF, F, T, and S. See Manual for definitions and descriptions of how scores were computed and ratings assigned.

Normalized Scores & Ratings for this Assessment Area (AA):

Specific Functions or Values:	Function Score	Function Rating	Rating Break Proximity	Values Score	Values Rating	Rating Break Proximity
Water Storage & Delay (WS)	5.97	Moderate		8.33	Higher	
Sediment Retention & Stabilization (SR)	4.18	Moderate	LM	4.81	Moderate	
Phosphorus Retention (PR)	3.69	Moderate		3.76	Moderate	
Nitrate Removal & Retention (NR)	3.84	Lower	LM	3.08	Lower	LM
Anadromous Fish Habitat (FA)	0.00	Lower		0.00	Lower	
Resident Fish Habitat (FR)	0.00	Lower		0.00	Lower	
Amphibian & Reptile Habitat (AM)	6.09	Moderate		4.50	Moderate	LM
Waterbird Nesting Habitat (WBN)	8.58	Higher		5.19	Moderate	
Waterbird Feeding Habitat (WBF)	4.04	Moderate		6.67	Moderate	MH
Aquatic Invertebrate Habitat (INV)	2.71	Lower		2.86	Lower	LM
Songbird, Raptor, Mammal Habitat (SBM)	1.96	Lower		5.67	Moderate	
Water Cooling (WC)	9.84	Higher		0.00	Lower	
Native Plant Diversity (PD)	0.00	Lower		0.00	Lower	
Pollinator Habitat (POL)	5.32	Moderate		6.29	Higher	
Organic Nutrient Export (OE)	6.03	Moderate				
Carbon Sequestration (CS)	1.62	Lower				
Public Use & Recognition (PU)				3.34	Lower	

Other Attributes:	Score	Rating	Rating Break Proximity
Wetland Sensitivity (SEN)	0.95	Lower	
Wetland Ecological Condition (EC)	0.02	Lower	
Wetland Stressors (STR)	6.79	Higher	

GROUPS	Selected Function	Function Rating	Rating Break Proximity	Values Rating	Rating Break Proximity
Hydrologic Function (WS)	Water Storage & Delay (WS)	Moderate		Higher	
Water Quality Support (SR, PR, or NR)	Sediment Retention & Stabilization (SR)	Moderate	LM	Moderate	
Fish Habitat (FA or FR)	Anadromous Fish Habitat (FA)	Lower		Lower	
Aquatic Habitat (AM, WBF, or WBN)	Waterbird Nesting Habitat (WBN)	Higher		Moderate	
Ecosystem Support (WC, INV, PD, POL, SBM, or OE)	Water Cooling (WC)	Higher		Lower	

NOTE: A score of 0 does not always mean the function or value is absent from the wetland. It usually means that this wetland has equal or less capacity than the lowest-scoring one, for that function or value, from among the 200 calibration wetlands that were assessed previously by Oregon Department of State Lands.

Oregon Rapid Wetland Assessment (ORWAP) V.3.2.*	Cover Page: Basic Description of Assessment
Site Name:	Dairy Creek Mitigation Bank- Wetlands A, B, D (Slope/Flats) Predicted Conditions
Investigator Name:	**C. Jonas Moiel**
Date of Field Assessment:	Various dates in 2020 (including 7/22)
County:	Washington
Nearest Town:	Banks
Latitude (decimal degrees):	45.615196
Longitude (decimal degrees):	-123.1212
TRS, quarter/quarter section and tax lot(s):	Township 2 North, Range 4 West, Section 36, utilizing a portion of tax lot 800 (144.40 ac), and the entirety of tax lot 603 (1.76 ac)
Approximate size of the Assessment Area (AA, in acres):	4.2 acres
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	100%
If delineated, DSL file number (WD #) if known:	WD#2019-0378; updated 2021
Cowardin Systems & Classes (indicate all present, based on field visit and/or aerial imagery): Systems: Palustrine =P, Riverine =R, Lacustrine =L, Estuarine =E Classes: Emergent =EM, Scrub-Shrub =SS, Forested =FO, Aquatic Bed (incl. SAV) =AB, Open Water =OW, Unconsolidated Bottom =UB, Unconsolidated Shore =US	PEM currently. Future design includes PEM, PSS, PFO.
Predominant HGM Class: Estuarine=E, Lacustrine=L, Riverine=R, S= Slope, F= Flats, D= Depressional	50% Slope, 50% Flats
Soil Unit Mapped in Most of the AA:	McBee silt loam
If tidal, the tidal phase during most of visit:	NA
What percent (approximate) of the **wetland** were you able to visit?	100
What percent (approximate) of the **AA** were you able to visit?	100
Have you attended an ORWAP training session? If so, indicate approximate month & year.	Yes. Sept. 2016
How many wetlands have you assessed previously using ORWAP (approximate)?	20
Comments about the site or this ORWAP assessment (attach extra page if desired):	This ORWAP assessment is for a wetland mitigation bank. The AA is for predicted conditions of Wetlands A, B, D.

ORWAP V.3.2 Site Name:	Dairy Creek Mitigation Bank- Wetlands A, B, D (Slope/Flats) Predicted Conditions
Investigator Name:	C. Jonas Moiel
Date of Field Assessment:	Various dates in 2020 (including 7/22)

Scores will appear below after data are entered in worksheets OF, F, T, and S. See Manual for definitions and descriptions of how scores were computed and ratings assigned.

Normalized Scores & Ratings for this Assessment Area (AA):

Specific Functions or Values:	Function Score	Function Rating	Rating Break Proximity	Values Score	Values Rating	Rating Break Proximity
Water Storage & Delay (WS)	6.26	Moderate		8.33	Higher	
Sediment Retention & Stabilization (SR)	4.67	Moderate		4.81	Moderate	
Phosphorus Retention (PR)	3.30	Moderate	LM	3.76	Moderate	
Nitrate Removal & Retention (NR)	4.49	Moderate	LM	3.08	Lower	LM
Anadromous Fish Habitat (FA)	0.00	Lower		0.00	Lower	
Resident Fish Habitat (FR)	0.00	Lower		0.00	Lower	
Amphibian & Reptile Habitat (AM)	6.23	Moderate		4.54	Moderate	LM
Waterbird Nesting Habitat (WBN)	7.82	Higher		5.19	Moderate	
Waterbird Feeding Habitat (WBF)	4.35	Moderate		6.67	Moderate	MH
Aquatic Invertebrate Habitat (INV)	4.50	Moderate	LM	3.64	Moderate	
Songbird, Raptor, Mammal Habitat (SBM)	3.26	Lower	LM	6.33	Moderate	
Water Cooling (WC)	10.00	Higher		0.00	Lower	
Native Plant Diversity (PD)	7.25	Higher	MH	6.67	Moderate	MH
Pollinator Habitat (POL)	7.71	Higher	MH	6.80	Higher	
Organic Nutrient Export (OE)	6.07	Moderate				
Carbon Sequestration (CS)	5.86	Moderate	MH			
Public Use & Recognition (PU)				5.28	Moderate	

Other Attributes:	Score	Rating	Rating Break Proximity
Wetland Sensitivity (SEN)	2.77	Moderate	
Wetland Ecological Condition (EC)	4.27	Moderate	
Wetland Stressors (STR)	6.79	Higher	

GROUPS	Selected Function	Function Rating	Rating Break Proximity	Values Rating	Rating Break Proximity
Hydrologic Function (WS)	Water Storage & Delay (WS)	Moderate		Higher	
Water Quality Support (SR, PR, or NR)	Sediment Retention & Stabilization (SR)	Moderate		Moderate	
Fish Habitat (FA or FR)	Anadromous Fish Habitat (FA)	Lower		Lower	
Aquatic Habitat (AM, WBF, or WBN)	Waterbird Nesting Habitat (WBN)	Higher		Moderate	
Ecosystem Support (WC, INV, PD, POL, SBM, or OE)	Pollinator Habitat (POL)	Higher	MH	Higher	

NOTE: A score of 0 does not always mean the function or value is absent from the wetland. It usually means that this wetland has equal or less capacity than the lowest-scoring one, for that function or value, from among the 200 calibration wetlands that were assessed previously by Oregon Department of State Lands.

Oregon Rapid Wetland Assessment (ORWAP) V.3.2.*	Cover Page: Basic Description of Assessment
Site Name:	Dairy Creek Mitigation Bank- Baseline Conditions all Wetlands; entire project area within predicted wetland boundary
Investigator Name:	**C. Jonas Moiel**
Date of Field Assessment:	Various dates in 2020 (including 7/22)
County:	Washington
Nearest Town:	Banks
Latitude (decimal degrees):	45.615196
Longitude (decimal degrees):	-123.1212
TRS, quarter/quarter section and tax lot(s):	Township 2 North, Range 4 West, Section 36, utilizing a portion of tax lot 800 (144.40 ac), and the entirety of tax lot 603 (1.76 ac)
Approximate size of the Assessment Area (AA, in acres):	100 acres (predicted wetland boundary)
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	AA baseline conditions have ~9 acres of wetland; The AA will have acreaged increased to ~100acres after construction. AA is 100% of predicted wetland
If delineated, DSL file number (WD #) if known:	WD#2019-0378; updated 2021
Cowardin Systems & Classes (indicate all present, based on field visit and/or aerial imagery): Systems: Palustrine =P, Riverine =R, Lacustrine =L, Estuarine =E Classes: Emergent =EM, Scrub-Shrub =SS, Forested =FO, Aquatic Bed (incl. SAV) =AB, Open Water =OW, Unconsolidated Bottom =UB, Unconsolidated Shore =US	PEM currently. Future design includes PEM, PSS, PFO.
Predominant HGM Class: Estuarine=E, Lacustrine=L, Riverine=R, S= Slope, F= Flats, D= Depressional	Approximately 60% Riverine and 40% Slope/Flats
Soil Unit Mapped in Most of the AA:	Wapato silty clay loam
If tidal, the tidal phase during most of visit:	NA
What percent (approximate) of the **wetland** were you able to visit?	100
What percent (approximate) of the **AA** were you able to visit?	100
Have you attended an ORWAP training session? If so, indicate approximate month & year.	Yes. Sept. 2016
How many wetlands have you assessed previously using ORWAP (approximate)?	20
Comments about the site or this ORWAP assessment (attach extra page if desired):	This ORWAP assessment is for a wetland mitigation bank. The AA was defined by the predicted future wetland acreage.

ORWAP V.3.2 Site Name:	**Dairy Creek Mitigation Bank- Baseline Conditions all Wetlands; entire project area within predicted wetland boundary**
Investigator Name:	**C. Jonas Moiel**
Date of Field Assessment:	**Various dates in 2020 (including 7/22)**

Scores will appear below after data are entered in worksheets OF, F, T, and S. See Manual for definitions and descriptions of how scores were computed and ratings assigned.

	Normalized Scores & Ratings for this Assessment Area (AA):					
Specific Functions or Values:	**Function** Score	Function Rating	Rating Break Proximity	**Values** Score	Values Rating	Rating Break Proximity
Water Storage & Delay (WS)	6.09	Moderate		8.33	Higher	
Sediment Retention & Stabilization (SR)	5.23	Moderate		5.98	Moderate	MH
Phosphorus Retention (PR)	4.00	Moderate		4.81	Moderate	
Nitrate Removal & Retention (NR)	5.35	Moderate		3.96	Moderate	LM
Anadromous Fish Habitat (FA)	6.56	Moderate		10.00	Higher	
Resident Fish Habitat (FR)	4.50	Moderate		3.37	Moderate	
Amphibian & Reptile Habitat (AM)	5.51	Moderate		2.80	Lower	
Waterbird Nesting Habitat (WBN)	7.61	Higher		3.53	Moderate	
Waterbird Feeding Habitat (WBF)	3.85	Moderate		4.17	Moderate	
Aquatic Invertebrate Habitat (INV)	4.99	Moderate		2.37	Lower	
Songbird, Raptor, Mammal Habitat (SBM)	3.70	Lower	LM	5.00	Moderate	
Water Cooling (WC)	10.00	Higher		0.00	Lower	
Native Plant Diversity (PD)	5.78	Moderate	MH	10.00	Higher	
Pollinator Habitat (POL)	6.44	Moderate		4.23	Moderate	
Organic Nutrient Export (OE)	6.83	Higher	MH			
Carbon Sequestration (CS)	3.85	Moderate	LM			
Public Use & Recognition (PU)				3.54	Lower	LM

Other Attributes:	Score	Rating	Rating Break Proximity
Wetland Sensitivity (SEN)	5.78	Higher	
Wetland Ecological Condition (EC)	3.30	Moderate	LM
Wetland Stressors (STR)	6.79	Higher	

GROUPS	Selected Function	Function Rating	Rating Break Proximity	Values Rating	Rating Break Proximity
Hydrologic Function (WS)	Water Storage & Delay (WS)	Moderate		Higher	
Water Quality Support (SR, PR, or NR)	Sediment Retention & Stabilization (SR)	Moderate		Moderate	MH
Fish Habitat (FA or FR)	Anadromous Fish Habitat (FA)	Moderate		Higher	
Aquatic Habitat (AM, WBF, or WBN)	Waterbird Nesting Habitat (WBN)	Higher		Moderate	
Ecosystem Support (WC, INV, PD, POL, SBM, or OE)	Organic Nutrient Export (OE)	Higher	MH	0.00	0.00

NOTE: A score of 0 does not always mean the function or value is absent from the wetland. It usually means that this wetland has equal or less capacity than the lowest-scoring one, for that function or value, from among the 200 calibration wetlands that were assessed previously by Oregon Department of State Lands.

Oregon Explorer

Oregon Rapid Wetland Assessment Protocol (ORWAP) Report

Report Generated: July 21, 2020 04:22 PM — Assessment Area: 100.4 Acres

Location Map

Location Information

Latitude	45.6151965822752	Longitude	-123.12124691326
Elevation	190 ft	Annual precipitation	43 in
Watershed (HUC12)		Middle West Fork Dairy Creek (170900100302)	
Presettlement Vegetation Class		Oak-Douglas fir	
Rare Wetland Type(s)		None	
Hydrologic Landscape Class		Wet	
In Special Protected Area?		No	

[View Salinity Maps (pdf)](#)

Soil Information

Soil Name	Wapato silty clay loam
Soil Symbol	43
Hydric Rating	Yes
Hydric Percent	92
Percent Area	73.8%
Erosion Hazard	Slight

This report was generated using the ORWAP Map Viewer, a tool of the Oregon Explorer (http://oregonexplorer.info).

Dom. Cond. Non-irrigated Capability Class	Class 3 soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Soil Name	McBee silty clay loam
Soil Symbol	30
Hydric Rating	No
Hydric Percent	9
Percent Area	19.3%
Erosion Hazard	Slight
Dom. Cond. Non-irrigated Capability Class	Class 3 soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Soil Name	Woodburn silt loam, 3 to 7 percent slopes
Soil Symbol	45B
Hydric Rating	No
Hydric Percent	1
Percent Area	4.7%
Erosion Hazard	Moderate
Dom. Cond. Non-irrigated Capability Class	Class 2 soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Soil Name	Woodburn silt loam, 0 to 3 percent slopes
Soil Symbol	45A
Hydric Rating	No
Hydric Percent	1
Percent Area	1.7%
Erosion Hazard	Slight
Dom. Cond. Non-irrigated Capability Class	Class 2 soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Soil Name	Aloha silt loam
Soil Symbol	1
Hydric Rating	No

Hydric Percent	1
Percent Area	0.5%
Erosion Hazard	Slight
Dom. Cond. Non-irrigated Capability Class	Class 2 soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Watershed Information

HUC Best

HUC Code	HUC Name	Is HUC Best?	Greatest Criteria met	FW, s/f, lg (Acres)	FW, em, lg (Acres)	EST, em, lg (Acres)	EST, s/f, lg (Acres)
HUC8: 17090010	Tualatin	No	n/a	179.6	115.8	0	0
HUC10: 1709001003	Scoggins Creek	No	n/a	50.2	30.8	0	0
HUC12: 170900100302	Middle West Fork Dairy Creek	No	n/a	9.9	30.2	0	0

[abbreviations: FW- freshwater (wetland); em- Emergent; lg- largest; s/f- Shrub/Forested; EST- Estuarine (wetland)

HUC 12 Functional Deficit

HUC Code	HUC Name	WS	SR	NT	WC	INV	AM	FH	WB
HUC12: 170900100302	Middle West Fork Dairy Creek								

[abbreviations: WS= Water Storage, SR= Sediment Retention, NT= Nutrient Retention (PR or NR), WC= Water Cooling (Thermoregulation), INV= Invertebrate Habitat, AM= Amphibian Habitat, FH= Fish Habitat (FA or FR), WB= Waterbird Habitat (WBF or WBN)]

Rare Species Scores

Rare Species Type	Maximum score	Sum Score	Rating
Non-anadromous Fish Species	0	0	None
Amphibian & Reptile Species	0	0	None
Feeding Waterbirds	0	0	None
Nesting Waterbirds	0	0	None
Songbirds, Raptors, and Mammals	0	0	None
Invertebrate Species	0	0	None
Plant Species	0	0	None

Scores have taken into account several factors for each rare species record contained in the official database of the Oregon Biodiversity Information Center (ORBIC): (a) the regional rarity of the species, (b) their proximity to the point of interest, and (c) the “certainty” that ORBIC assigns to each of those records.

Element of Occurrence (Rare Species)

View wildlife list for Middle West Fork Dairy Creek (170900100302)

Within Assessment Area	No EO Records
Within 1 mile	No EO Records
In HUC12 watershed	5 EO Records

Element of Occurrence Record(s) in HUC12

1 Steelhead (Upper Willamette River ESU, winter run) [5 occurences]

Oncorhynchus mykiss pop. 33

ORBIC State Status: S2

ORBIC Global Status: G5T2Q

ODFW Strategy Species: No

Oregon Rapid Wetland Assessment (ORWAP) V.3.2.*	Cover Page: Basic Description of Assessment
Site Name:	Dairy Creek Mitigation Bank- Predicted Conditions 5-10 Years after construction; all Wetlands; entire project area within predicted wetland boundary
Investigator Name:	**C. Jonas Moiel**
Date of Field Assessment:	Future predicted condtion after construction 5-10 years
County:	Washington
Nearest Town:	Banks
Latitude (decimal degrees):	45.615196
Longitude (decimal degrees):	-123.1212
TRS, quarter/quarter section and tax lot(s):	Township 2 North, Range 4 West, Section 36, utilizing a portion of tax lot 800 (144.40 ac), and the entirety of tax lot 603 (1.76 ac)
Approximate size of the Assessment Area (AA, in acres):	100 acres
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	AA baseline conditions have ~9 acres of wetland; The AA will have acreaged increased to ~100acres after construction. AA is 100% of predicted wetland
If delineated, DSL file number (WD #) if known:	WD#2019-0378; updated 2021
Cowardin Systems & Classes (indicate all present, based on field visit and/or aerial imagery): Systems: Palustrine =P, Riverine =R, Lacustrine =L, Estuarine =E Classes: Emergent =EM, Scrub-Shrub =SS, Forested =FO, Aquatic Bed (incl. SAV) =AB, Open Water =OW, Unconsolidated Bottom =UB, Unconsolidated Shore =US	PEM currently. Future design includes PEM, PSS, PFO.
Predominant HGM Class: Estuarine=E, Lacustrine=L, Riverine=R, S= Slope, F= Flats, D= Depressional	Approximately 60% Riverine and 40% Slope/Flats
Soil Unit Mapped in Most of the AA:	Wapato silty clay loam
If tidal, the tidal phase during most of visit:	NA
What percent (approximate) of the **wetland** were you able to visit?	100
What percent (approximate) of the **AA** were you able to visit?	100
Have you attended an ORWAP training session? If so, indicate approximate month & year.	Yes. Sept. 2016
How many wetlands have you assessed previously using ORWAP (approximate)?	20
Comments about the site or this ORWAP assessment (attach extra page if desired):	This ORWAP assessment is for a wetland mitigation bank. The AA was defined by the predicted future wetland acreage.

ORWAP V.3.2 Site Name:	Dairy Creek Mitigation Bank- Predicted Conditions 5-10 Years after construction; all Wetlands; entire project area within predicted wetland boundary
Investigator Name:	C. Jonas Moiel
Date of Field Assessment:	Future predicted condtion after construction 5-10 years

Scores will appear below after data are entered in worksheets OF, F, T, and S. See Manual for definitions and descriptions of how scores were computed and ratings assigned.

Normalized Scores & Ratings for this Assessment Area (AA):

Specific Functions or Values:	Function Score	Function Rating	Rating Break Proximity	Values Score	Values Rating	Rating Break Proximity
Water Storage & Delay (WS)	5.08	Moderate		8.33	Higher	
Sediment Retention & Stabilization (SR)	5.29	Moderate		5.51	Moderate	MH
Phosphorus Retention (PR)	3.45	Moderate	LM	4.41	Moderate	
Nitrate Removal & Retention (NR)	6.14	Moderate		3.62	Lower	LM
Anadromous Fish Habitat (FA)	8.18	Higher	MH	10.00	Higher	
Resident Fish Habitat (FR)	5.94	Moderate	MH	4.53	Moderate	MH
Amphibian & Reptile Habitat (AM)	6.32	Moderate	MH	5.24	Moderate	
Waterbird Nesting Habitat (WBN)	7.89	Higher		3.53	Moderate	
Waterbird Feeding Habitat (WBF)	9.01	Higher		4.17	Moderate	
Aquatic Invertebrate Habitat (INV)	7.27	Higher		4.29	Moderate	
Songbird, Raptor, Mammal Habitat (SBM)	7.23	Higher		6.67	Moderate	MH
Water Cooling (WC)	9.12	Higher		8.88	Higher	
Native Plant Diversity (PD)	9.65	Higher		10.00	Higher	
Pollinator Habitat (POL)	9.86	Higher		6.19	Higher	
Organic Nutrient Export (OE)	6.52	Moderate	MH			
Carbon Sequestration (CS)	5.55	Moderate				
Public Use & Recognition (PU)				5.39	Moderate	

Other Attributes:	Score	Rating	Rating Break Proximity
Wetland Sensitivity (SEN)	7.62	Higher	
Wetland Ecological Condition (EC)	4.54	Moderate	
Wetland Stressors (STR)	4.53	Moderate	

GROUPS	Selected Function	Function Rating	Rating Break Proximity	Values Rating	Rating Break Proximity
Hydrologic Function (WS)	Water Storage & Delay (WS)	Moderate		Higher	
Water Quality Support (SR, PR, or NR)	Sediment Retention & Stabilization (SR)	Moderate		Moderate	MH
Fish Habitat (FA or FR)	Anadromous Fish Habitat (FA)	Higher	MH	Higher	
Aquatic Habitat (AM, WBF, or WBN)	Waterbird Nesting Habitat (WBN)	Higher		Moderate	
Ecosystem Support (WC, INV, PD, POL, SBM, or OE)	Water Cooling (WC)	Higher		Higher	

NOTE: A score of 0 does not always mean the function or value is absent from the wetland. It usually means that this wetland has equal or less capacity than the lowest-scoring one, for that function or value, from among the 200 calibration wetlands that were assessed previously by Oregon Department of State Lands.

Appendix I: SFAM Report, Data, and Assumptions

ODF stream layer showing small stream in DCMB.

Legend

States & Provinces
- Other States and Provinces
- Oregon

Stream Size (ODF)
- Large
- Medium
- Small
- Unknown

1: 13,000

0.4 | 0 | 0.21 | 0.4 Miles

Notes

Add your notes here

WGS_1984_Web_Mercator_Auxiliary_Sphere

STREAM FUNCTION ASSESSMENT METHOD for OREGON

Version 1.1 (April 2020)

Name of Project Area:	Dairy Creek Mitigation Bank	**Date of Field Assessment:**	9/24 and 9/25/20, and 3/18/21	**Latitude*:**	45.6206
Data Collector:	Moiel, A. Vlahakis, Crissman	**Elevation:** (SFAM Report)	190 ft	**Longitude*:**	-123.1213
					** near center of the project site*
Project Number:		**Project Area Length (feet):**	1050	**Project Area (acres):**	
Assessment timing:	Current conditions	**Photo Numbers:**			

What is the Oregon Stream Classification for the project area? Select from drop-down menu. Refer to the SFAM Report. If the project area spans more than one reach, describe the dominant stream classification.				Mountain Wet Rain/Valley Wet
What ratings does the Oregon Stream Classification identify for the following measures in the local hydrologic unit? Refer to the SFAM Report. If project area spans more than one reach, describe the dominant classification:				
Aquifer Permeability (local)	High	Soil Permeability (local)	High	
Erodibility (local)	Difficult to Erode	Gradient*	> 6%	*If EPA Classification is different from the gradient you observe in the local reach, select the gradient in the local reach.

Is the channel perennial, intermittent, or ephemeral? (Map Viewer-NHD Flowline)	Perennial	
Which Level III EPA Ecoregion is the site located in? (SFAM Report)	Willamette Valley	Western Mountains
Is the average width of the stream less than or greater than 50 feet? (User Input)	≤ 50 feet	Small
What is the 2 year peak flood (cfs)? (StreamStats Report)	1780	
What is the size of the drainage area (mi^2)? (StreamStats Report)	48	

External Data: List below the persons and/or agencies that provided location information on rare wildlife species, and/or rare plants, and the date the information was gathered (if known).

ORNHIC was contacted to provide ESA listed species occurance information for the project area; the ORNHIC report is attached.

Project Area History: Based on conversation with landowner/manager and other information, describe below the years and extent (% of project area) of past and present management actions (e.g., vegetation control), natural disturbances (e.g., fire, insect infestations), and human-associated disturbances (e.g., grazing regimes).

Information about the project area is included in the MBI.

Assessment Notes: Note any special features of the reach or landscape, problems with scoring, or other information that may be relevant.

The project area includes two portions of perennial channel separated by an intermittent side channel. The perennial channel meanders offsite to the north and then re-enters the western portion of the project area. The portion of the perennial channel that is located offsite was not evaluated due to access restrictions. The two segments of perrienial channel that were within the project area were evaluated. The EAA extended 500 feet downstream of the AA rather than 250 upstream and 250 downstream, due to access restrictions upstream. The Straight channel was considered a side channel so was not evaluated other then legth as required by SFAM. The proportion of side channel was estimated for the reach, including the perennial section which meanders to the north offsite; otherwise the proportion of side channel would be much higher than reality.

STREAM ASSESSMENT SCORES SHEET **Version 1.1** **Assessment Timing:** **Current conditions**

Project Area Name:	Dairy Creek Mitigation Bank		
Investigator Name:	Moiel, A. Vlahakis, Crissman		
Date of Field Assessment:	9/24 and 9/25/20, and 3/18/21		
Latitude (decimal degrees):	45.6206	Longitude (decimal degrees):	-123.1213

SPECIFIC FUNCTIONS	**Function Score**	**Function Rating**	**Value Score**	**Value Rating**
Surface Water Storage (SWS)	6.24	Moderate	6.33	Moderate
Sub/Surface Water Transfer (SST)	4.83	Moderate	0.00	Lower
Flow Variation (FV)	4.47	Moderate	6.67	Moderate
Sediment Continuity (SC)	3.30	Moderate	8.08	Higher
Sediment Mobility (SM)	2.85	Lower	5.00	Moderate
Maintain Biodiversity (MB)	4.02	Moderate	6.63	Moderate
Create and Maintain Habitat (CMH)	3.94	Moderate	8.03	Higher
Sustain Trophic Structure (STS)	4.17	Moderate	5.48	Moderate
Nutrient Cycling (NC)	4.30	Moderate	6.76	Moderate
Chemical Regulation (CR)	4.44	Moderate	2.76	Lower
Thermal Regulation (TR)	3.77	Moderate	3.07	Moderate

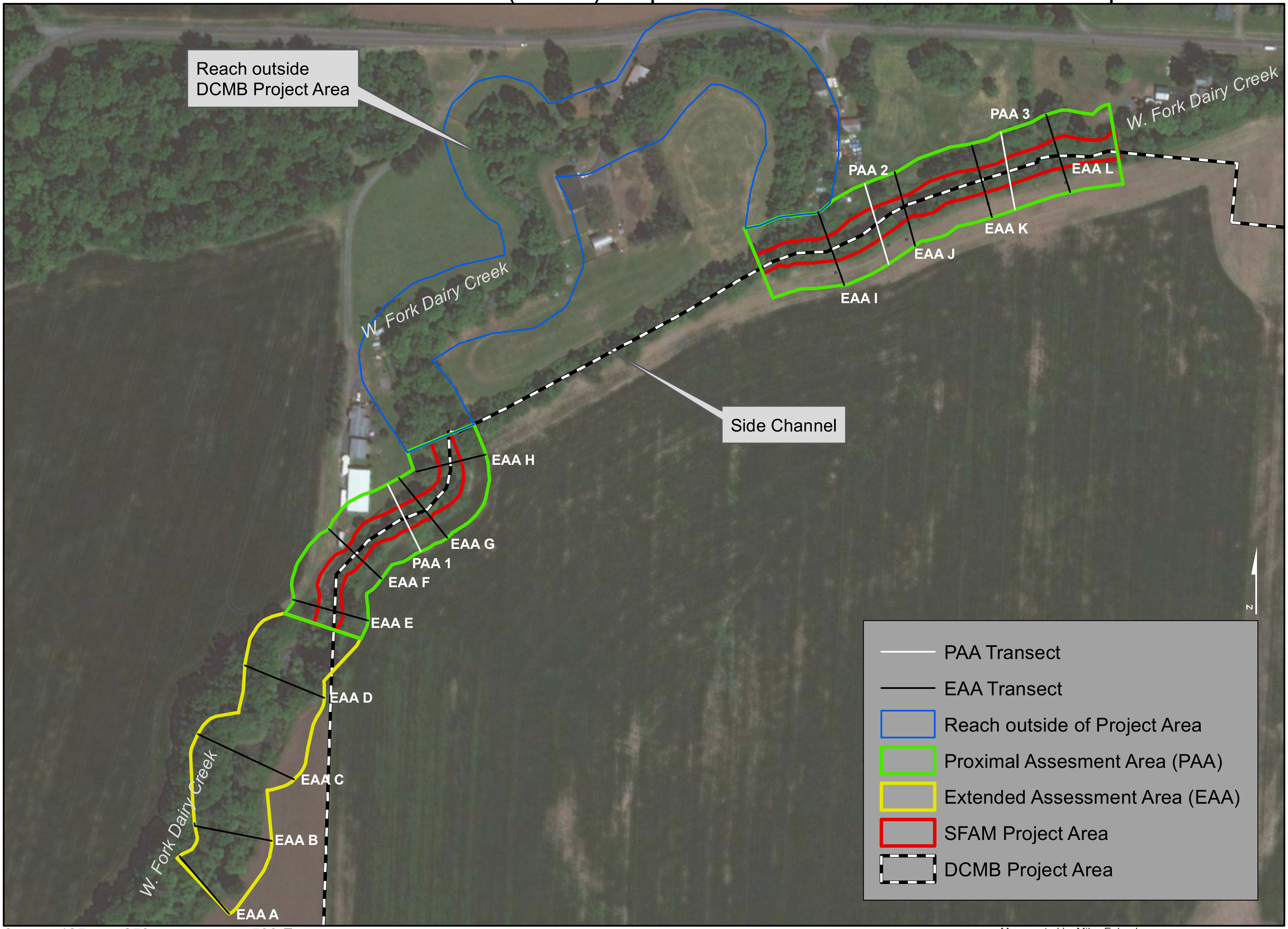
GROUPED FUNCTIONS	**REPRESENTATIVE FUNCTION**	**Function Group Rating**	**Value Group Rating**
Hydrologic Function (SWS, SST, FV)	Surface Water Storage (SWS)	Moderate	Moderate
Geomorphic Function (SC, SM)	Sediment Continuity (SC)	Moderate	Higher
Biologic Function (MB, CMH, STS)	Create and Maintain Habitat (CMH)	Moderate	Higher
Water Quality Function (NC, CR, TR)	Nutrient Cycling (NC)	Moderate	Moderate

Formulas for each specific function and value (shown on Subscores tab) produce a numerical score between 0.0 and 10.0. For ecological functions, a score of 0.0 indicates that negligible function is being provided by the stream whereas a score of 10.0 indicates that the stream is providing maximum function (as defined) given certain contextual factors. For values, a score of 0.0 indicates that there is low opportunity for the site to provide a specific ecological function and that, even if it did, the specific function would not be of particular significance given the context of the site. Conversely, a value score of 10.0 indicates that a site has the opportunity to provide a specific function and that it would be highly significant in that particular location. For all function and value formulas, both extents of the scoring range (0.0 and 10.0) are mathematically possible.

To facilitate conceptual understanding, numerical scores are translated into ratings of Lower, Moderate, or Higher. The numerical thresholds for each of these rating categories are consistent across all functions and values such that scores of <3.0 are rated “Lower,” scores ≥3.0 but ≤7.0 are rated “Moderate,” and scores that are >7.0 are rated “Higher.” These thresholds are consistent with the standard scoring scheme applied to all individual measures.

Each specific function, and its associated value, is included in one of four thematic groups: hydrologic, geomorphic, biologic, and water quality functions. Group ratings provide an indication of the degree to which each group of processes is present at a site. Groups are represented by the highest-rated function with the highest-rated associated value among the 2-3 functions that comprise each group. This hierarchical selection system ensures that thematic functional groups are represented by the highest-performing and highest-valued ecological function.

Stream Functional Assessment Method (SFAM) Map Baseline Condidtions September 2020



0 125 250 500 Feet

1 inch = 250 feet when printed on 8"x11.5" paper

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

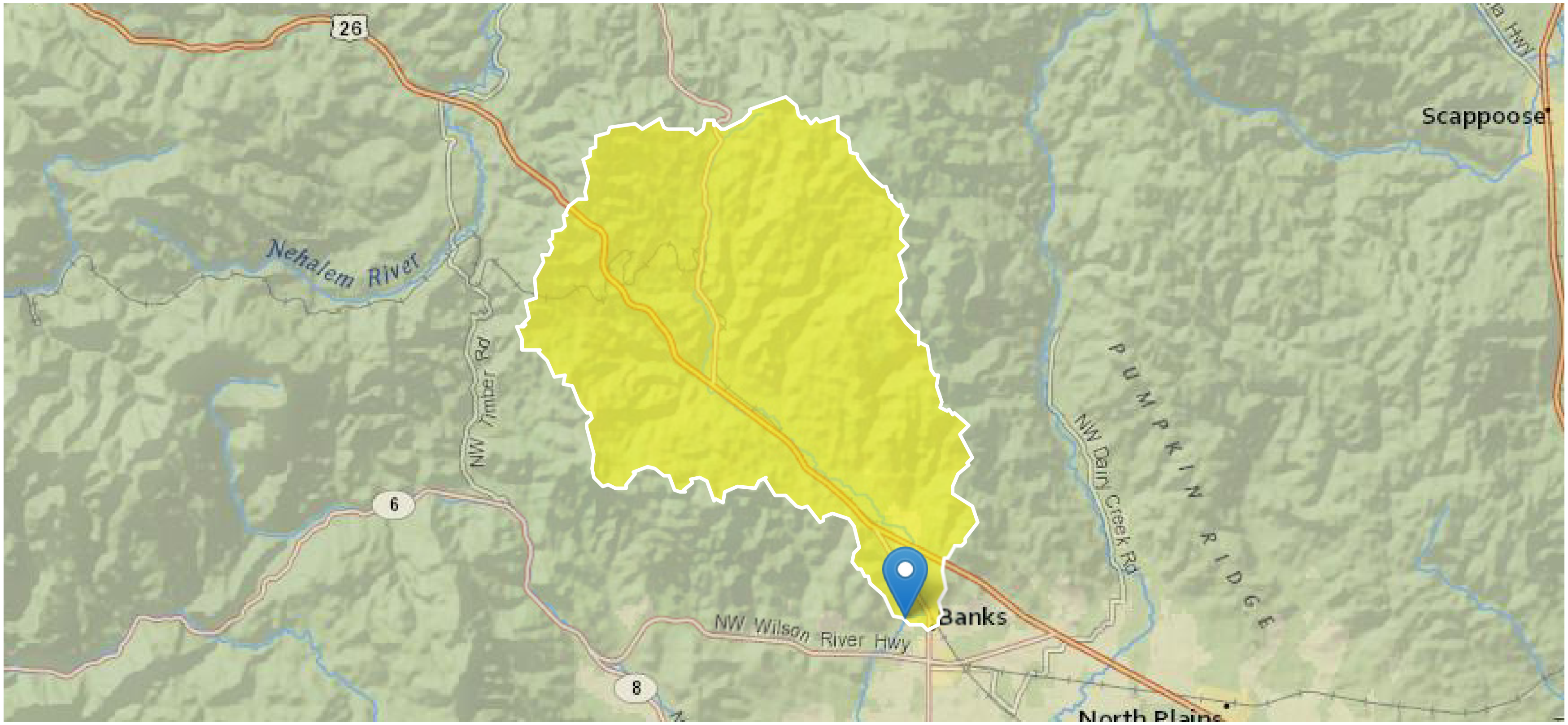
\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2020_Sept_DRAFT_Instrument Maps\mxds\SFAM Map 201009.mxd

Map created by Miles Eubanks

greenbanks

StreamStats Report- DCMB 9/26/20

Region ID: OR
Workspace ID: OR20200926183340460000
Clicked Point (Latitude, Longitude): 45.62019, -123.12384
Time: 2020-09-26 11:34:01 -0700



Stream Stats report for the DCMB accessed online on 9/26/20

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	48	square miles
I24H2Y	Maximum 24-hour precipitation that occurs on average once in 2 years - Equivalent to precipitation intensity index	2.31	inches
SOILPERM	Average Soil Permeability	0.68	inches per hour
JANMAXT2K	Mean Maximum January Temperature from 2K resolution PRISM 1961-1990 data	43.6	degrees F
WATCAPORC	Available water capacity from STATSGO data using methods from SIR 2005-5116	0.16	inches
ORREG2	Oregon Region Number	10001	dimensionless
BSLOPD	Mean basin slope measured in degrees	9.96	degrees
JANMINT2K	Mean Minimum January Temperature from 2K resolution PRISM PRISM 1961-1990 data	31	degrees F
ELEV	Mean Basin Elevation	813	feet
IMPERV	Percentage of impervious area	1.36	percent
LC11CRPHAY	Percentage of cultivated crops and hay, classes 81 and 82, from NLCD 2011	10	percent
LC11DEVHI	Percentage of area developed, high intensity, NLCD 2011 class 24	0	percent
LC11DVLO	Percentage of developed area, low intensity, from NLCD 2011 class 22	1	percent
LC11DVMD	Percentage of area developed, medium intensity, NLCD 2011 class 23	0	percent
LC11FORSHB	Percentage of forests and shrub lands, classes 41 to 52, from NLCD 2011	78	percent
LC11HERB	Percentage of herbaceous from NLCD 2011 classes 71-74	5	percent
PRECIP	Mean Annual Precipitation	59.4	inches
STRMTOT	total length of all mapped streams (1:24,000-scale) in the basin	59.2	miles

Peak-Flow Statistics Parameters[Reg 2B Western Interior LT 3000 ft Cooper]

/

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	48	square miles	0.37	7270
BSLOPD	Mean Basin Slope degrees	9.96	degrees	5.62	28.3
I24H2Y	24 Hour 2 Year Precipitation	2.31	inches	1.53	4.48
ELEV	Mean Basin Elevation	813	feet		
ORREG2	Oregon Region Number	10001	dimensionless		

Peak-Flow Statistics Flow Report[Reg 2B Western Interior LT 3000 ft Cooper]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PIl	PIu	SE	SEp	Equiv. Yrs.
2 Year Peak Flood	1780	ft^3/s	1050	3010	32.6	32.6	2
5 Year Peak Flood	2650	ft^3/s	1570	4460	32.4	32.4	2.8
10 Year Peak Flood	3240	ft^3/s	1910	5490	33	33	3.6
25 Year Peak Flood	4000	ft^3/s	2320	6890	34.1	34.1	4.8
50 Year Peak Flood	4580	ft^3/s	2620	8020	35.1	35.1	5.5
100 Year Peak Flood	5150	ft^3/s	2890	9170	36.2	36.2	6.2
500 Year Peak Flood	6500	ft^3/s	3500	12100	39.1	39.1	7.5

Peak-Flow Statistics Citations

Cooper, R.M.,2005, Estimation of Peak Discharges for Rural, Unregulated Streams in Western Oregon: U.S. Geological Survey Scientific Investigations Report 2005-5116, 76 p. (http://pubs.usgs.gov/sir/2005/5116/pdf/sir2005-5116.pdf)

Application Version: 4.4.0

Stream Function Assessment Method (SFAM) Report

Report Generated: September 26, 2020 11:18 AM

Location Information

Latitude	45.6206 N	Longitude	-123.1213 W
Elevation	190 ft	Level III Ecoregion	Willamette Valley
HUC8	17090010 Tualatin		
HUC10	1709001003 Dairy Creek		
HUC12	170900100302 Middle West Fork Dairy Creek		
Linear ft of stream in HUC8	2,548,889	Annual precipitation	43 in

Stream Type and Classifications

Stream Classification	Mountain Wet Rain / Valley Wet	Percent of project area	100.00%
Aquifer permeability	High	Soil permeability	High
Gradient	>6%	Erodibility	Difficult_to_Erode

Stream classifications and associated attributes are derived from a U.S. Environmental Protection Agency stream classification geospatial data layer developed for Oregon (2015). This layer provides a statewide stream/watershed classification system for streams and rivers of various sizes, based in part on a hydrologic landscape classification system.

Stream Function Assessment Method (SFAM) Report

Report Generated: September 26, 2020 11:18 AM

Rare Species Scores and Special Habitat Designations

Rare Species Type	Maximum score	Sum Score	Rating
Non-anadromous Fish Species	0	0	None
Amphibian & Reptile Species	0	0	None
Feeding Waterbirds	0	0	None
Songbirds, Raptors, and Mammals	0	0	None
Invertebrate Species	0	0	None
Plant Species	0	0	None

Scores have taken into account several factors for each rare species record contained in the official database of the Oregon Biodiversity Information Center (ORBIC): (a) the regional rarity of the species, (b) their proximity to the point of interest, and (c) the "certainty" that ORBIC assigns to each of those records.

Within 300 ft of a Special Protected Area?	No
Within a HUC12 that has designated Essential Salmonid Habitat?	Yes
Within 2 miles of an Important Bird Area?	Yes

Water Quality Impairments

West Fork Dairy Creek

Status	**Impairment**
Cat 4A: Water quality limited, TMDL approved	Phosphorus
Cat 4A: Water quality limited, TMDL approved	Temperature
Cat 4A: Water quality limited, TMDL approved	Dissolved Oxygen
Cat 4A: Water quality limited, TMDL approved	E. Coli

Water quality information is derived from Oregon's 2012 Integrated Report, including the list of water quality limited waters needing Total Maximum Daily Loads (303d List). Each record in the report is assigned an assessment category based on an evaluation of water quality information. Categories included in the SFAM Report are:

Category 5: *Water is water quality limited and a TMDL is needed; Section 303(d) list.*

Category 4: *Water is impaired or threatened but a TMDL is not needed because: (A) the TMDL is approved, (B) other pollution requirements are in place, or (C) the impairment (such as flow or lack of flow) is not caused by a pollutant.*

Category 3B: *Water quality is of potential concern; some data indicate non-attainment of a criterion, but data are insufficient to assign another category.*

Dominant soil type(s)			
Soil Type	**Erosion Hazard Rating**	**Hydric Rating**	**Percent Area**
McBee silty clay loam	Slight	Yes	87.45%
Wapato silty clay loam	Slight	Yes	12.55%

This report contains both centroid-based and polygon-based data. The Location Information section of the report contains centroid-based data (determined by the center point of the polygon), while the remaining sections are polygon-based (determined from the entire polygon).

SFAM Site Layout Field Data Form **Version 1.1** **Assessment Timing:** Current conditions

Project Area Name: Dairy Creek Mitigation Bank Date: 9/24 and 9/2 Assessor: Moiel, A. Vlahakis, Crissman

Print this form to take to the field, along with the PAA and EAA field forms. Use the instructions, measurements, and diagrams on this form to establish the two assessment areas necessary for data collection.

Project Area Description:

Dairy Creek Mitigation Bank baseline assessment. See MBI for project area description.

Is there a Floodplain?

Yes, much of project area is within the floodplain and stream is disconnected from floodplain.

Establishing the boundaries of the Proximal Assessment Area (PAA):

a) Identify the spatial extent of direct impact.

b) Establish the longitudinal boundaries of the PAA at the upstream and downstream extent of the impact, or 50ft of stream length, whichever is greater.

c) Locate the center of the PAA and measure the bankfull channel width (BFW).

d) At two additional locations, equidistant between the PAA center and the PAA upper and lower boundaries, measure BFW. PAA transects will be located at the 3 locations where BFW was measured.

e) Establish the lateral boundaries of the PAA at a distance of 2 × the average BFW or 50' from the stream edge (bankfull edge), whichever is greater, on each side of the stream.

Total PAA stream length (ft) =	1050
Distance between transects (PAA length ÷ 4) =	250
PAA lateral boundary (2 × avg bankfull width (calculated below) or 50 feet =	94

Bankfull Width:			
Transect	Location	Width (ft)	Average
T1	PAA1	50	47
T2	PAA2	40	
T3	PAA3	50	

	Latitude	Longitude
Corner 1		
Corner 2		
Corner 3		
Corner 4		

Establishing the boundaries of the Extended Assessment Area (EAA):

a) The EAA is an upstream and downstream extension of the PAA. Establish the longitudinal boundaries by multiplying the average BFW by 5 and measuring that distance upstream and downstream from the PAA upper and lower boundaries, respectively.

b) The lateral boundaries of the EAA are the same distance from the stream edge (bankfull) as the lateral boundaries for the PAA (above). Note that the EAA contains the entire PAA.

c) Locate the 11 EAA transect locations by dividing the total EAA length by 10. The distance between each transect is 0.1 × the total EAA length. Transects include the upper and lower EAA boundaries.

Length EAA extends above/below PAA (5 × average BFW) =	500
Total EAA length (10 × BFW + PAA length, rounded to nearest 10') =	1550
Distance between EAA transects (EAA length ÷ 10) =	155

	Latitude	Longitude
Corner 1		
Corner 2		
Corner 3		
Corner 4		

SFAM Extended Area Assessment (EAA) Field Data Form **Version 1.1** **Assessment Timing:** Current conditions

Project Area Name: Dairy Creek Mitigation Bank Date: 9/24 and 9/25/20, and 3/18/ Assessor: Moiel, A. Vlahakis, Crissman

Print this form to take to the field. Only the defined print area is needed (i.e. not the data calculation columns). After collecting data in the field, transfer data into the Excel worksheet below using drop-down menus where available. Cells in the "Calculations" section and on the "Functions" tab will populate automatically.

What is the total longitudinal length of the EAA (ft)?	1550

Wood (F14): Tally each piece of wood along the EAA that measures > 4" diameter and is at least 5' long. You can record the location of the wood to avoid double counting.

Total = 149

Side Channels (F12) and Lateral Migration (F13): Record start and end locations (ft) of adjacent side channels and evidence of constraints to lateral migration along the length of the EAA.

	Start	End	Start	End	Start	End	Start	End	Start	End
Side channels (either side)	1000	1250								
Constraints to lateral migration (left)	500	1550								
Constraints to lateral migration (right)										

Unique Features (V16): Note the presence of any unique habitat features throughout the EAA including, but not limited to: log jams, braided channels, >30% wetlands in floodplain, springs, seeps, cold water inputs, etc.

Multiple small log jams within EAA ~ X.

		Wetted Width (F17)	Incision (F15)		Substrate Embeddedness (F16)					Thalweg Depth (F17)									
		Record width and height at each cross-channel transect (round to nearest 0.1 ft).			Record % embeddedness (to the nearest quartile: 0, 25, 50, 75, 100) at 5 equidistant points along each cross-channel transect.					Record the thalweg depth at 10 equidistant points between each cross-channel transect while moving upstream.									
EAA Transect	Feet from EAA lower boundary	Wetted width	Bankfull height	Lowest floodplain height	Embed1	Embed2	Embed3	Embed4	Embed5	Depth1	Depth2	Depth3	Depth4	Depth5	Depth6	Depth7	Depth8	Depth9	Depth10
A	0	20	13.5	13.5	100	100	100	100	100	3.3	4.1	5.6	5	5.2	5.4	4.2	2.7	3.5	4.2
B	155	20	15.4	15.4	100	100	100	100	100	5.8	3.5	3.4	2.8	3.8	4.2	5.5	6	3.5	3.1
C	310	25	14.6	14.6	100	100	100	100	100	3.6	2.4	2.3	3.1	3.4	3.4	2	2.2	2	2.5
D	465	25	13.5	14.2	100	100	100	100	100	1.8	2.8	3.2	3.5	2.1	2.5	4.1	3.9	3.6	2.6
E	620	26	13.8	16.1	100	100	100	100	100	2.1	2.2	2.4	2.7	2.8	2.6	2.9	3.5	3	2.8
F	775	21	13.2	15.6	100	100	100	100	100	2.6	1.8	1.7	1.8	1.7	2	1.8	2	2	1.6
G	930	23	12.5	14.7	100	100	100	100	100	1.6	2	2.1	3.6	1.8	1.5	1.4	1.7	2.2	2.3
H	1085	24.6	12.7	15.1	100	100	100	50	75	1.8	1.4	1.8	7	7	7	2.4	2.5	3.3	3.1
I	1240	19.9	14.8	16.9	100	100	100	100	100	2.6	2	2.1	1.3	1.7	1.7	1.9	1.6	1.8	2
J	1395	22.7	15.7	18.5	100	100	100	100	100	1.5	1.9	1.5	1.3	1.3	2.4	2.2	3.2	3	3.4
K	1550	25.7	16.2	19	100	100	100	100	100										

SFAM Proximal Area Assessment (PAA) Field Data Form **Version 1.1** **Assessment Timing:** Current conditions

Project Area Name: Dairy Creek Mitigation Bank Date: 9/24 and 9/25/20, and 3/18/2 Assessor: Moiel, A. Vlahakis, Crissman

Print this form to take to the field. Only the defined print area is needed (i.e. not the data calculation columns). After collecting data in the field, transfer data into the Excel worksheet below using drop-down menus where available. Cells in the "Calculations" section and on the "Functions" tab will populate automatically.

What is the longitudinal length of the PAA?	**Natural Cover (F1)**: Record densiometer readings from both left and right banks at each transect.				See F2-F4 below	**Riparian Corridor (F5):** Record the width (ft) of the riparian corridor at each PAA transect. If > 330 ft, enter 330.				**Barriers (F6):** Does a man-made structure limit fish passage (barrier, partial, passable, unknown, none)?	**Exclusion (F7):** What % of the 100-yr floodplain is excluded due to features (<=20% >20-40%, >40-80%, >80%)?
		T1	T2	T3			T1	T2	T3		
	Left	10	12	10		Left	12	38	15	Passable	>40-80%
1050	Right					Right					

Invasive Vegetation (F2), Native Woody Vegetation (F3), and Large Trees (F4) : For each of the three vegetation classes, record the start and end positions (distance from bankfull, to the nearest 0.1ft) of each occurrence along the length of the transect. Transects run perpendicular to the stream edge, from the bankfull edge to the lateral boundary of the PAA.

What is the length of the transect (ft)?	94

Vegetation transects are conducted on both banks. If it is physically or legally unfeasible to access one side, indicate which side was surveyed by selecting Left or Right from the dropdown menu.	Left

Transect	Vegetation Class	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
1 (left)	InvVeg	0	12														
	Native WoodyVeg	0	29														
	LgTree	0	29														
1 (right)	InvVeg																
	Native WoodyVeg																
	LgTree																
2 (left)	InvVeg	0	30														
	Native WoodyVeg	0	10														
	LgTree	0	3														
2 (right)	InvVeg																
	Native WoodyVeg																
	LgTree																
3 (left)	InvVeg	0	15														
	Native WoodyVeg	0	23														
	LgTree	0	23														
3 (right)	InvVeg																
	Native WoodyVeg																
	LgTree																

Armor (F8) and Erosion (F9): Record start and end locations (ft) of bank armoring features and bank erosion evidence along the length of the PAA.

	Start	End	Start	End	Start	End	Start	End
Armoring (left)	0	40	95	155	235	390	450	500
Armoring (right)								
Erosion (left)	0	1050						
Erosion (right)	0	1050						

Overbank Flow (F10): Is there evidence of overbank flow at least 0.5 × BFW from the bankfull edge? *(yes or no)*	YES

Wetland Vegetation (F11) : Are there FACW or OBL wetland plants on the banks or in the floodplain? *(yes or no)*	YES
If yes, answer the following questions: If no, enter N/A	
→ Are any located > 0.5 × BFW from the bankfull edge?	NO
→ ...for more than 70% of the PAA length?	NO

STREAM FUNCTION ASSESSMENT METHOD for OREGON

Name of Project Area:	Dairy Creek Mitigation Bank	Assessment Timing:	Current conditions	Enter Data in These Boxes ONLY / Scores Automatically Calculated in Green Boxes

VALUES MEASURES TABLE

FILL IN THE YELLOW BOXES. Most questions contain drop-down menus in their respective answer box. Select an answer from the drop-down menus, when possible, instead of typing an answer.

Measure	Function Groups	Submeasure	Measure Abbreviation	Qualifiers		Data Entry			Measure Score
V1 **Rare Species Occurrence & Special Habitat Designations**	**Are there rare species or special habitat designations in the vicinity of the PA ?** Answer each submeasure using information from the site's SFAM report (rare species scores & special habitat designations section), as well as any available survey data for the PA and its vicinity, or personal knowledge about the site. Note: The SFAM Report provides rankings of High, Intermediate, Low, or None for each category of rare species associated with aquatic and riparian habitat. Upgrade a ranking to High if there is a recent (within 5 years) onsite observation of any of these species by a qualified observer under conditions similar to what now occur. Provide references in the external notes section of the cover page. *Values informed: Surface Water Storage, Flow Variation, Substrate Mobility, Maintain Biodiversity, Sustain Trophic Structure, Nutrient Cycling, Chemical Regulation, Thermal Regulation*								
	Essential salmonid habitat or rare non-anadromous fish species:								
	Hydrology, Geomorphology, Biology, Water Quality	Fish	Fish		Is the PA within a HUC12 that has designated Essential Salmonid Habitat (ESH)? Select yes or no.	Yes			1.00
					According to the site's SFAM Report, what is the "non-anadromous fish" score? Select an answer from the dropdown menu:	None/Not Known			
	Rare amphibian and reptile species:								
	Hydrology, Geomorphology, Biology, Water Quality	Rare Amphibians and Reptiles	RarAmRep		According to the site's SFAM Report, what is the "amphibian and reptile" score? Select an answer from the dropdown menu:	None/Not Known			0.00
	Important Bird Areas or rare waterbirds:								
	Biology, Water Quality	Waterbirds	Waterbird		Is there an Important Bird Area (IBA) within a 2-mile radius of the PA?	Yes			1.00
					According to the site's SFAM Report, what is the "feeding waterbird" score? Select an answer from the dropdown menu:	None/Not Known			
	Rare songbirds, raptors, and mammals:								
	Biology, Water Quality	Rare Bird and Mammals	RarBdMm		According to the site's SFAM Report, what is the "songbird, raptor and mammal" score? Select an answer from the dropdown menu:	None/Not Known			0.00
	Rare invertebrate species:								
	Hydrology, Geomorphology, Biology, Water Quality	Rare Invertebrates	RarInvert		According to the site's SFAM Report, what is the "invertebrates" score? Select an answer from the dropdown menu:	None/Not Known			0.00
	Rare plant species:								
	Geomorphology, Biology, Water Quality	Rare Plants	RarPlant		According to the site's SFAM Report, what is the "plant" score? Select an answer from the dropdown menu:	None/Not Known			0.00
V2 **Water Quality Impairments**	**Is this reach on the 303(d) list or other TMDL (Categories 3B-5) for any of the following impairments: sediment, nutrient, metals & toxics, temperature, or flow modification?** Answer each submeasure using information from the site's SFAM Report (water quality impairments section). *Values informed: Flow Variation, Sediment Continuity, Create & Maintain Habitat, Sustain Trophic Structure, Nutrient Cycling, Chemical Regulation, Thermal Regulation*								
	Sediment impairment: total suspended solids (TSS), sedimentation, or turbidity (note that some sedimentation can be naturally occurring and desirable therefore does not constitute a problem)								
	Geomorphology, Water Quality	Sedimentation	SedList		Select yes or no from the dropdown menu:	Yes			1.00
	Nutrient impairment: phosphorus, nitrate, ammonia, DO, aquatic weeds or algae, chlorophyll a, etc.; or untreated stormwater/wastewater discharge occurs within 500 feet of the reach								
	Biology, Water Quality	Nutrient Impairment	NutrImp		Select yes or no from the dropdown menu:	Yes			1.00
	Metals or other toxics impairment: toxics, dioxin, heavy metals (iron, manganese, lead, zinc, etc.); or untreated stormwater/wastewater discharge occurs within 500 feet of the reach								
	Water Quality	Metals & Toxics Impairment	ToxImp		Select yes or no from the dropdown menu:	No			0.00
	Temperature impairment:								
	Biology, Water Quality	Temperature Impairment	TempImp		Select yes or no from the dropdown menu:	Yes			1.00
	Flow modification:								
	Hydrology, Biology	Flow Modification	FlowMod		Select yes or no from the dropdown menu:	No			0.00

V3 **Protected Areas**	**Is the PA boundary within 300 feet of a special protected area?** Answer using information from the site's SFAM Report (Within 300 feet of a Special Protected Area) as well as other available data for the PA and its vicinity. Note: The SFAM Report evaluates whether BLM Areas of Critical Environmental Concern (ACEC) or Outstanding Natural Areas (ONA), federal Research Natural Areas (RNA) or Special Interest Areas (SIA), Natural Heritage Conservation Areas (NHCA), and Land Trust and Nature Conservancy Preserves are within 300 feet of the PA. If there are other lands within 300 feet of the site that are protected specifically for their high ecological significance, select yes and provide references in the assessment notes section of the cover page. *Values informed: Maintain Biodiversity, Sustain Trophic Structure*								
	Biology		Protect		Select yes or no from the dropdown menu:	No			0.00
V4 **Impervious Area**	**What is the percent impervious area in the drainage basin?** Answer using information from the site's StreamStats Report (IMPERV). *Values informed: Surface Water Storage, Flow Variation, Sediment Continuity, Substrate Mobility, Create & Maintain Habitat, Sustain Trophic Structure, Nutrient Cycling, Chemical Regulation, Thermal Regulation*								
	Hydrology, Geomorphology, Biology, Water Quality		ImpArea		<10%, select A; 10-25%, select B; >25-60%, select C; >60%, select D.	A			0.00
V5 **Riparian Area**	**What is the percentage of intact riparian area within 2 miles upstream of the PA ?** Intact refers to a riparian area with forest or otherwise unmanaged (i.e. natural) perennial cover appropriate for the basin that is at least 15 ft wide on both sides of the channel. Unmanaged perennial cover is vegetation that includes wooded areas, native prairies, sagebrush, vegetated wetlands, as well as relatively unmanaged commercial lands in which the ground and vegetation is disturbed less than annually, such as lightly grazed pastures, timber harvest areas, and rangeland. It does not include water, pasture, row crops (e.g., vegetable, orchards, Christmas tree farms), lawns, residential areas, golf courses, recreational fields, pavement, bare soil, rock, bare sand, or gravel or dirt roads. *Values informed: Create & Maintain Habitat, Sustain Trophic Structure, Nutrient Cycling, Chemical Regulation, Thermal Regulation*								
	Biology, Water Quality		RipArea		If >50% select A. If >35-50%, select B. If 15-35%, select C. If <15%, select D.	B			0.70
V6 **Extent of Downstream Floodplain Infrastructure**	**What is the extent of infrastructure (buildings, bridges, utilities, row crops) in the floodplain ?** Consider the floodplain area between the PA and either the next largest water body (large tributary, mainstem junction, lake, etc.) or 2 miles downstream, whichever is less. *Values informed: Surface Water Storage, Sediment Continuity, Create & Maintain Habitat, Sustain Trophic Structure*								
	Hydrology, Geomorphology, Biology		DwnFP		If >50% of total area, select A. If 1-50% of total area, select B. If none, select C. If not known or the downstream floodplain is not mapped, select D.	B			0.50
V7 **Zoning**	**What is the dominant zoned land use designation downstream of the PA?** Consider the floodplain area between the PA and either the next largest water body (larger tributary, mainstem junction, lake, etc.) or 2 miles downstream, whichever is less. *Values informed: Surface Water Storage, Create & Maintain Habitat, Sustain Trophic Structure*								
	Hydrology, Biology		Zoning		If developed (commercial, industrial, residential, etc.), select A. If agriculture or rural residential, select B. If forest, open space, or public lands, select C. If not zoned or no information, select D.	B			0.50
V8 **Frequency of Downstream Flooding**	**What is the frequency of downstream flooding?** Consider the floodplain area between the PA and either the next largest water body or 2 miles, whichever is less. Determine the frequency of flooding downstream of the PA that affects infrastructure (i.e. affects use of the site or causes economic loss). *Values informed: Surface Water Storage*								
	Hydrology		DwnFld		If frequent (several times a year), select A. If moderate (up to once a year), select B. If infrequent (only large events), select C. If never or not known, select D.	C			0.30

V9 **Impoundments**	**<u>What is the prevalence of impoundments within 2 miles upstream and downstream of the PA that are likely to cause shifts in timing or volume of water?</u>** The shift may be by hours, days, or weeks, becoming either more muted (smaller or less frequent peaks spread over longer times, more temporal homogeneity of flow or water levels) or more flashy (larger or more frequent spikes but over shorter times). For each category, select yes or no from the dropdown menu. *Values informed: Surface Water Storage, Flow Variation, Sediment Continuity, Substrate Mobility, Create & Maintain Habitat; Functions informed: Flow Variation*							
	Hydrology, Geomorphology, Biology		Impound		Are there 1-2 small dams or other impoundments **<u>upstream</u>** of the PA?	No	Upstream impoundments subscore:	1.00
					Are there >2 small impoundments, 1 or more large dams or other impoundments **<u>upstream</u>** of the PA?	No		
					Are there 1-2 small dams or other impoundments **<u>downstream</u>** of the PA?	No	Downstream impoundments subscore:	1.00
					Are there >2 small impoundments, 1 or more large dams or other impoundments **<u>downstream</u>** of the PA?	No		
V10 **Fish Passage Barriers**	**<u>Are there man-made fish passage barriers within 2 miles upstream and/or downstream of the PA ?</u>** Select an answer from the drop-down menu for each of the upstream and downstream directions. If more than one barrier is present, answer for the one with the most restricted level of passage (e.g. Blocked). Do not include natural barriers. *Values informed: Maintain Biodiversity, Sustain Trophic Structure*							
	Biology		Passage	Slope barrier	Upstream	Unknown	1.00	1.00
					Downstream	Unknown	1.00	
V11 **Water Source**	**<u>Is there an area that is of special concern for drinking water sources or groundwater recharge within 2 miles downstream of the PA?</u>** This includes any of the following: the source area for a surface-water drinking water source; the source area for a groundwater drinking water source; a designated Groundwater Management Area; a designated Sole Source Aquifer. *Values informed: Sub/Surface Transfer, Nutrient Cycling, Chemical Regulation*							
	Hydrology, Water Quality		Source		Select yes or no from the dropdown menu:	No		0.00
V12 **Surrounding Land Cover**	**<u>What are the land cover types surrounding the PA?</u>** Draw a 2 mile radius around the PA. Provide an estimate of the percentage of area within the resulting polygon that matches each land cover description. Enter 0% if none. Enter 1% if barely present. Must sum to 100%. *Values informed: Maintain Biodiversity, Sustain Trophic Structure*							
	Biology		SurrLand		Unmanaged vegetation (wetland, native grassland, forest) or water	20	× 1.00 20.00	0.48
					Managed vegetation (pasture, regularly watered lawn (i.e. park), row crops, orchards)	55	× 0.50 27.50	
					None of the above (including bare areas [dirt, rock], roads, energy facilities, residential, commercial, industrial)	25	× 0.00 0.00	
					SUM	100		
V13 **Riparian Continuity**	**<u>What is the longitudinal extent of intact riparian area that is contiguous to the PA?</u>** Select the longest length of contiguous riparian corridor in either the upstream or downstream direction, but do not include the PA length itself. Intact refers to a riparian area with forest or otherwise managed (i.e. natural) perennial cover appropriate for the basin that is at least 15 ft wide on both sides of the channel. Contiguous means there are no > 100 ft gaps in forested cover or unmanaged perennial cover. Unmanaged perennial cover is vegetation that includes wooded areas, native prairies, sagebrush, vegetated wetlands, as well as relatively unmanaged commercial lands in which the ground and vegetation is disturbed less than annually, such as lightly grazed pastures, timber harvest areas, and rangeland. It does not include water, pasture, row crops (e.g., vegetable, orchards, Christmas tree farms), lawns, residential areas, golf courses, recreational fields, pavement, bare soil, rock, bare sand, or gravel or dirt roads. *Values informed: Maintain Biodiversity, Create & Maintain Habitat, Sustain Trophic Structure, Nutrient Cycling, Chemical Regulation, Thermal Regulation*							
	Biology, Water Quality		RipCon		If <100 feet, select A. If 100-500 feet, select B. If >500 feet, select C.	C		1.00
V14 **Watershed Position**	**<u>What is the relative position of the PA in its HUC 8 watershed?</u>** Answer this question looking at position of the PA releative to the 8-digit HUC layer. • If the PA is (a) closer to the watershed's outlet than its upper end and (b) closer to the large stream/river exiting the watershed's outlet than it is to the boundary of the watershed, select "lower 1/3." • If the PA is (a) closer to the watershed's upper end than its outlet and (b) closer to the watershed's boundary than its large stream/river, select "upper 1/3." • If neither of the above conditions are met, select "middle 1/3." *Values informed: Sediment Continuity, Nutrient Cycling, Chemical Regulation*							
	Geomorphology, Water Quality		Position		Select an answer from the dropdown menu:	Upper 1/3		0.00

V15 **Flow Restoration Needs**	**What is the "streamflow restoration need" ranking of the watershed within which the PA is located?** Answer this question using the Flow Restoration Needs layer in the SFAM Map Viewer. *Values informed: Flow Variation, Create & Maintain Habitat*								
	Hydrology, Biology		FlowRest		Select an answer from the dropdown menu:	High or Highest			1.00
V16 **Unique Habitat Features**	**Are there rare aquatic habitat features within the EAA that are not common to the rest of the drainage basin ?** For each feature type, select yes or no from the dropdown menu. This question must be answered in the field, but the user can check for any mapped wetlands or seeps, springs, or tributaries in the office using the Oregon Wetlands Cover, Springs, and the Flowline layers, respectively. *Values informed: Substrate Mobility, Maintain Biodiversity, Create & Maintain Habitat, Sustain Trophic Structure, Thermal Regulation*								
	Geomorphology, Biology		HabFeat		Large log jams that span 25% or more of the active channel width?	Yes		Overall HabFeat score	0.50
					Braided channel or otherwise multiple channels resulting in islands?	No			
					Large spatial extent (>30%) of wetlands in the floodplain?	No		Substrate subscore	0.00
					Seeps, springs, or tributaries contributing colder water?			Thermal subscore	0.00
Already in Stream Classification on Cover Page - NO DATA INPUT REQUIRED.									
Surface Water Runoff	**What is the level of surface water runoff (based on local water availability and local gradient)?** No data input necessary, information taken from EPA classification (stream type & gradient).								
	Hydrology		Runoff						1.00
Aquifer Permeability	**What is the permeability of the aquifer (determined by percent permeable bedrock based on hydraulic conductivity m/day)?** No data input necessary, information taken from EPA classification.								
	Hydrology		AqPerm			High			0.00
Soil Permeability	**What is the permeability of the soil (based on hydraulic conductivity in cm/hr)?** No data input necessary, information taken from EPA classification.								
	Hydrology		SoilPerm			High			0.00
Erodibility	**What is the erodibility of this reach?** No data input necessary, information taken from EPA classification.								
	Geomorphology		Erode			Difficult to Erode			0.75

STREAM FUNCTION ASSESSMENT METHOD for OREGON

Version 1.1 (April 2020)

Name of Project Area:	Dairy Creek Mitigation Bank	**Date of Field Assessment:**	NA- Predicted 10 Years after construction	**Latitude*:**	45.6206
Data Collector:	Moiel	**Elevation:** (SFAM Report)	190 ft	**Longitude*:**	-123.1213

* near center of the project site

Project Number:		**Project Area Length (feet):**		**Project Area (acres):**	
Assessment timing:	Predicted conditions	**Photo Numbers:**			

What is the Oregon Stream Classification for the project area? Select from drop-down menu. Refer to the SFAM Report. If the project area spans more than one reach, describe the dominant stream classification.	Mountain Wet Rain/Valley Wet

What ratings does the Oregon Stream Classification identify for the following measures in the local hydrologic unit? Refer to the SFAM Report. If project area spans more than one reach, describe the dominant classification:

Aquifer Permeability (local)	High	Soil Permeability (local)	High	
Erodibility (local)	Difficult to Erode	Gradient*	> 6%	*If EPA Classification is different from the gradient you observe in the local reach, select the gradient in the local reach.

Is the channel perennial, intermittent, or ephemeral? (Map Viewer-NHD Flowline)	Perennial	
Which Level III EPA Ecoregion is the site located in? (SFAM Report)	Willamette Valley	Western Mountains
Is the average width of the stream less than or greater than 50 feet? (User Input)	≤ 50 feet	Small
What is the 2 year peak flood (cfs)? (StreamStats Report)	1780	
What is the size of the drainage area (mi^2)? (StreamStats Report)	48	

External Data: List below the persons and/or agencies that provided location information on rare wildlife species, and/or rare plants, and the date the information was gathered (if known).

ORNHIC was contacted to provide ESA listed species occurance information for the project area; the ORNHIC report is attached.

Project Area History: Based on conversation with landowner/manager and other information, describe below the years and extent (% of project area) of past and present management actions (e.g., vegetation control), natural disturbances (e.g., fire, insect infestations), and human-associated disturbances (e.g., grazing regimes).

Information about the project area is included in the MBI Exhibit C.

Assessment Notes: Note any special features of the reach or landscape, problems with scoring, or other information that may be relevant.

The project area includes two portions of perennial channel separated by an intermittent side channel. The perennial channel meanders offsite to the north and then re-enters the western portion of the project area. The portion of the perennial channel that is located offsite was not evaluated due to access restrictions. Please refer to the MBI for more information.

STREAM ASSESSMENT SCORES SHEET **Version 1.1** **Assessment Timing:** **Predicted conditions**

Project Area Name:	Dairy Creek Mitigation Bank		
Investigator Name:	Moiel		
Date of Field Assessment:	NA- Predicted 10 Years after construction		
Latitude (decimal degrees):	45.6206	Longitude (decimal degrees):	-123.1213

SPECIFIC FUNCTIONS	**Function Score**	**Function Rating**	**Value Score**	**Value Rating**
Surface Water Storage (SWS)	7.82	Higher	6.33	Moderate
Sub/Surface Water Transfer (SST)	7.75	Higher	0.00	Lower
Flow Variation (FV)	4.47	Moderate	6.67	Moderate
Sediment Continuity (SC)	5.27	Moderate	8.08	Higher
Sediment Mobility (SM)	4.35	Moderate	5.00	Moderate
Maintain Biodiversity (MB)	7.12	Higher	6.63	Moderate
Create and Maintain Habitat (CMH)	6.18	Moderate	8.03	Higher
Sustain Trophic Structure (STS)	8.55	Higher	5.48	Moderate
Nutrient Cycling (NC)	7.82	Higher	6.76	Moderate
Chemical Regulation (CR)	8.31	Higher	2.76	Lower
Thermal Regulation (TR)	5.88	Moderate	3.07	Moderate

GROUPED FUNCTIONS	**REPRESENTATIVE FUNCTION**	**Function Group Rating**	**Value Group Rating**
Hydrologic Function (SWS, SST, FV)	Surface Water Storage (SWS)	Higher	Moderate
Geomorphic Function (SC, SM)	Sediment Continuity (SC)	Moderate	Higher
Biologic Function (MB, CMH, STS)	Sustain Trophic Structure (STS)	Higher	Moderate
Water Quality Function (NC, CR, TR)	Nutrient Cycling (NC)	Higher	Moderate

Formulas for each specific function and value (shown on Subscores tab) produce a numerical score between 0.0 and 10.0. For ecological functions, a score of 0.0 indicates that negligible function is being provided by the stream whereas a score of 10.0 indicates that the stream is providing maximum function (as defined) given certain contextual factors. For values, a score of 0.0 indicates that there is low opportunity for the site to provide a specific ecological function and that, even if it did, the specific function would not be of particular significance given the context of the site. Conversely, a value score of 10.0 indicates that a site has the opportunity to provide a specific function and that it would be highly significant in that particular location. For all function and value formulas, both extents of the scoring range (0.0 and 10.0) are mathematically possible.

To facilitate conceptual understanding, numerical scores are translated into ratings of Lower, Moderate, or Higher. The numerical thresholds for each of these rating categories are consistent across all functions and values such that scores of <3.0 are rated “Lower,” scores ≥3.0 but ≤7.0 are rated “Moderate,” and scores that are >7.0 are rated “Higher.” These thresholds are consistent with the standard scoring scheme applied to all individual measures.

Each specific function, and its associated value, is included in one of four thematic groups: hydrologic, geomorphic, biologic, and water quality functions. Group ratings provide an indication of the degree to which each group of processes is present at a site. Groups are represented by the highest-rated function with the highest-rated associated value among the 2-3 functions that comprise each group. This hierarchical selection system ensures that thematic functional groups are represented by the highest-performing and highest-valued ecological function.

SFAM Site Layout Field Data Form **Version 1.1** **Assessment Timing:** Predicted conditions

Project Area Name: Dairy Creek Mitigation Bank Date: NA- Predicte Assessor: Moiel

Print this form to take to the field, along with the PAA and EAA field forms. Use the instructions, measurements, and diagrams on this form to establish the two assessment areas necessary for data collection.

Project Area Description:
Is there a Floodplain?

Establishing the boundaries of the Proximal Assessment Area (PAA):

a) Identify the spatial extent of direct impact.

b) Establish the longitudinal boundaries of the PAA at the upstream and downstream extent of the impact, or 50ft of stream length, whichever is greater.

c) Locate the center of the PAA and measure the bankfull channel width (BFW).

d) At two additional locations, equidistant between the PAA center and the PAA upper and lower boundaries, measure BFW. PAA transects will be located at the 3 locations where BFW was measured.

e) Establish the lateral boundaries of the PAA at a distance of 2 × the average BFW or 50' from the stream edge (bankfull edge), whichever is greater, on each side of the stream.

Total PAA stream length (ft) =	1050
Distance between transects (PAA length ÷ 4) =	250
PAA lateral boundary (2 × avg bankfull width (calculated below) or 50 feet =	114

Bankfull Width:			
Transect	Location	Width (ft)	Average
T1	PAA1	80	57
T2	PAA2	40	
T3	PAA3	50	

	Latitude	**Longitude**
Corner 1		
Corner 2		
Corner 3		
Corner 4		

Establishing the boundaries of the Extended Assessment Area (EAA):

a) The EAA is an upstream and downstream extension of the PAA. Establish the longitudinal boundaries by multiplying the average BFW by 5 and measuring that distance upstream and downstream from the PAA upper and lower boundaries, respectively.

b) The lateral boundaries of the EAA are the same distance from the stream edge (bankfull) as the lateral boundaries for the PAA (above). Note that the EAA contains the entire PAA.

c) Locate the 11 EAA transect locations by dividing the total EAA length by 10. The distance between each transect is 0.1 × the total EAA length. Transects include the upper and lower EAA boundaries.

Length EAA extends above/below PAA (5 × average BFW) =	500
Total EAA length (10 × BFW + PAA length, rounded to nearest 10') =	1550
Distance between EAA transects (EAA length ÷ 10) =	155

	Latitude	**Longitude**
Corner 1		
Corner 2		
Corner 3		
Corner 4		

SFAM Extended Area Assessment (EAA) Field Data Form **Version 1.1** **Assessment Timing:** Predicted conditions

Project Area Name: Dairy Creek Mitigation Bank Date: NA- Predicted 10 Years after Assessor: Moiel

Print this form to take to the field. Only the defined print area is needed (i.e. not the data calculation columns). After collecting data in the field, transfer data into the Excel worksheet below using drop-down menus where available. Cells in the "Calculations" section and on the "Functions" tab will populate automatically.

What is the total longitudinal length of the EAA (ft)?	1550

Wood (F14): Tally each piece of wood along the EAA that measures > 4" diameter and is at least 5' long. You can record the location of the wood to avoid double counting.

Total = 199

Side Channels (F12) and Lateral Migration (F13): Record start and end locations (ft) of adjacent side channels and evidence of constraints to lateral migration along the length of the EAA.

	Start	End	Start	End	Start	End	Start	End	Start	End
Side channels (either side)	1000	1980								
Constraints to lateral migration (left)	500	900								
Constraints to lateral migration (right)										

Unique Features (V16): Note the presence of any unique habitat features throughout the EAA including, but not limited to: log jams, braided channels, >30% wetlands in floodplain, springs, seeps, cold water inputs, etc.

Multiple small log jams within EAA ~ X.

		Wetted Width (F17)	Incision (F15)		Substrate Embeddedness (F16)					Thalweg Depth (F17)									
		Record width and height at each cross-channel transect (round to nearest 0.1 ft).			Record % embeddedness (to the nearest quartile: 0, 25, 50, 75, 100) at 5 equidistant points along each cross-channel transect.					Record the thalweg depth at 10 equidistant points between each cross-channel transect while moving upstream.									
EAA Transect	Feet from EAA lower boundary	Wetted width	Bankfull height	Lowest floodplain height	Embed1	Embed2	Embed3	Embed4	Embed5	Depth1	Depth2	Depth3	Depth4	Depth5	Depth6	Depth7	Depth8	Depth9	Depth10
A	0	20	13.5	13.5	100	100	100	100	100	3.3	4.1	5.6	5	5.2	5.4	4.2	2.7	3.5	4.2
B	155	20	15.4	15.4	100	100	100	100	100	5.8	3.5	3.4	2.8	3.8	4.2	5.5	6	3.5	3.1
C	310	25	14.6	14.6	100	100	100	100	100	3.6	2.4	2.3	3.1	3.4	3.4	2	2.2	2	2.5
D	465	25	13.5	13.5	100	100	100	100	100	1.8	2.8	3.2	3.5	2.1	2.5	4.1	3.9	3.6	2.6
E	620	26	13.8	13.8	100	100	100	100	100	2.1	2.2	2.4	2.7	2.8	2.6	2.9	3.5	3	2.8
F	775	21	13.2	13.2	100	100	100	100	100	2.6	1.8	1.7	1.8	1.7	2	1.8	2	2	1.6
G	930	23	12.5	12.5	100	100	100	100	100	1.6	2	2.1	3.6	1.8	1.5	1.4	1.7	2.2	2.3
H	1085	24.6	12.7	12.7	100	100	100	50	75	1.8	1.4	1.8	7	7	7	2.4	2.5	3.3	3.1
I	1240	19.9	14.8	14.8	100	100	100	100	100	2.6	2	2.1	1.3	1.7	1.7	1.9	1.6	1.8	2
J	1395	22.7	15.7	15.7	100	100	100	100	100	1.5	1.9	1.5	1.3	1.3	2.4	2.2	3.2	3	3.4
K	1550	25.7	16.2	16.2	100	100	100	100	100										

SFAM Proximal Area Assessment (PAA) Field Data Form **Version 1.1** **Assessment Timing:** Predicted conditions

Project Area Name: Dairy Creek Mitigation Bank Date: NA- Predicted 10 Years after cc Assessor: Moiel

Print this form to take to the field. Only the defined print area is needed (i.e. not the data calculation columns). After collecting data in the field, transfer data into the Excel worksheet below using drop-down menus where available. Cells in the "Calculations" section and on the "Functions" tab will populate automatically.

What is the longitudinal length of the PAA?	**Natural Cover (F1)**: Record densiometer readings from both left and right banks at each transect.				See F2-F4 below	**Riparian Corridor (F5):** Record the width (ft) of the riparian corridor at each PAA transect. If > 330 ft, enter 330.				**Barriers (F6):** Does a man-made structure limit fish passage (barrier, partial, passable, unknown, none)?	**Exclusion (F7):** What % of the 100-yr floodplain is excluded due to features (<=20%, >20-40%, >40-80%, >80%)?
		T1	T2	T3			T1	T2	T3		
	Left	14	14	14		Left	330	330	330	Passable	>20-40%
1050	Right					Right					

Invasive Vegetation (F2), Native Woody Vegetation (F3), and Large Trees (F4) : For each of the three vegetation classes, record the start and end positions (distance from bankfull, to the nearest 0.1ft) of each occurrence along the length of the transect. Transects run perpendicular to the stream edge, from the bankfull edge to the lateral boundary of the PAA.

What is the length of the transect (ft)?	114	Vegetation transects are conducted on both banks. If it is physically or legally unfeasible to access one side, indicate which side was surveyed by selecting Left or Right from the dropdown menu.	Left

Transect	Vegetation Class	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
1 (left)	InvVeg	0	6														
	Native WoodyVeg	0	114														
	LgTree	0	29														
1 (right)	InvVeg																
	Native WoodyVeg																
	LgTree																
2 (left)	InvVeg	0	6														
	Native WoodyVeg	0	114														
	LgTree	0	3														
2 (right)	InvVeg																
	Native WoodyVeg																
	LgTree																
3 (left)	InvVeg	0	6														
	Native WoodyVeg	0	114														
	LgTree	0	23														
3 (right)	InvVeg																
	Native WoodyVeg																
	LgTree																

Armor (F8) and Erosion (F9): Record start and end locations (ft) of bank armoring features and bank erosion evidence along the length of the PAA.

	Start	End	Start	End	Start	End	Start	End
Armoring (left)	0	0	0	0	0	0	0	0
Armoring (right)								
Erosion (left)	0	400						
Erosion (right)	0	1050						

Overbank Flow (F10): Is there evidence of overbank flow at least 0.5 × BFW from the bankfull edge? *(yes or no)*	YES

Wetland Vegetation (F11) : Are there FACW or OBL wetland plants on the banks or in the floodplain? *(yes or no)*	YES
If yes, answer the following questions: If no, enter N/A	
→ Are any located > 0.5 × BFW from the bankfull edge?	YES
→ …for more than 70% of the PAA length?	YES

STREAM FUNCTION ASSESSMENT METHOD for OREGON

Version 1.1 (April 2020)

Name of Project Area:	Dairy Creek Mitigation Bank	**Date of Field Assessment:**	3/18/2021	**Latitude*:**	45.6206
Data Collector:	Moiel, Harburg	**Elevation:** (SFAM Report)	190 ft	**Longitude*:**	-123.1213
				** near center of the project site*	
Project Number:		**Project Area Length (feet):**	700	**Project Area (acres):**	
Assessment timing:	Current conditions	**Photo Numbers:**			

What is the Oregon Stream Classification for the project area? Select from drop-down menu. Refer to the SFAM Report. If the project area spans more than one reach, describe the dominant stream classification.	Mountain Wet Rain/Valley Wet

What ratings does the Oregon Stream Classification identify for the following measures in the local hydrologic unit? Refer to the SFAM Report. If project area spans more than one reach, describe the dominant classification:

Aquifer Permeability (local)	High	Soil Permeability (local)	High	
Erodibility (local)	Difficult to Erode	Gradient*	> 6%	*If EPA Classification is different from the gradient you observe in the local reach, select the gradient in the local reach.

Is the channel perennial, intermittent, or ephemeral? (Map Viewer-NHD Flowline)	Intermittent	
Which Level III EPA Ecoregion is the site located in? (SFAM Report)	Willamette Valley	Western Mountains
Is the average width of the stream less than or greater than 50 feet? (User Input)	≤ 50 feet	Small
What is the 2 year peak flood (cfs)? (StreamStats Report)	1780	
What is the size of the drainage area (mi^2)? (StreamStats Report)	48	

External Data: List below the persons and/or agencies that provided location information on rare wildlife species, and/or rare plants, and the date the information was gathered (if known).

ORNHIC was contacted to provide ESA listed species occurance information for the project area; the ORNHIC report is attached.

Project Area History: Based on conversation with landowner/manager and other information, describe below the years and extent (% of project area) of past and present management actions (e.g., vegetation control), natural disturbances (e.g., fire, insect infestations), and human-associated disturbances (e.g., grazing regimes).

Information about the project area is included in the MBI.

Assessment Notes: Note any special features of the reach or landscape, problems with scoring, or other information that may be relevant.

This SFAM was completed on the "Straight channel" which is an intermittent side-channel off W Fork Dairy Creek. The PA was the straight channel with EAA extending into the W Fork Dairy Creek upstream and downstream of PA. EAA transects A, B, J, K are on the perennial Creek and data entered for baseline will remain the same for predicted conditions because we are trying to determine functional lift on the "Straight Channel" independently from perennial channel.

STREAM ASSESSMENT SCORES SHEET **Version 1.1** **Assessment Timing:** **Current conditions**

Project Area Name:	Dairy Creek Mitigation Bank		
Investigator Name:	Moiel, Harburg		
Date of Field Assessment:	3/18/2021		
Latitude (decimal degrees):	45.6206	Longitude (decimal degrees):	-123.1213

SPECIFIC FUNCTIONS	Function Score	Function Rating	Value Score	Value Rating
Surface Water Storage (SWS)	5.39	Moderate	6.33	Moderate
Sub/Surface Water Transfer (SST)	4.77	Moderate	0.00	Lower
Flow Variation (FV)	5.58	Moderate	6.67	Moderate
Sediment Continuity (SC)	3.28	Moderate	8.08	Higher
Sediment Mobility (SM)	3.44	Moderate	5.00	Moderate
Maintain Biodiversity (MB)	3.80	Moderate	6.63	Moderate
Create and Maintain Habitat (CMH)	3.79	Moderate	8.03	Higher
Sustain Trophic Structure (STS)	4.89	Moderate	5.48	Moderate
Nutrient Cycling (NC)	5.30	Moderate	6.76	Moderate
Chemical Regulation (CR)	5.27	Moderate	2.76	Lower
Thermal Regulation (TR)	5.44	Moderate	3.07	Moderate

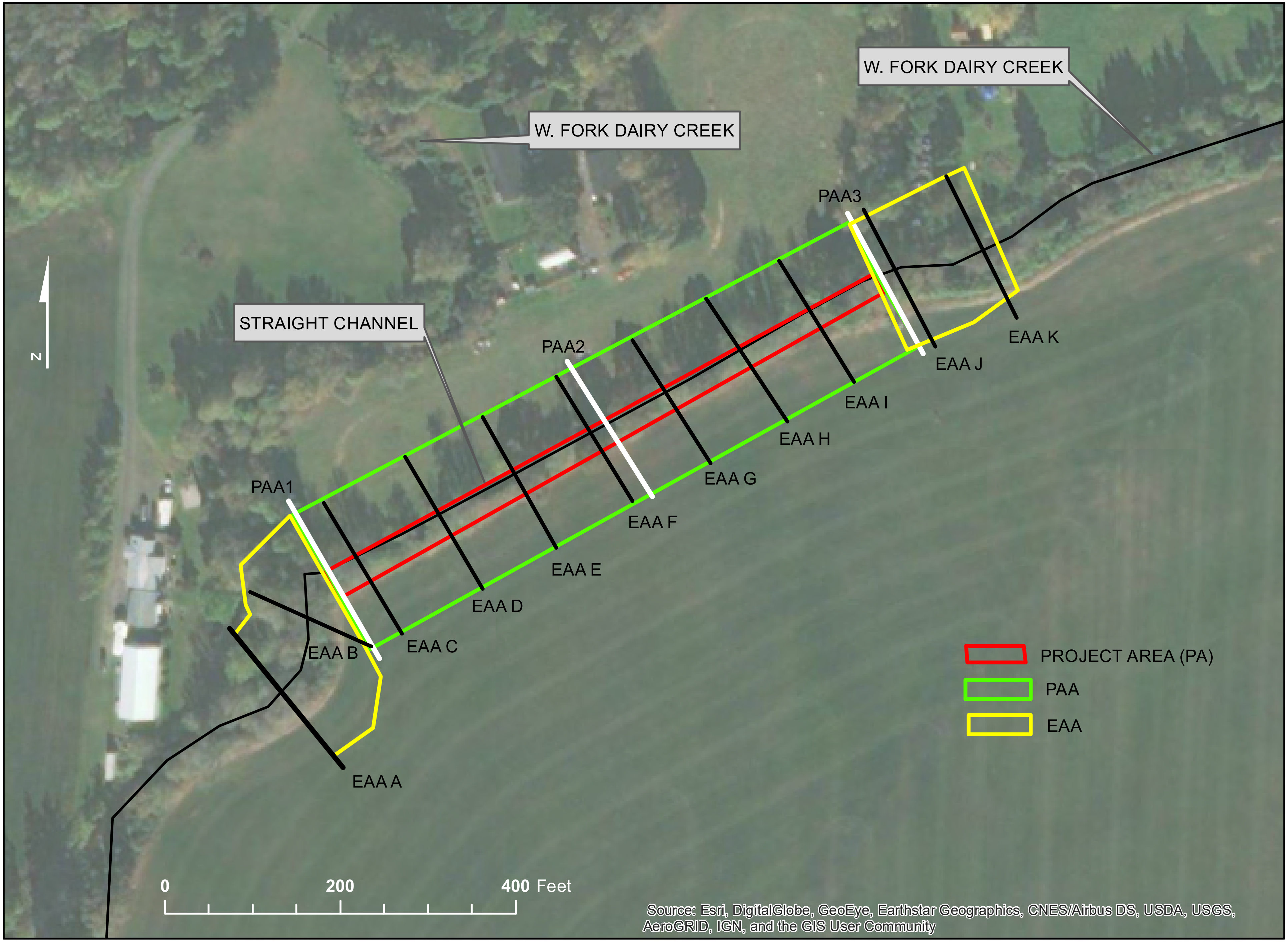
GROUPED FUNCTIONS	REPRESENTATIVE FUNCTION	Function Group Rating	Value Group Rating
Hydrologic Function (SWS, SST, FV)	Flow Variation (FV)	Moderate	Moderate
Geomorphic Function (SC, SM)	Sediment Continuity (SC)	Moderate	Higher
Biologic Function (MB, CMH, STS)	Sustain Trophic Structure (STS)	Moderate	Moderate
Water Quality Function (NC, CR, TR)	Thermal Regulation (TR)	Moderate	Moderate

Formulas for each specific function and value (shown on Subscores tab) produce a numerical score between 0.0 and 10.0. For ecological functions, a score of 0.0 indicates that negligible function is being provided by the stream whereas a score of 10.0 indicates that the stream is providing maximum function (as defined) given certain contextual factors. For values, a score of 0.0 indicates that there is low opportunity for the site to provide a specific ecological function and that, even if it did, the specific function would not be of particular significance given the context of the site. Conversely, a value score of 10.0 indicates that a site has the opportunity to provide a specific function and that it would be highly significant in that particular location. For all function and value formulas, both extents of the scoring range (0.0 and 10.0) are mathematically possible.

To facilitate conceptual understanding, numerical scores are translated into ratings of Lower, Moderate, or Higher. The numerical thresholds for each of these rating categories are consistent across all functions and values such that scores of <3.0 are rated “Lower,” scores ≥3.0 but ≤7.0 are rated “Moderate,” and scores that are >7.0 are rated “Higher.” These thresholds are consistent with the standard scoring scheme applied to all individual measures.

Each specific function, and its associated value, is included in one of four thematic groups: hydrologic, geomorphic, biologic, and water quality functions. Group ratings provide an indication of the degree to which each group of processes is present at a site. Groups are represented by the highest-rated function with the highest-rated associated value among the 2-3 functions that comprise each group. This hierarchical selection system ensures that thematic functional groups are represented by the highest-performing and highest-valued ecological function.

STREAM FUNCTIONAL ASSESSMENT (SFAM) MAP **INTERMITTENT STRAIGHT CHANNEL**



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

greenbanks

OREGON EXPLORER

Stream Function Assessment Method (SFAM) Report

Report Generated: September 26, 2020 11:18 AM

Location Information

Latitude	45.6206 N	Longitude	-123.1213 W
Elevation	190 ft	Level III Ecoregion	Willamette Valley
HUC8	17090010 Tualatin		
HUC10	1709001003 Dairy Creek		
HUC12	170900100302 Middle West Fork Dairy Creek		
Linear ft of stream in HUC8	2,548,889	Annual precipitation	43 in

Stream Type and Classifications

Stream Classification	Mountain Wet Rain / Valley Wet	Percent of project area	100.00%
Aquifer permeability	High	Soil permeability	High
Gradient	>6%	Erodibility	Difficult_to_Erode

Stream classifications and associated attributes are derived from a U.S. Environmental Protection Agency stream classification geospatial data layer developed for Oregon (2015). This layer provides a statewide stream/watershed classification system for streams and rivers of various sizes, based in part on a hydrologic landscape classification system.

Stream Function Assessment Method (SFAM) Report

Report Generated: September 26, 2020 11:18 AM

Rare Species Scores and Special Habitat Designations

Rare Species Type	Maximum score	Sum Score	Rating
Non-anadromous Fish Species	0	0	None
Amphibian & Reptile Species	0	0	None
Feeding Waterbirds	0	0	None
Songbirds, Raptors, and Mammals	0	0	None
Invertebrate Species	0	0	None
Plant Species	0	0	None

Scores have taken into account several factors for each rare species record contained in the official database of the Oregon Biodiversity Information Center (ORBIC): (a) the regional rarity of the species, (b) their proximity to the point of interest, and (c) the "certainty" that ORBIC assigns to each of those records.

Within 300 ft of a Special Protected Area?	No
Within a HUC12 that has designated Essential Salmonid Habitat?	Yes
Within 2 miles of an Important Bird Area?	Yes

Water Quality Impairments

West Fork Dairy Creek	
Status	Impairment
Cat 4A: Water quality limited, TMDL approved	Phosphorus
Cat 4A: Water quality limited, TMDL approved	Temperature
Cat 4A: Water quality limited, TMDL approved	Dissolved Oxygen
Cat 4A: Water quality limited, TMDL approved	E. Coli

Water quality information is derived from Oregon's 2012 Integrated Report, including the list of water quality limited waters needing Total Maximum Daily Loads (303d List). Each record in the report is assigned an assessment category based on an evaluation of water quality information. Categories included in the SFAM Report are:
Category 5: Water is water quality limited and a TMDL is needed; Section 303(d) list.

Report Generated: September 26, 2020 11:18 AM

Category 4: Water is impaired or threatened but a TMDL is not needed because: (A) the TMDL is approved, (B) other pollution requirements are in place, or (C) the impairment (such as flow or lack of flow) is not caused by a pollutant.
Category 3B: Water quality is of potential concern; some data indicate non-attainment of a criterion, but data are insufficient to assign another category.

Dominant soil type(s)			
Soil Type	Erosion Hazard Rating	Hydric Rating	Percent Area
McBee silty clay loam	Slight	Yes	87.45%
Wapato silty clay loam	Slight	Yes	12.55%

This report contains both centroid-based and polygon-based data. The Location Information section of the report contains centroid-based data (determined by the center point of the polygon), while the remaining sections are polygon-based (determined from the entire polygon).

SFAM Site Layout Field Data Form **Version 1.1** **Assessment Timing:** Current conditions

Project Area Name: Dairy Creek Mitigation Bank Date: 3/18/2021 Assessor: Moiel, Harburg

Print this form to take to the field, along with the PAA and EAA field forms. Use the instructions, measurements, and diagrams on this form to establish the two assessment areas necessary for data collection.

Project Area Description:

Dairy Creek Mitigation Bank "Straight Channel" baseline assessment. See MBI for project area description.

Is there a Floodplain?

Yes, much of project area is within the floodplain and stream is disconnected from floodplain.

Establishing the boundaries of the Proximal Assessment Area (PAA):

a) Identify the spatial extent of direct impact.

b) Establish the longitudinal boundaries of the PAA at the upstream and downstream extent of the impact, or 50ft of stream length, whichever is greater.

c) Locate the center of the PAA and measure the bankfull channel width (BFW).

d) At two additional locations, equidistant between the PAA center and the PAA upper and lower boundaries, measure BFW. PAA transects will be located at the 3 locations where BFW was measured.

e) Establish the lateral boundaries of the PAA at a distance of 2 × the average BFW or 50’ from the stream edge (bankfull edge), whichever is greater, on each side of the stream.

Total PAA stream length (ft) =	700
Distance between transects (PAA length ÷ 4) =	175
PAA lateral boundary (2 × avg bankfull width (calculated below) or 50 feet =	60

Bankfull Width:			
Transect	Location	Width (ft)	Average
T1	PAA1	30	30
T2	PAA2	32	
T3	PAA3	28	

	Latitude	Longitude
Corner 1		
Corner 2		
Corner 3		
Corner 4		

Establishing the boundaries of the Extended Assessment Area (EAA):

a) The EAA is an upstream and downstream extension of the PAA. Establish the longitudinal boundaries by multiplying the average BFW by 5 and measuring that distance upstream and downstream from the PAA upper and lower boundaries, respectively.

b) The lateral boundaries of the EAA are the same distance from the stream edge (bankfull) as the lateral boundaries for the PAA (above). Note that the EAA contains the entire PAA.

c) Locate the 11 EAA transect locations by dividing the total EAA length by 10. The distance between each transect is 0.1 × the total EAA length. Transects include the upper and lower EAA boundaries.

Length EAA extends above/below PAA (5 × average BFW) =	150
Total EAA length (10 × BFW + PAA length, rounded to nearest 10') =	1000
Distance between EAA transects (EAA length ÷ 10) =	100

	Latitude	Longitude
Corner 1		
Corner 2		
Corner 3		
Corner 4		

SFAM Proximal Area Assessment (PAA) Field Data Form **Version 1.1** **Assessment Timing:** Current conditions

Project Area Name: Dairy Creek Mitigation Bank Date: 3/18/2021 Assessor: Moiel, Harburg

Print this form to take to the field. Only the defined print area is needed (i.e. not the data calculation columns). After collecting data in the field, transfer data into the Excel worksheet below using drop-down menus where available. Cells in the "Calculations" section and on the "Functions" tab will populate automatically.

What is the longitudinal length of the PAA?	**Natural Cover (F1)**: Record densiometer readings from both left and right banks at each transect.				See F2-F4 below	**Riparian Corridor (F5):** Record the width (ft) of the riparian corridor at each PAA transect. If > 330 ft, enter 330.				**Barriers (F6):** Does a man-made structure limit fish passage (barrier, partial, passable, unknown, none)?	**Exclusion (F7):** What % of the 100-yr floodplain is excluded due to features (<=20% >20-40%, >40-80%, >80%)?
		T1	T2	T3			T1	T2	T3		
	Left	12	15	13		Left	20	19	27	Passable	>40-80%
700	Right					Right					

Invasive Vegetation (F2), Native Woody Vegetation (F3), and Large Trees (F4) *:* For each of the three vegetation classes, record the start and end positions (distance from bankfull, to the nearest 0.1ft) of each occurrence along the length of the transect. Transects run perpendicular to the stream edge, from the bankfull edge to the lateral boundary of the PAA.

What is the length of the transect (ft)?	60	Vegetation transects are conducted on both banks. If it is physically or legally unfeasible to access one side, indicate which side was surveyed by selecting Left or Right from the dropdown menu.	Left

Transect	Vegetation Class	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
1 (left)	InvVeg	7	7.5														
	Native WoodyVeg	0	0														
	LgTree	0	0														
1 (right)	InvVeg																
	Native WoodyVeg																
	LgTree																
2 (left)	InvVeg	0	9														
	Native WoodyVeg	0	39														
	LgTree	0	39														
2 (right)	InvVeg																
	Native WoodyVeg																
	LgTree																
3 (left)	InvVeg	14	18														
	Native WoodyVeg	0	0														
	LgTree	0	27														
3 (right)	InvVeg																
	Native WoodyVeg																
	LgTree																

Armor (F8) and Erosion (F9): Record start and end locations (ft) of bank armoring features and bank erosion evidence along the length of the PAA.

	Start	End	Start	End	Start	End	Start	End
Armoring (left)	205	530						
Armoring (right)								
Erosion (left)	0	700						
Erosion (right)	0	700						

Overbank Flow (F10): Is there evidence of overbank flow at least 0.5 × BFW from the bankfull edge? *(yes or no)*	YES

Wetland Vegetation (F11): Are there FACW or OBL wetland plants on the banks or in the floodplain? *(yes or no)*	YES
If yes, answer the following questions: If no, enter N/A	
→ Are any located > 0.5 × BFW from the bankfull edge?	NO
→ ...for more than 70% of the PAA length?	NO

SFAM Extended Area Assessment (EAA) Field Data Form **Version 1.1** **Assessment Timing:** Current conditions

Project Area Name: Dairy Creek Mitigation Bank Date: 3/18/2021 Assessor: Moiel, Harburg

Print this form to take to the field. Only the defined print area is needed (i.e. not the data calculation columns). After collecting data in the field, transfer data into the Excel worksheet below using drop-down menus where available. Cells in the "Calculations" section and on the "Functions" tab will populate automatically.

What is the total longitudinal length of the EAA (ft)?	1000

Wood (F14): Tally each piece of wood along the EAA that measures > 4" diameter and is at least 5' long. You can record the location of the wood to avoid double counting.

Total = 20

Side Channels (F12) and Lateral Migration (F13): Record start and end locations (ft) of adjacent side channels and evidence of constraints to lateral migration along the length of the EAA.

	Start	End	Start	End	Start	End	Start	End	Start	End
Side channels (either side)										
Constraints to lateral migration (left)	0	700								
Constraints to lateral migration (right)										

Unique Features (V16): Note the presence of any unique habitat features throughout the EAA including, but not limited to: log jams, braided channels, >30% wetlands in floodplain, springs, seeps, cold water inputs, etc.

1 small log jam with 2 logs and a couple small branches.

		Wetted Width (F17)	**Incision (F15)**		**Substrate Embeddedness (F16)**					**Thalweg Depth (F17)**									
		Record width and height at each cross-channel transect (round to nearest 0.1 ft).			Record % embeddedness (to the nearest quartile: 0, 25, 50, 75, 100) at 5 equidistant points along each cross-channel transect.					Record the thalweg depth at 10 equidistant points between each cross-channel transect while moving upstream.									
EAA Transect	Feet from EAA lower boundary	Wetted width	Bankfull height	Lowest floodplain height	Embed1	Embed2	Embed3	Embed4	Embed5	Depth1	Depth2	Depth3	Depth4	Depth5	Depth6	Depth7	Depth8	Depth9	Depth10
A	0	23	12.5	12.5	100	100	100	100	100	1.6	2	2.1	3.6	1.8	1.5	1.4	1.7	2.2	2.3
B	100	24.6	12.7	12.7	100	100	100	50	100	1.8	1.4	1.8	7	7	7	2.4	2.5	3.3	3.1
C	200	14	11.1	12.3	100	100	100	100	100	3.1	3	2.8	2.6	2.3	1.7	1.3	2.1	2.5	2.4
D	300	11	13	14.5	100	100	100	100	100	2.9	2.9	2.8	2.6	2.9	2	2.8	2.5	2	1.2
E	400	10	11.5	12.9	100	100	100	100	100	2.1	1.6	2.4	2.5	2	2.2	2.5	2.3	1.6	1.8
F	500	9	11.8	13.6	100	100	100	100	100	2.6	4.7	4.9	4.9	2.6	2.5	1.8	3.7	3.9	3
G	600	7	10	12.1	100	100	100	100	100	3.2	1.8	1.2	2	1.9	2	2.9	1.9	1.2	1.1
H	700	11	10.2	11.9	100	100	100	100	100	1.2	1.2	1.2	1.8	1.2	1.1	1.1	1.3	2.2	1.2
I	800	13.5	9.8	11.5	100	100	100	100	100	1.5	1.7	1.8	1.9	1.4	1.4	2	1.8	1.8	2
J	900	19.9	14.8	14.8	100	100	100	100	100	2.6	2	2.1	1.3	1.7	1.7	1.9	1.6	1.8	2
K	1000	22.7	15.7	15.7	100	100	100	100	100										

STREAM FUNCTION ASSESSMENT METHOD for OREGON

Name of Project Area:	Dairy Creek Mitigation Bank	Assessment Timing:	Current conditions	Enter Data in These Boxes ONLY Scores Automatically Calculated in Green Boxes

VALUES MEASURES TABLE

FILL IN THE YELLOW BOXES. Most questions contain drop-down menus in their respective answer box. Select an answer from the drop-down menus, when possible, instead of typing an answer.

Measure	Function Groups	Submeasure	Measure Abbreviation	Qualifiers		Data Entry			Measure Score
V1 **Rare Species Occurrence & Special Habitat Designations**	**Are there rare species or special habitat designations in the vicinity of the PA ?** Answer each submeasure using information from the site's SFAM report (rare species scores & special habitat designations section), as well as any available survey data for the PA and its vicinity, or personal knowledge about the site. Note: The SFAM Report provides rankings of High, Intermediate, Low, or None for each category of rare species associated with aquatic and riparian habitat. Upgrade a ranking to High if there is a recent (within 5 years) onsite observation of any of these species by a qualified observer under conditions similar to what now occur. Provide references in the external notes section of the cover page. *Values informed: Surface Water Storage, Flow Variation, Substrate Mobility, Maintain Biodiversity, Sustain Trophic Structure, Nutrient Cycling, Chemical Regulation, Thermal Regulation*								
	Essential salmonid habitat or rare non-anadromous fish species:								
	Hydrology, Geomorphology, Biology, Water Quality	Fish	Fish		Is the PA within a HUC12 that has designated Essential Salmonid Habitat (ESH)? Select yes or no.	Yes			1.00
					According to the site's SFAM Report, what is the "non-anadromous fish" score? Select an answer from the dropdown menu:	None/Not Known			
	Rare amphibian and reptile species:								
	Hydrology, Geomorphology, Biology, Water Quality	Rare Amphibians and Reptiles	RarAmRep		According to the site's SFAM Report, what is the "amphibian and reptile" score? Select an answer from the dropdown menu:	None/Not Known			0.00
	Important Bird Areas or rare waterbirds:								
	Biology, Water Quality	Waterbirds	Waterbird		Is there an Important Bird Area (IBA) within a 2-mile radius of the PA?	Yes			1.00
					According to the site's SFAM Report, what is the "feeding waterbird" score? Select an answer from the dropdown menu:	None/Not Known			
	Rare songbirds, raptors, and mammals:								
	Biology, Water Quality	Rare Bird and Mammals	RarBdMm		According to the site's SFAM Report, what is the "songbird, raptor and mammal" score? Select an answer from the dropdown menu:	None/Not Known			0.00
	Rare invertebrate species:								
	Hydrology, Geomorphology, Biology, Water Quality	Rare Invertebrates	RarInvert		According to the site's SFAM Report, what is the "invertebrates" score? Select an answer from the dropdown menu:	None/Not Known			0.00
	Rare plant species:								
	Geomorphology, Biology, Water Quality	Rare Plants	RarPlant		According to the site's SFAM Report, what is the "plant" score? Select an answer from the dropdown menu:	None/Not Known			0.00
V2 **Water Quality Impairments**	**Is this reach on the 303(d) list or other TMDL (Categories 3B-5) for any of the following impairments: sediment, nutrient, metals & toxics, temperature, or flow modification?** Answer each submeasure using information from the site's SFAM Report (water quality impairments section). *Values informed: Flow Variation, Sediment Continuity, Create & Maintain Habitat, Sustain Trophic Structure, Nutrient Cycling, Chemical Regulation, Thermal Regulation*								
	Sediment impairment: total suspended solids (TSS), sedimentation, or turbidity (note that some sedimentation can be naturally occurring and desirable therefore does not constitute a problem)								
	Geomorphology, Water Quality	Sedimentation	SedList		Select yes or no from the dropdown menu:	Yes			1.00
	Nutrient impairment: phosphorus, nitrate, ammonia, DO, aquatic weeds or algae, chlorophyll a, etc.; or untreated stormwater/wastewater discharge occurs within 500 feet of the reach								
	Biology, Water Quality	Nutrient Impairment	NutrImp		Select yes or no from the dropdown menu:	Yes			1.00
	Metals or other toxics impairment: toxics, dioxin, heavy metals (iron, manganese, lead, zinc, etc.); or untreated stormwater/wastewater discharge occurs within 500 feet of the reach								
	Water Quality	Metals & Toxics Impairment	ToxImp		Select yes or no from the dropdown menu:	No			0.00
	Temperature impairment:								
	Biology, Water Quality	Temperature Impairment	TempImp		Select yes or no from the dropdown menu:	Yes			1.00
	Flow modification:								
	Hydrology, Biology	Flow Modification	FlowMod		Select yes or no from the dropdown menu:	No			0.00

V3 **Protected Areas**	**Is the PA boundary within 300 feet of a special protected area?** Answer using information from the site's SFAM Report (Within 300 feet of a Special Protected Area) as well as other available data for the PA and its vicinity. Note: The SFAM Report evaluates whether BLM Areas of Critical Environmental Concern (ACEC) or Outstanding Natural Areas (ONA), federal Research Natural Areas (RNA) or Special Interest Areas (SIA), Natural Heritage Conservation Areas (NHCA), and Land Trust and Nature Conservancy Preserves are within 300 feet of the PA. If there are other lands within 300 feet of the site that are protected specifically for their high ecological significance, select yes and provide references in the assessment notes section of the cover page. *Values informed: Maintain Biodiversity, Sustain Trophic Structure*								
	Biology		Protect		Select yes or no from the dropdown menu:	No			0.00
V4 **Impervious Area**	**What is the percent impervious area in the drainage basin?** Answer using information from the site's StreamStats Report (IMPERV). *Values informed: Surface Water Storage, Flow Variation, Sediment Continuity, Substrate Mobility, Create & Maintain Habitat, Sustain Trophic Structure, Nutrient Cycling, Chemical Regulation, Thermal Regulation*								
	Hydrology, Geomorphology, Biology, Water Quality		ImpArea		<10%, select A; 10-25%, select B; >25-60%, select C; >60%, select D.	A			0.00
V5 **Riparian Area**	**What is the percentage of intact riparian area within 2 miles upstream of the PA ?** Intact refers to a riparian area with forest or otherwise unmanaged (i.e. natural) perennial cover appropriate for the basin that is at least 15 ft wide on both sides of the channel. Unmanaged perennial cover is vegetation that includes wooded areas, native prairies, sagebrush, vegetated wetlands, as well as relatively unmanaged commercial lands in which the ground and vegetation is disturbed less than annually, such as lightly grazed pastures, timber harvest areas, and rangeland. It does not include water, pasture, row crops (e.g., vegetable, orchards, Christmas tree farms), lawns, residential areas, golf courses, recreational fields, pavement, bare soil, rock, bare sand, or gravel or dirt roads. *Values informed: Create & Maintain Habitat, Sustain Trophic Structure, Nutrient Cycling, Chemical Regulation, Thermal Regulation*								
	Biology, Water Quality		RipArea		If >50% select A. If >35-50%, select B. If 15-35%, select C. If <15%, select D.	B			0.70
V6 **Extent of Downstream Floodplain Infrastructure**	**What is the extent of infrastructure (buildings, bridges, utilities, row crops) in the floodplain ?** Consider the floodplain area between the PA and either the next largest water body (large tributary, mainstem junction, lake, etc.) or 2 miles downstream, whichever is less. *Values informed: Surface Water Storage, Sediment Continuity, Create & Maintain Habitat, Sustain Trophic Structure*								
	Hydrology, Geomorphology, Biology		DwnFP		If >50% of total area, select A. If 1-50% of total area, select B. If none, select C. If not known or the downstream floodplain is not mapped, select D.	B			0.50
V7 **Zoning**	**What is the dominant zoned land use designation downstream of the PA?** Consider the floodplain area between the PA and either the next largest water body (larger tributary, mainstem junction, lake, etc.) or 2 miles downstream, whichever is less. *Values informed: Surface Water Storage, Create & Maintain Habitat, Sustain Trophic Structure*								
	Hydrology, Biology		Zoning		If developed (commercial, industrial, residential, etc.), select A. If agriculture or rural residential, select B. If forest, open space, or public lands, select C. If not zoned or no information, select D.	B			0.50
V8 **Frequency of Downstream Flooding**	**What is the frequency of downstream flooding?** Consider the floodplain area between the PA and either the next largest water body or 2 miles, whichever is less. Determine the frequency of flooding downstream of the PA that affects infrastructure (i.e. affects use of the site or causes economic loss). *Values informed: Surface Water Storage*								
	Hydrology		DwnFld		If frequent (several times a year), select A. If moderate (up to once a year), select B. If infrequent (only large events), select C. If never or not known, select D.	C			0.30

V9

Impoundments

<u>What is the prevalence of impoundments within 2 miles upstream and downstream of the PA that are likely to cause shifts in timing or volume of water?</u>
The shift may be by hours, days, or weeks, becoming either more muted (smaller or less frequent peaks spread over longer times, more temporal homogeneity of flow or water levels) or more flashy (larger or more frequent spikes but over shorter times). For each category, select yes or no from the dropdown menu.

Values informed: Surface Water Storage, Flow Variation, Sediment Continuity, Substrate Mobility, Create & Maintain Habitat; Functions informed: Flow Variation

Hydrology, Geomorphology, Biology		Impound		Are there 1-2 small dams or other impoundments **<u>upstream</u>** of the PA?	No	Upstream impoundments subscore:	1.00
				Are there >2 small impoundments, 1 or more large dams or other impoundments **<u>upstream</u>** of the PA?	No		
				Are there 1-2 small dams or other impoundments **<u>downstream</u>** of the PA?	No	Downstream impoundments subscore:	1.00
				Are there >2 small impoundments, 1 or more large dams or other impoundments **<u>downstream</u>** of the PA?	No		

V10

Fish Passage Barriers

<u>Are there man-made fish passage barriers within 2 miles upstream and/or downstream of the PA ?</u>
Select an answer from the drop-down menu for each of the upstream and downstream directions. If more than one barrier is present, answer for the one with the most restricted level of passage (e.g. Blocked). Do not include natural barriers.

Values informed: Maintain Biodiversity, Sustain Trophic Structure

Biology		Passage	Slope barrier	Upstream	Unknown	1.00		1.00
				Downstream	Unknown	1.00		

V11

Water Source

<u>Is there an area that is of special concern for drinking water sources or groundwater recharge within 2 miles downstream of the PA?</u>
This includes any of the following: the source area for a surface-water drinking water source; the source area for a groundwater drinking water source; a designated Groundwater Management Area; a designated Sole Source Aquifer.

Values informed: Sub/Surface Transfer, Nutrient Cycling, Chemical Regulation

Hydrology, Water Quality		Source		Select yes or no from the dropdown menu:	No			0.00

V12

Surrounding Land Cover

<u>What are the land cover types surrounding the PA?</u>
Draw a 2 mile radius around the PA. Provide an estimate of the percentage of area within the resulting polygon that matches each land cover description. Enter 0% if none. Enter 1% if barely present. Must sum to 100%.

Values informed: Maintain Biodiversity, Sustain Trophic Structure

Biology		SurrLand		Unmanaged vegetation (wetland, native grassland, forest) or water	20	× 1.00	20.00	0.48
				Managed vegetation (pasture, regularly watered lawn (i.e. park), row crops, orchards)	55	× 0.50	27.50	
				None of the above (including bare areas [dirt, rock], roads, energy facilities, residential, commercial, industrial)	25	× 0.00	0.00	
				SUM	100			

V13

Riparian Continuity

<u>What is the longitudinal extent of intact riparian area that is contiguous to the PA?</u>
Select the longest length of contiguous riparian corridor in either the upstream or downstream direction, but do not include the PA length itself.

Intact refers to a riparian area with forest or otherwise managed (i.e. natural) perennial cover appropriate for the basin that is at least 15 ft wide on both sides of the channel. Contiguous means there are no > 100 ft gaps in forested cover or unmanaged perennial cover. Unmanaged perennial cover is vegetation that includes wooded areas, native prairies, sagebrush, vegetated wetlands, as well as relatively unmanaged commercial lands in which the ground and vegetation is disturbed less than annually, such as lightly grazed pastures, timber harvest areas, and rangeland. It does not include water, pasture, row crops (e.g., vegetable, orchards, Christmas tree farms), lawns, residential areas, golf courses, recreational fields, pavement, bare soil, rock, bare sand, or gravel or dirt roads.

Values informed: Maintain Biodiversity, Create & Maintain Habitat, Sustain Trophic Structure, Nutrient Cycling, Chemical Regulation, Thermal Regulation

Biology, Water Quality		RipCon		If <100 feet, select A. If 100-500 feet, select B. If >500 feet, select C.	C			1.00

V14

Watershed Position

<u>What is the relative position of the PA in its HUC 8 watershed?</u>
Answer this question looking at position of the PA releative to the 8-digit HUC layer.
• If the PA is (a) closer to the watershed's outlet than its upper end and (b) closer to the large stream/river exiting the watershed's outlet than it is to the boundary of the watershed, select "lower 1/3."
• If the PA is (a) closer to the watershed's upper end than its outlet and (b) closer to the watershed's boundary than its large stream/river, select "upper 1/3."
• If neither of the above conditions are met, select "middle 1/3."

Values informed: Sediment Continuity, Nutrient Cycling, Chemical Regulation

Geomorphology, Water Quality		Position		Select an answer from the dropdown menu:	Upper 1/3			0.00

V15 **Flow Restoration Needs**	**What is the "streamflow restoration need" ranking of the watershed within which the PA is located?** Answer this question using the Flow Restoration Needs layer in the SFAM Map Viewer. *Values informed: Flow Variation, Create & Maintain Habitat*								
	Hydrology, Biology		FlowRest		Select an answer from the dropdown menu:	High or Highest			1.00
V16 **Unique Habitat Features**	**Are there rare aquatic habitat features within the EAA that are not common to the rest of the drainage basin ?** For each feature type, select yes or no from the dropdown menu. This question must be answered in the field, but the user can check for any mapped wetlands or seeps, springs, or tributaries in the office using the Oregon Wetlands Cover, Springs, and the Flowline layers, respectively. *Values informed: Substrate Mobility, Maintain Biodiversity, Create & Maintain Habitat, Sustain Trophic Structure, Thermal Regulation*								
	Geomorphology, Biology		HabFeat		Large log jams that span 25% or more of the active channel width?	Yes		Overall HabFeat score	0.50
					Braided channel or otherwise multiple channels resulting in islands?	No			
					Large spatial extent (>30%) of wetlands in the floodplain?	No		Substrate subscore	0.00
					Seeps, springs, or tributaries contributing colder water?			Thermal subscore	0.00
Already in Stream Classification on Cover Page - NO DATA INPUT REQUIRED.									
Surface Water Runoff	**What is the level of surface water runoff (based on local water availability and local gradient)?** No data input necessary, information taken from EPA classification (stream type & gradient).								
	Hydrology		Runoff						1.00
Aquifer Permeability	**What is the permeability of the aquifer (determined by percent permeable bedrock based on hydraulic conductivity m/day)?** No data input necessary, information taken from EPA classification.								
	Hydrology		AqPerm			High			0.00
Soil Permeability	**What is the permeability of the soil (based on hydraulic conductivity in cm/hr)?** No data input necessary, information taken from EPA classification.								
	Hydrology		SoilPerm			High			0.00
Erodibility	**What is the erodibility of this reach?** No data input necessary, information taken from EPA classification.								
	Geomorphology		Erode			Difficult to Erode			0.75

STREAM FUNCTION ASSESSMENT METHOD for OREGON

Version 1.1 (April 2020)

Name of Project Area:	Dairy Creek Mitigation Bank	**Date of Field Assessment:**	NA- predicted 10 years	**Latitude*:**	45.6206
Data Collector:	Moiel, Harburg	**Elevation:** (SFAM Report)	190 ft	**Longitude*:**	-123.1213
					** near center of the project site*
Project Number:		**Project Area Length (feet):**	700	**Project Area (acres):**	
Assessment timing:	Predicted conditions	**Photo Numbers:**			

What is the Oregon Stream Classification for the project area? Select from drop-down menu. Refer to the SFAM Report. If the project area spans more than one reach, describe the dominant stream classification.				Mountain Wet Rain/Valley Wet
What ratings does the Oregon Stream Classification identify for the following measures in the local hydrologic unit? Refer to the SFAM Report. If project area spans more than one reach, describe the dominant classification:				
Aquifer Permeability (local)	High	Soil Permeability (local)	High	
Erodibility (local)	Difficult to Erode	Gradient*	> 6%	*If EPA Classification is different from the gradient you observe in the local reach, select the gradient in the local reach.

Is the channel perennial, intermittent, or ephemeral? (Map Viewer-NHD Flowline)	Intermittent	
Which Level III EPA Ecoregion is the site located in? (SFAM Report)	Willamette Valley	Western Mountains
Is the average width of the stream less than or greater than 50 feet? (User Input)	≤ 50 feet	Small
What is the 2 year peak flood (cfs)? (StreamStats Report)	1780	
What is the size of the drainage area (mi^2)? (StreamStats Report)	48	

External Data: List below the persons and/or agencies that provided location information on rare wildlife species, and/or rare plants, and the date the information was gathered (if known).

ORNHIC was contacted to provide ESA listed species occurance information for the project area; the ORNHIC report is attached.

Project Area History: Based on conversation with landowner/manager and other information, describe below the years and extent (% of project area) of past and present management actions (e.g., vegetation control), natural disturbances (e.g., fire, insect infestations), and human-associated disturbances (e.g., grazing regimes).

Information about the project area is included in the MBI.

Assessment Notes: Note any special features of the reach or landscape, problems with scoring, or other information that may be relevant.

This SFAM was completed for predicted conditions on the "Straight channel" which is an intermittent side-channel off W Fork Dairy Creek. The PA was the straight channel with EAA extending into the W Fork Dairy Creek upstream and downstream of PA. EAA transects A, B, J, K are on the perennial Creek and data entered for baseline will remain the same for predicted conditions because we are trying to determine functional lift on the "Straight Channel" independently from perennial channel.

STREAM ASSESSMENT SCORES SHEET **Version 1.1** **Assessment Timing:** **Predicted conditions**

Project Area Name:	Dairy Creek Mitigation Bank		
Investigator Name:	Moiel, Harburg		
Date of Field Assessment:	NA- predicted 10 years		
Latitude (decimal degrees):	45.6206	Longitude (decimal degrees):	-123.1213

SPECIFIC FUNCTIONS	**Function Score**	**Function Rating**	**Value Score**	**Value Rating**
Surface Water Storage (SWS)	7.52	Higher	6.33	Moderate
Sub/Surface Water Transfer (SST)	8.76	Higher	0.00	Lower
Flow Variation (FV)	5.07	Moderate	6.67	Moderate
Sediment Continuity (SC)	7.17	Higher	8.08	Higher
Sediment Mobility (SM)	5.06	Moderate	5.00	Moderate
Maintain Biodiversity (MB)	7.19	Higher	6.63	Moderate
Create and Maintain Habitat (CMH)	6.48	Moderate	8.03	Higher
Sustain Trophic Structure (STS)	8.52	Higher	5.48	Moderate
Nutrient Cycling (NC)	8.31	Higher	6.76	Moderate
Chemical Regulation (CR)	8.76	Higher	2.76	Lower
Thermal Regulation (TR)	6.55	Moderate	3.07	Moderate

GROUPED FUNCTIONS	**REPRESENTATIVE FUNCTION**	**Function Group Rating**	**Value Group Rating**
Hydrologic Function (SWS, SST, FV)	Sub/Surface Water Transfer (SST)	Higher	Lower
Geomorphic Function (SC, SM)	Sediment Continuity (SC)	Higher	Higher
Biologic Function (MB, CMH, STS)	Sustain Trophic Structure (STS)	Higher	Moderate
Water Quality Function (NC, CR, TR)	Nutrient Cycling (NC)	Higher	Moderate

Formulas for each specific function and value (shown on Subscores tab) produce a numerical score between 0.0 and 10.0. For ecological functions, a score of 0.0 indicates that negligible function is being provided by the stream whereas a score of 10.0 indicates that the stream is providing maximum function (as defined) given certain contextual factors. For values, a score of 0.0 indicates that there is low opportunity for the site to provide a specific ecological function and that, even if it did, the specific function would not be of particular significance given the context of the site. Conversely, a value score of 10.0 indicates that a site has the opportunity to provide a specific function and that it would be highly significant in that particular location. For all function and value formulas, both extents of the scoring range (0.0 and 10.0) are mathematically possible.

To facilitate conceptual understanding, numerical scores are translated into ratings of Lower, Moderate, or Higher. The numerical thresholds for each of these rating categories are consistent across all functions and values such that scores of <3.0 are rated "Lower," scores ≥3.0 but ≤7.0 are rated "Moderate," and scores that are >7.0 are rated "Higher." These thresholds are consistent with the standard scoring scheme applied to all individual measures.

Each specific function, and its associated value, is included in one of four thematic groups: hydrologic, geomorphic, biologic, and water quality functions. Group ratings provide an indication of the degree to which each group of processes is present at a site. Groups are represented by the highest-rated function with the highest-rated associated value among the 2-3 functions that comprise each group. This hierarchical selection system ensures that thematic functional groups are represented by the highest-performing and highest-valued ecological function.

SFAM Site Layout Field Data Form **Version 1.1** **Assessment Timing:** Predicted conditions

Project Area Name: Dairy Creek Mitigation Bank Date: NA- predicte Assessor: Moiel, Harburg

Print this form to take to the field, along with the PAA and EAA field forms. Use the instructions, measurements, and diagrams on this form to establish the two assessment areas necessary for data collection.

Project Area Description:

Dairy Creek Mitigation Bank "Straight Channel" predicted conditions assessment. See MBI for project area description.

Is there a Floodplain?

Yes, much of project area is within the floodplain and stream is disconnected from floodplain.

Establishing the boundaries of the Proximal Assessment Area (PAA):

a) Identify the spatial extent of direct impact.

b) Establish the longitudinal boundaries of the PAA at the upstream and downstream extent of the impact, or 50ft of stream length, whichever is greater.

c) Locate the center of the PAA and measure the bankfull channel width (BFW).

d) At two additional locations, equidistant between the PAA center and the PAA upper and lower boundaries, measure BFW. PAA transects will be located at the 3 locations where BFW was measured.

e) Establish the lateral boundaries of the PAA at a distance of 2 × the average BFW or 50’ from the stream edge (bankfull edge), whichever is greater, on each side of the stream.

Total PAA stream length (ft) =	700
Distance between transects (PAA length ÷ 4) =	175
PAA lateral boundary (2 × avg bankfull width (calculated below) or 50 feet =	60

Bankfull Width:			
Transect	Location	Width (ft)	Average
T1	PAA1	30	30
T2	PAA2	32	
T3	PAA3	28	

	Latitude	Longitude
Corner 1		
Corner 2		
Corner 3		
Corner 4		

Establishing the boundaries of the Extended Assessment Area (EAA):

a) The EAA is an upstream and downstream extension of the PAA. Establish the longitudinal boundaries by multiplying the average BFW by 5 and measuring that distance upstream and downstream from the PAA upper and lower boundaries, respectively.

b) The lateral boundaries of the EAA are the same distance from the stream edge (bankfull) as the lateral boundaries for the PAA (above). Note that the EAA contains the entire PAA.

c) Locate the 11 EAA transect locations by dividing the total EAA length by 10. The distance between each transect is 0.1 × the total EAA length. Transects include the upper and lower EAA boundaries.

Length EAA extends above/below PAA (5 × average BFW) =	150
Total EAA length (10 × BFW + PAA length, rounded to nearest 10') =	1000
Distance between EAA transects (EAA length ÷ 10) =	100

	Latitude	Longitude
Corner 1		
Corner 2		
Corner 3		
Corner 4		

SFAM Proximal Area Assessment (PAA) Field Data Form **Version 1.1** **Assessment Timing:** Predicted conditions

Project Area Name: Dairy Creek Mitigation Bank Date: NA- predicted 10 years Assessor: Moiel, Harburg

Print this form to take to the field. Only the defined print area is needed (i.e. not the data calculation columns). After collecting data in the field, transfer data into the Excel worksheet below using drop-down menus where available. Cells in the "Calculations" section and on the "Functions" tab will populate automatically.

What is the longitudinal length of the PAA?	**Natural Cover (F1)**: Record densiometer readings from both left and right banks at each transect.			
		T1	T2	T3
	Left	15	15	15
700	Right			

See F2-F4 below

Riparian Corridor (F5): Record the width (ft) of the riparian corridor at each PAA transect. If > 330 ft, enter 330.				**Barriers (F6):** Does a man-made structure limit fish passage (barrier, partial, passable, unknown, none)?	**Exclusion (F7):** What % of the 100-yr floodplain is excluded due to features (<=20%, >20-40%, >40-80%, >80%)?
	T1	T2	T3	Passable	>20-40%
Left	330	330	330		
Right					

Invasive Vegetation (F2), Native Woody Vegetation (F3), and Large Trees (F4) ***:*** For each of the three vegetation classes, record the start and end positions (distance from bankfull, to the nearest 0.1ft) of each occurrence along the length of the transect. Transects run perpendicular to the stream edge, from the bankfull edge to the lateral boundary of the PAA.

What is the length of the transect (ft)?	60

Vegetation transects are conducted on both banks. If it is physically or legally unfeasible to access one side, indicate which side was surveyed by selecting Left or Right from the dropdown menu.	Left

Transect	Vegetation Class	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
1 (left)	InvVeg	0	5														
	Native WoodyVeg	0	60														
	LgTree	0	0														
1 (right)	InvVeg																
	Native WoodyVeg																
	LgTree																
2 (left)	InvVeg	0	5														
	Native WoodyVeg	0	60														
	LgTree	0	29														
2 (right)	InvVeg																
	Native WoodyVeg																
	LgTree																
3 (left)	InvVeg	0	5														
	Native WoodyVeg	0	60														
	LgTree	0	37														
3 (right)	InvVeg																
	Native WoodyVeg																
	LgTree																

Armor (F8) and Erosion (F9): Record start and end locations (ft) of bank armoring features and bank erosion evidence along the length of the PAA.

	Start	End	Start	End	Start	End	Start	End
Armoring (left)	0	0						
Armoring (right)								
Erosion (left)	0	0						
Erosion (right)	0	700						

Overbank Flow (F10): Is there evidence of overbank flow at least 0.5 × BFW from the bankfull edge? *(yes or no)*	YES

Wetland Vegetation (F11): Are there FACW or OBL wetland plants on the banks or in the floodplain? *(yes or no)*	YES
If yes, answer the following questions: If no, enter N/A	
→ Are any located > 0.5 × BFW from the bankfull edge?	YES
→ …for more than 70% of the PAA length?	YES

SFAM Extended Area Assessment (EAA) Field Data Form **Version 1.1** **Assessment Timing:** Predicted conditions

Project Area Name: Dairy Creek Mitigation Bank Date: NA- predicted 10 years Assessor: Moiel, Harburg

Print this form to take to the field. Only the defined print area is needed (i.e. not the data calculation columns). After collecting data in the field, transfer data into the Excel worksheet below using drop-down menus where available. Cells in the "Calculations" section and on the "Functions" tab will populate automatically.

What is the total longitudinal length of the EAA (ft)?	1000

Wood (F14): Tally each piece of wood along the EAA that measures > 4" diameter and is at least 5' long. You can record the location of the wood to avoid double counting.

Total = 40

Side Channels (F12) and Lateral Migration (F13): Record start and end locations (ft) of adjacent side channels and evidence of constraints to lateral migration along the length of the EAA.

	Start	End	Start	End	Start	End	Start	End	Start	End
Side channels (either side)	0	1000								
Constraints to lateral migration (left)	0	0								
Constraints to lateral migration (right)										

Unique Features (V16): Note the presence of any unique habitat features throughout the EAA including, but not limited to: log jams, braided channels, >30% wetlands in floodplain, springs, seeps, cold water inputs, etc.

		Wetted Width (F17)	Incision (F15)		Substrate Embeddedness (F16)					Thalweg Depth (F17)									
		Record width and height at each cross-channel transect (round to nearest 0.1 ft).			Record % embeddedness (to the nearest quartile: 0, 25, 50, 75, 100) at 5 equidistant points along each cross-channel transect.					Record the thalweg depth at 10 equidistant points between each cross-channel transect while moving upstream.									
EAA Transect	Feet from EAA lower boundary	Wetted width	Bankfull height	Lowest floodplain height	Embed1	Embed2	Embed3	Embed4	Embed5	Depth1	Depth2	Depth3	Depth4	Depth5	Depth6	Depth7	Depth8	Depth9	Depth10
A	0	23	12.5	12.5	100	100	100	100	100	1.6	2	2.1	3.6	1.8	1.5	1.4	1.7	2.2	2.3
B	100	24.6	12.7	12.7	100	100	100	50	100	1.8	1.4	1.8	7	7	7	2.4	2.5	3.3	3.1
C	200	24	11.1	11.1	100	100	100	100	100	3.1	3	2.8	2.6	2.3	1.7	1.3	2.1	2.5	2.4
D	300	21	13	13	100	100	100	100	100	2.9	2.9	2.8	2.6	2.9	2	2.8	2.5	2	1.2
E	400	40	11.5	11.5	100	100	100	100	100	2.1	1.6	2.4	2.5	2	2.2	2.5	2.3	1.6	1.8
F	500	39	11.8	11.8	100	100	100	100	100	2.6	4.7	4.9	4.9	2.6	2.5	1.8	3.7	3.9	3
G	600	37	10	10	100	100	100	100	100	3.2	1.8	1.2	2	1.9	2	2.9	1.9	1.2	1.1
H	700	21	10.2	10.2	100	100	100	100	100	1.2	1.2	1.2	1.8	1.2	1.1	1.1	1.3	2.2	1.2
I	800	23.5	9.8	9.8	100	100	100	100	100	1.5	1.7	1.8	1.9	1.4	1.4	2	1.8	1.8	2
J	900	19.9	14.8	14.8	100	100	100	100	100	2.6	2	2.1	1.3	1.7	1.7	1.9	1.6	1.8	2
K	1000	22.7	15.7	15.7	100	100	100	100	100										

STREAM FUNCTION ASSESSMENT METHOD for OREGON

Name of Project Area:	Dairy Creek Mitigation Bank	Assessment Timing:	Predicted conditions	Enter Data in These Boxes ONLY / Scores Automatically Calculated in Green Boxes

VALUES MEASURES TABLE

FILL IN THE YELLOW BOXES. Most questions contain drop-down menus in their respective answer box. Select an answer from the drop-down menus, when possible, instead of typing an answer.

Measure	Function Groups	Submeasure	Measure Abbreviation	Qualifiers		Data Entry			Measure Score
V1 **Rare Species Occurrence & Special Habitat Designations**	**Are there rare species or special habitat designations in the vicinity of the PA ?** Answer each submeasure using information from the site's SFAM report (rare species scores & special habitat designations section), as well as any available survey data for the PA and its vicinity, or personal knowledge about the site. Note: The SFAM Report provides rankings of High, Intermediate, Low, or None for each category of rare species associated with aquatic and riparian habitat. Upgrade a ranking to High if there is a recent (within 5 years) onsite observation of any of these species by a qualified observer under conditions similar to what now occur. Provide references in the external notes section of the cover page. *Values informed: Surface Water Storage, Flow Variation, Substrate Mobility, Maintain Biodiversity, Sustain Trophic Structure, Nutrient Cycling, Chemical Regulation, Thermal Regulation*								
	Essential salmonid habitat or rare non-anadromous fish species:								
	Hydrology, Geomorphology, Biology, Water Quality	Fish	Fish		Is the PA within a HUC12 that has designated Essential Salmonid Habitat (ESH)? Select yes or no.	Yes			1.00
					According to the site's SFAM Report, what is the "non-anadromous fish" score? Select an answer from the dropdown menu:	None/Not Known			
	Rare amphibian and reptile species:								
	Hydrology, Geomorphology, Biology, Water Quality	Rare Amphibians and Reptiles	RarAmRep		According to the site's SFAM Report, what is the "amphibian and reptile" score? Select an answer from the dropdown menu:	None/Not Known			0.00
	Important Bird Areas or rare waterbirds:								
	Biology, Water Quality	Waterbirds	Waterbird		Is there an Important Bird Area (IBA) within a 2-mile radius of the PA?	Yes			1.00
					According to the site's SFAM Report, what is the "feeding waterbird" score? Select an answer from the dropdown menu:	None/Not Known			
	Rare songbirds, raptors, and mammals:								
	Biology, Water Quality	Rare Bird and Mammals	RarBdMm		According to the site's SFAM Report, what is the "songbird, raptor and mammal" score? Select an answer from the dropdown menu:	None/Not Known			0.00
	Rare invertebrate species:								
	Hydrology, Geomorphology, Biology, Water Quality	Rare Invertebrates	RarInvert		According to the site's SFAM Report, what is the "invertebrates" score? Select an answer from the dropdown menu:	None/Not Known			0.00
	Rare plant species:								
	Geomorphology, Biology, Water Quality	Rare Plants	RarPlant		According to the site's SFAM Report, what is the "plant" score? Select an answer from the dropdown menu:	None/Not Known			0.00
V2 **Water Quality Impairments**	**Is this reach on the 303(d) list or other TMDL (Categories 3B-5) for any of the following impairments: sediment, nutrient, metals & toxics, temperature, or flow modification?** Answer each submeasure using information from the site's SFAM Report (water quality impairments section). *Values informed: Flow Variation, Sediment Continuity, Create & Maintain Habitat, Sustain Trophic Structure, Nutrient Cycling, Chemical Regulation, Thermal Regulation*								
	Sediment impairment: total suspended solids (TSS), sedimentation, or turbidity (note that some sedimentation can be naturally occurring and desirable therefore does not constitute a problem)								
	Geomorphology, Water Quality	Sedimentation	SedList		Select yes or no from the dropdown menu:	Yes			1.00
	Nutrient impairment: phosphorus, nitrate, ammonia, DO, aquatic weeds or algae, chlorophyll a, etc.; or untreated stormwater/wastewater discharge occurs within 500 feet of the reach								
	Biology, Water Quality	Nutrient Impairment	NutrImp		Select yes or no from the dropdown menu:	Yes			1.00
	Metals or other toxics impairment: toxics, dioxin, heavy metals (iron, manganese, lead, zinc, etc.); or untreated stormwater/wastewater discharge occurs within 500 feet of the reach								
	Water Quality	Metals & Toxics Impairment	ToxImp		Select yes or no from the dropdown menu:	No			0.00
	Temperature impairment:								
	Biology, Water Quality	Temperature Impairment	TempImp		Select yes or no from the dropdown menu:	Yes			1.00
	Flow modification:								
	Hydrology, Biology	Flow Modification	FlowMod		Select yes or no from the dropdown menu:	No			0.00

V3 **Protected Areas**	**Is the PA boundary within 300 feet of a special protected area?** Answer using information from the site's SFAM Report (Within 300 feet of a Special Protected Area) as well as other available data for the PA and its vicinity. Note: The SFAM Report evaluates whether BLM Areas of Critical Environmental Concern (ACEC) or Outstanding Natural Areas (ONA), federal Research Natural Areas (RNA) or Special Interest Areas (SIA), Natural Heritage Conservation Areas (NHCA), and Land Trust and Nature Conservancy Preserves are within 300 feet of the PA. If there are other lands within 300 feet of the site that are protected specifically for their high ecological significance, select yes and provide references in the assessment notes section of the cover page. *Values informed: Maintain Biodiversity, Sustain Trophic Structure*								
	Biology		Protect		Select yes or no from the dropdown menu:	No			0.00
V4 **Impervious Area**	**What is the percent impervious area in the drainage basin?** Answer using information from the site's StreamStats Report (IMPERV). *Values informed: Surface Water Storage, Flow Variation, Sediment Continuity, Substrate Mobility, Create & Maintain Habitat, Sustain Trophic Structure, Nutrient Cycling, Chemical Regulation, Thermal Regulation*								
	Hydrology, Geomorphology, Biology, Water Quality		ImpArea		<10%, select A; 10-25%, select B; >25-60%, select C; >60%, select D.	A			0.00
V5 **Riparian Area**	**What is the percentage of intact riparian area within 2 miles upstream of the PA ?** Intact refers to a riparian area with forest or otherwise unmanaged (i.e. natural) perennial cover appropriate for the basin that is at least 15 ft wide on both sides of the channel. Unmanaged perennial cover is vegetation that includes wooded areas, native prairies, sagebrush, vegetated wetlands, as well as relatively unmanaged commercial lands in which the ground and vegetation is disturbed less than annually, such as lightly grazed pastures, timber harvest areas, and rangeland. It does not include water, pasture, row crops (e.g., vegetable, orchards, Christmas tree farms), lawns, residential areas, golf courses, recreational fields, pavement, bare soil, rock, bare sand, or gravel or dirt roads. *Values informed: Create & Maintain Habitat, Sustain Trophic Structure, Nutrient Cycling, Chemical Regulation, Thermal Regulation*								
	Biology, Water Quality		RipArea		If >50% select A. If >35-50%, select B. If 15-35%, select C. If <15%, select D.	B			0.70
V6 **Extent of Downstream Floodplain Infrastructure**	**What is the extent of infrastructure (buildings, bridges, utilities, row crops) in the floodplain ?** Consider the floodplain area between the PA and either the next largest water body (large tributary, mainstem junction, lake, etc.) or 2 miles downstream, whichever is less. *Values informed: Surface Water Storage, Sediment Continuity, Create & Maintain Habitat, Sustain Trophic Structure*								
	Hydrology, Geomorphology, Biology		DwnFP		If >50% of total area, select A. If 1-50% of total area, select B. If none, select C. If not known or the downstream floodplain is not mapped, select D.	B			0.50
V7 **Zoning**	**What is the dominant zoned land use designation downstream of the PA?** Consider the floodplain area between the PA and either the next largest water body (larger tributary, mainstem junction, lake, etc.) or 2 miles downstream, whichever is less. *Values informed: Surface Water Storage, Create & Maintain Habitat, Sustain Trophic Structure*								
	Hydrology, Biology		Zoning		If developed (commercial, industrial, residential, etc.), select A. If agriculture or rural residential, select B. If forest, open space, or public lands, select C. If not zoned or no information, select D.	B			0.50
V8 **Frequency of Downstream Flooding**	**What is the frequency of downstream flooding?** Consider the floodplain area between the PA and either the next largest water body or 2 miles, whichever is less. Determine the frequency of flooding downstream of the PA that affects infrastructure (i.e. affects use of the site or causes economic loss). *Values informed: Surface Water Storage*								
	Hydrology		DwnFld		If frequent (several times a year), select A. If moderate (up to once a year), select B. If infrequent (only large events), select C. If never or not known, select D.	C			0.30

V9

Impoundments

What is the prevalence of impoundments within 2 miles upstream and downstream of the PA that are likely to cause shifts in timing or volume of water?

The shift may be by hours, days, or weeks, becoming either more muted (smaller or less frequent peaks spread over longer times, more temporal homogeneity of flow or water levels) or more flashy (larger or more frequent spikes but over shorter times). For each category, select yes or no from the dropdown menu.

Values informed: Surface Water Storage, Flow Variation, Sediment Continuity, Substrate Mobility, Create & Maintain Habitat; Functions informed: Flow Variation

Hydrology, Geomorphology, Biology		Impound		Are there 1-2 small dams or other impoundments **upstream** of the PA?	No	Upstream impoundments subscore:	1.00
				Are there >2 small impoundments, 1 or more large dams or other impoundments **upstream** of the PA?	No		
				Are there 1-2 small dams or other impoundments **downstream** of the PA?	No	Downstream impoundments subscore:	1.00
				Are there >2 small impoundments, 1 or more large dams or other impoundments **downstream** of the PA?	No		

V10

Fish Passage Barriers

Are there man-made fish passage barriers within 2 miles upstream and/or downstream of the PA ?

Select an answer from the drop-down menu for each of the upstream and downstream directions. If more than one barrier is present, answer for the one with the most restricted level of passage (e.g. Blocked). Do not include natural barriers.

Values informed: Maintain Biodiversity, Sustain Trophic Structure

Biology		Passage	Slope barrier	Upstream	Unknown	1.00		1.00
				Downstream	Unknown	1.00		

V11

Water Source

Is there an area that is of special concern for drinking water sources or groundwater recharge within 2 miles downstream of the PA?

This includes any of the following: the source area for a surface-water drinking water source; the source area for a groundwater drinking water source; a designated Groundwater Management Area; a designated Sole Source Aquifer.

Values informed: Sub/Surface Transfer, Nutrient Cycling, Chemical Regulation

Hydrology, Water Quality		Source		Select yes or no from the dropdown menu:	No			0.00

V12

Surrounding Land Cover

What are the land cover types surrounding the PA?

Draw a 2 mile radius around the PA. Provide an estimate of the percentage of area within the resulting polygon that matches each land cover description. Enter 0% if none. Enter 1% if barely present. Must sum to 100%.

Values informed: Maintain Biodiversity, Sustain Trophic Structure

Biology		SurrLand		Unmanaged vegetation (wetland, native grassland, forest) or water	20	× 1.00	20.00	0.48
				Managed vegetation (pasture, regularly watered lawn (i.e. park), row crops, orchards)	55	× 0.50	27.50	
				None of the above (including bare areas [dirt, rock], roads, energy facilities, residential, commercial, industrial)	25	× 0.00	0.00	
				SUM	100			

V13

Riparian Continuity

What is the longitudinal extent of intact riparian area that is contiguous to the PA?

Select the longest length of contiguous riparian corridor in either the upstream or downstream direction, but do not include the PA length itself.

Intact refers to a riparian area with forest or otherwise managed (i.e. natural) perennial cover appropriate for the basin that is at least 15 ft wide on both sides of the channel. Contiguous means there are no > 100 ft gaps in forested cover or unmanaged perennial cover. Unmanaged perennial cover is vegetation that includes wooded areas, native prairies, sagebrush, vegetated wetlands, as well as relatively unmanaged commercial lands in which the ground and vegetation is disturbed less than annually, such as lightly grazed pastures, timber harvest areas, and rangeland. It does not include water, pasture, row crops (e.g., vegetable, orchards, Christmas tree farms), lawns, residential areas, golf courses, recreational fields, pavement, bare soil, rock, bare sand, or gravel or dirt roads.

Values informed: Maintain Biodiversity, Create & Maintain Habitat, Sustain Trophic Structure, Nutrient Cycling, Chemical Regulation, Thermal Regulation

Biology, Water Quality		RipCon		If <100 feet, select A. If 100-500 feet, select B. If >500 feet, select C.	C			1.00

V14

Watershed Position

What is the relative position of the PA in its HUC 8 watershed?

Answer this question looking at position of the PA relative to the 8-digit HUC layer.

- If the PA is (a) closer to the watershed's outlet than its upper end and (b) closer to the large stream/river exiting the watershed's outlet than it is to the boundary of the watershed, select "lower 1/3."
- If the PA is (a) closer to the watershed's upper end than its outlet and (b) closer to the watershed's boundary than its large stream/river, select "upper 1/3."
- If neither of the above conditions are met, select "middle 1/3."

Values informed: Sediment Continuity, Nutrient Cycling, Chemical Regulation

Geomorphology, Water Quality		Position		Select an answer from the dropdown menu:	Upper 1/3			0.00

V15 **Flow Restoration Needs**	**What is the "streamflow restoration need" ranking of the watershed within which the PA is located?** Answer this question using the Flow Restoration Needs layer in the SFAM Map Viewer. *Values informed: Flow Variation, Create & Maintain Habitat*								
	Hydrology, Biology		FlowRest		Select an answer from the dropdown menu:	High or Highest			1.00
V16 **Unique Habitat Features**	**Are there rare aquatic habitat features within the EAA that are not common to the rest of the drainage basin ?** For each feature type, select yes or no from the dropdown menu. This question must be answered in the field, but the user can check for any mapped wetlands or seeps, springs, or tributaries in the office using the Oregon Wetlands Cover, Springs, and the Flowline layers, respectively. *Values informed: Substrate Mobility, Maintain Biodiversity, Create & Maintain Habitat, Sustain Trophic Structure, Thermal Regulation*								
	Geomorphology, Biology		HabFeat		Large log jams that span 25% or more of the active channel width?	Yes		Overall HabFeat score	0.50
					Braided channel or otherwise multiple channels resulting in islands?	No			
					Large spatial extent (>30%) of wetlands in the floodplain?	No		Substrate subscore	0.00
					Seeps, springs, or tributaries contributing colder water?			Thermal subscore	0.00
Already in Stream Classification on Cover Page - NO DATA INPUT REQUIRED.									
Surface Water Runoff	**What is the level of surface water runoff (based on local water availability and local gradient)?** No data input necessary, information taken from EPA classification (stream type & gradient).								
	Hydrology		Runoff						1.00
Aquifer Permeability	**What is the permeability of the aquifer (determined by percent permeable bedrock based on hydraulic conductivity m/day)?** No data input necessary, information taken from EPA classification.								
	Hydrology		AqPerm			High			0.00
Soil Permeability	**What is the permeability of the soil (based on hydraulic conductivity in cm/hr)?** No data input necessary, information taken from EPA classification.								
	Hydrology		SoilPerm			High			0.00
Erodibility	**What is the erodibility of this reach?** No data input necessary, information taken from EPA classification.								
	Geomorphology		Erode			Difficult to Erode			0.75

Oregon Biodiversity Information Center

Institute for Natural Resources
Portland State University
Mail Stop: INR
Post Office Box 751
Portland, Oregon 97207
503.725.9950
http://inr.oregonstate.edu/orbic

February 4, 2020

C. Jonas Moiel
Green Banks LLC
14200 SE McLoughlin Blvd, Suite A
Milwaukie, OR 97267

Dear Mr. Moiel:

Thank you for requesting information from the Oregon Biodiversity Information Center (ORBIC). We have conducted a data system search for rare, threatened and endangered plant and animal records for your Dairy Creek Mitigation Bank Project in W Fork Dairy Creek area in Banks.

Five (5) element occurrence records were noted within a two-mile radius of your project and are included on the enclosed computer printout and GIS export.

Please remember that a lack of rare element information from a given area does not necessarily indicate there are no significant elements present, only that there is no information known to us from the site. To ensure there are no significant elements present that may be affected by your project, you should inventory the site during the appropriate season.

This data is confidential and for the specific purposes of your project and is **not to be distributed**. Please also note that as our database is continually updated, the data in this report should be considered current for a maximum of one year from the date it was generated and should not be cited thereafter.

Please forward the included invoice to the appropriate party in your organization for payment.

If you need additional information or have any further questions, please do not hesitate to contact me.

Sincerely,

Lindsey Wise

Lindsey Wise
Biodiversity Data Manager
lindsey.wise@pdx.edu
503.725.9951

encl.: **invoice (INR-020420-LKW3)**
computer printout and data key
GIS export

Scientific Name: ***Haliaeetus leucocephalus***
Common Name: **Bald eagle**

EO NUM: 741
EO ID: 29094

Federal Status: GRANK: G5 NHP List: 4 Category: Vertebrate Animal
State Status: SRANK: S4B,S4N HP Track: W ELCODE: ABNKC10010
Confirmed: First Obs: 2004 Last Obs: 2006 EO Rank: E - Verified extant (viability not assessed)
Directions: Just east of Dairy Creek off Highway 6 to the southwest of Banks.

County Name	Ecoregion	Owner Name/Type	Watershed
Washington	WV		170900100303 - Lower West Fork Dairy Creek

Town/Range Sect Meridian TRS Note	QuadCode	QuadName	Managed Area Name
002N004W - 36 - WM -	45123-E2	Gales Creek	

Source Feature	Uncertainty Type (Distance)	[Use Class]
48854 - Point	Estimated (25 m)	Breeding

Annual Observations
- 2006 - 1 fledged
- 2005 - breeding failure
- 2004 - nesting failure

SFeat ID Date Visit data

Occurence Data
EO Type: Min. Elev.(m): 52
EO Data: See annual observations.
EO Comments:
Protection:
Management:
References: Isaacs & Anthony 2006
Specimens:
General: Isaacs and Anthony nests 1180 and 1316.

Scientific Name: ***Oncorhynchus mykiss pop. 33***
Common Name: **Steelhead (Upper Willamette River ESU, winter run)**

EO NUM: 11
EO ID: 4918

Federal Status: LT GRANK: G5T2Q NHP List: 1 Category: Vertebrate Animal
State Status: S SRANK: S2 HP Track: Y ELCODE: AFCHA02138
Confirmed: First Obs: 1999-PRE Last Obs: 2009 EO Rank: E - Verified extant (viability not assessed)
Directions: TUALATIN RIVER & TRIBUTARIES

County Name	Ecoregion	Owner Name/Type	Watershed
Washington	WV		170900100103 - Lower Gales Creek
			170900100203 - Sain Creek-Scoggins Creek
			170900100204 - Roaring Creek-Tualatin River
			170900100205 - Carpenter Creek-Tualatin River
			170900100206 - City of Forest Grove-Tualatin River
			170900100302 - Middle West Fork Dairy Creek
			170900100303 - Lower West Fork Dairy Creek
			170900100305 - Lower East Fork Dairy Creek
			170900100306 - Upper McKay Creek
			170900100307 - Lower McKay Creek
			170900100308 - Counsil Creek-Dairy Creek
			170900100404 - Davis Creek-Tualatin River

Town/Range Sect Meridian TRS Note	QuadCode	QuadName	Managed Area Name
001N002W - 06 - WM -	45122-D8	Scholls	Killin Wetlands
001N002W - 07 - WM -	45122-E8	Hillsboro	
001N002W - 18 - WM -	45122-F8	Dixie Mountain	
001N002W - 19 - WM -	45123-D1	Laurelwood	
001N002W - 20 - WM -	45123-D2	Gaston	
001N003W - 01 - WM -	45123-E1	Forest Grove	
001N003W - 03 - WM -	45123-E2	Gales Creek	
001N003W - 04 - WM -			
001N003W - 09 - WM -			
001N003W - 12 - WM -			
001N003W - 13 - WM -			
001N003W - 16 - WM -			
001N003W - 17 - WM -			
001N003W - 18 - WM -			
001N003W - 21 - WM -			
001N003W - 24 - WM -			
001N003W - 25 - WM -			
001N003W - 26 - WM -			
001N003W - 27 - WM -			
001N003W - 28 - WM -			
001N003W - 34 - WM -			
001N003W - 35 - WM -			
001N003W - 36 - WM -			
001N004W - 02 - WM -			
001N004W - 11 - WM -			
001N004W - 12 - WM -			
001N004W - 13 - WM -			
001S003W - 01 - WM -			
001S003W - 03 - WM -			
001S003W - 04 - WM -			
001S003W - 06 - WM -			
001S003W - 07 - WM -			
001S003W - 08 - WM -			
001S003W - 09 - WM -			
001S003W - 10 - WM -			
001S003W - 11 - WM -			
001S003W - 12 - WM -			
001S003W - 14 - WM -			
001S003W - 18 - WM -			
001S004W - 01 - WM -			
001S004W - 13 - WM -			
001S004W - 24 - WM -			
001S004W - 25 - WM -			
001S004W - 36 - WM -			
002N002W - 18 - WM -			
002N002W - 19 - WM -			
002N002W - 30 - WM -			
002N002W - 31 - WM -			
002N002W - 32 - WM -			
002N003W - 13 - WM -			
002N003W - 24 - WM -			
002N003W - 34 - WM -			
002N004W - 34 - WM -			
002N004W - 35 - WM -			
002N004W - 36 - WM -			

Source Feature Uncertainty Type (Distance) [Use Class] Annual Observations

Data currently not available.

SFeat ID Date Visit data

Occurence Data

EO Type: REARING & MIGRATION - fish Min. Elev.(m):

EO Data: 2009: Classified as rearing by ODFW.
WINTER RUN; ODFW DISTRIBUTION MAPS USED TO CREATE THE 1:24,000 COVERAGE.

EO Comments:

Protection:

Management:

References: ODFW 2001; Bennett ; Massey ; ODFW

Specimens:

General: DISTRIBUTION INFORMATION USED IN THIS EOR WAS DERIVED FROM ODFW GEOGRAPHIC RESOURCES DATA PRODUCED AND DISTRIBUTED IN 2001. UNLESS SPECIFIC DATA EXISTS IN THE DATA FIELD, THE INFORMATION PRESENTED IN THIS EOR REPRESENTS THE "BEST PROFESSIONAL JUDGMENT" BY ODFW'S DISTRICT FISHERIES BIOLOGIST; THE PRESENCE OF STEELHEAD IN DESCRIBED AREAS SHOULD BE CONSIDERED UNDOCUMENTED BUT AS HAVING A POTENTIAL OF BEING PRESENT.

Scientific Name: ***Oncorhynchus mykiss pop. 33*** EO NUM: 21

Common Name: **Steelhead (Upper Willamette River ESU, winter run)** EO ID: 6798

Federal Status: LT GRANK: G5T2Q NHP List: 1 Category: Vertebrate Animal

State Status: S SRANK: S2 HP Track: Y ELCODE: AFCHA02138

Confirmed: First Obs: 1999-PRE Last Obs: 1999-PRE EO Rank: E - Verified extant (viability not assessed)

Directions: SADD CREEK

County Name	Ecoregion	Owner Name/Type	Watershed
Washington	WV		170900100302 - Middle West Fork Dairy Creek

Town/Range Sect Meridian TRS Note	QuadCode	QuadName	Managed Area Name
002N004W - 28 - WM -	45123-E2	Gales Creek	Killin Wetlands
002N004W - 33 - WM -	45123-F2	Buxton	
002N004W - 34 - WM -			

Source Feature Uncertainty Type (Distance) [Use Class] Annual Observations

Data currently not available.

SFeat ID	Date	Visit data
6798	1999-PRE	WINTER RUN; ODFW DISTRIBUTION MAPS USED TO CREATE THE 1:24,000 COVERAGE.

Occurence Data

EO Type: SPAWNING & REARING - fish Min. Elev.(m):

EO Data: WINTER RUN; ODFW DISTRIBUTION MAPS USED TO CREATE THE 1:24,000 COVERAGE.

EO Comments:

Protection:

Management:

References: ODFW 2001; Bennett ; Massey

Specimens:

General: DISTRIBUTION INFORMATION USED IN THIS EOR WAS DERIVED FROM ODFW GEOGRAPHIC RESOURCES DATA PRODUCED AND DISTRIBUTED IN 2001. UNLESS SPECIFIC DATA EXISTS IN THE DATA FIELD, THE INFORMATION PRESENTED IN THIS EOR REPRESENTS THE "BEST PROFESSIONAL JUDGMENT" BY ODFW'S DISTRICT FISHERIES BIOLOGIST; THE PRESENCE OF STEELHEAD IN DESCRIBED AREAS SHOULD BE CONSIDERED UNDOCUMENTED BUT AS HAVING A POTENTIAL OF BEING PRESENT.

Scientific Name: ***Oncorhynchus mykiss pop. 33*** EO NUM: 112

Common Name: **Steelhead (Upper Willamette River ESU, winter run)** EO ID: 31868

Federal Status: LT GRANK: G5T2Q NHP List: 1 Category: Vertebrate Animal

State Status: S SRANK: S2 HP Track: Y ELCODE: AFCHA02138

Confirmed: First Obs: 2009-pre Last Obs: 2009 EO Rank: E - Verified extant (viability not assessed)

Directions: West Fork Dairy Creek, .6 miles north of Banks. Segment extends approximately 6.2 miles.

County Name	Ecoregion	Owner Name/Type	Watershed
Washington	WV		170900100301 - Upper West Fork Dairy Creek
			170900100302 - Middle West Fork Dairy Creek

Town/Range Sect Meridian TRS Note	QuadCode	QuadName	Managed Area Name
002N004W - 04 - WM -	45123-F1	Meacham Corner	
002N004W - 05 - WM -	45123-F2	Buxton	
002N004W - 09 - WM -			
002N004W - 10 - WM -			
002N004W - 14 - WM -			
002N004W - 15 - WM -			
002N004W - 23 - WM -			
002N004W - 24 - WM -			
002N004W - 25 - WM -			

Source Feature Uncertainty Type (Distance) [Use Class]

Annual Observations

Data currently not available.

SFeat ID Date Visit data

Occurence Data

EO Type:

Min. Elev.(m):

EO Data: 2009: Classified as rearing by ODFW.

EO Comments:

Protection:

Management:

References: ODFW

Specimens:

General: Distribution information used in this EOR was derived from ODFW 1:24,000 scale geographic resources data produced and distributed in 2009. Use type was determined by ODFW and other natural resources agency field staff based on survey data, supporting documentation, and the best professional judgement of the field biologists. Unless otherwise noted, the presence of steelhead in described areas should be considered undocumented but as having a potential of being present.

Scientific Name: ***Oncorhynchus mykiss pop. 33*** EO NUM: 113

Common Name: **Steelhead (Upper Willamette River ESU, winter run)** EO ID: 31869

Federal Status: LT GRANK: G5T2Q NHP List: 1 Category: Vertebrate Animal

State Status: S SRANK: S2 HP Track: Y ELCODE: AFCHA02138

Confirmed: First Obs: 2009-pre Last Obs: 2009 EO Rank: E - Verified extant (viability not assessed)

Directions: West Fork Dairy Creek, .5 miles west of Banks. Segment extends approximately .8 miles.

County Name	Ecoregion	Owner Name/Type	Watershed
Washington	WV		170900100302 - Middle West Fork Dairy Creek

Town/Range Sect Meridian TRS Note	QuadCode	QuadName	Managed Area Name
002N004W - 25 - WM -	45123-E1	Forest Grove	
002N004W - 36 - WM -	45123-F1	Meacham Corner	

Source Feature Uncertainty Type (Distance) [Use Class]

Annual Observations

Data currently not available.

SFeat ID Date Visit data

Occurence Data

EO Type:

Min. Elev.(m):

EO Data: 2009: Classified as spawning by ODFW.

EO Comments:

Protection:

Management:

References: ODFW

Specimens:

General: Distribution information used in this EOR was derived from ODFW 1:24,000 scale geographic resources data produced and distributed in 2009. Use type was determined by ODFW and other natural resources agency field staff based on survey data, supporting documentation, and the best professional judgement of the field biologists. Unless otherwise noted, the presence of steelhead in described areas should be considered undocumented but as having a potential of being present.

5 records total

Key to Oregon Biodiversity Information Center Data

Field Name	Description
Scientific Name	The scientific name of the species.
Common Name	The common name of the species.
Category	Value that indicates the broad biological category for each species.
ELCODE	Unique NatureServe code for identifying this element. 1st and 2nd byte (PD=Plant dict, PM=Plant monocot, PG=Plant gymnosperm, PP=Plant pteridophyte, AA=amphibian, AB=bird, AF=fish, AM=mammal, AR=reptile, **I**=invertebrate. 3rd-5th byte (family abbreviation). 6th-7th (genus code). 8th-9th (species). 10th (tie breaker).
Federal Status	US Fish and Wildlife Service or NOAA Fisheries status. **LE**=listed endangered, **LT**=listed threatened, **PE** or **PT**=proposed endangered or threatened, **C**=candidate for listing with enough information available for listing, **SOC** or **SC**=species of concern, **PS:***xx*=partial status for species.
State Status	For animals, Oregon Department of Fish and Wildlife status: **LE**=listed endangered, **PE**=proposed endangered, LT=listed thratened, **PT**=proposed threatened, **SC** or **C**=sensitive-critical, **S**=sensitive. For plants, Oregon Department of Agriculture status: **LE**=listed endangered, **LT**=listed threatened, **C**=candidate.
GRANK/SRANK	ORNHIC participates in an international system for ranking rare, threatened and endangered species throughout the world. The system was developed by The Nature Conservancy and is now maintained by NatureServe in cooperation with Heritage Programs or Conservation Data Centers (CDCs) in all 50 states, in 4 Canadian provinces, and in 13 Latin American countries. The ranking is a 1-5 scale, primarily based on the number of known occurrences, but also including threats, sensitivity, area occupied, and other biological factors. In this book, the ranks occupy two lines. The top line is the Global Rank and begins with a "G". If the taxon has a trinomial (a subspecies, variety or recognized race), this is followed by a "T" rank indicator. A "Q" at the end of this line indicates the taxon has taxonomic questions. The second line is the State Rank and begins with the letter "S". The ranks are summarized as follows: **1** = Critically imperiled because of extreme rarity or because it is somehow especially vulnerable to extinction or extirpation, typically with 5 or fewer occurrences; **2** = Imperiled because of rarity or because other factors demonstrably make it very vulnerable to extinction (extirpation), typically with 6-20 occurrences; **3** = Rare, uncommon or threatened, but not immediately imperiled, typically with 21-100 occurrences; **4** = Not rare and apparently secure, but with cause for long-term concern, usually with more than 100 occurrences; **5** = Demonstrably widespread, abundant, and secure; **H** = Historical Occurrence, formerly part of the native biota with the implied expectation that it may be rediscovered; **X** = Presumed extirpated or extinct; **U** = Unknown rank; **?** = Not yet ranked, or assigned rank is uncertain.
NHP list	All rare species in Oregon are assigned a list number of 1, 2, 3 or 4, where **1**=threatened or endangered throughout range, **2**=threatened or endangered in Oregon but more common elsewhere, **3**=Review List (more information is needed), **4**=Watch List (currently stable). A null value indicates the species is not currently on our rare species list.
HP Track	We currently obtain and computerize locational information for only those elements marked with **Y**(es). Those species marked with **N**(o) or **W**(atch) have incomplete data as we do not actively track them at this time.
EO NUM	The number of the Element Occurrence (EO) for this species. An element occurrence is an area of land or water where the species is or was known to occur and has conservation value. EOs are the main tracking unit for Heritage Programs.
EO ID	Unique identifier for the Element Occurrence (EO). Unique for each occurrence in the database.
First_obs	First reported sighting date for this occurrence in the form YYYY-MM-DD.
Last_obs	Last reported sighting date, usually in the form YYYY-MM-DD.

Key to Oregon Biodiversity Information Center Data

Field Name	Description
Confirmed	Indication of whether taxonomic identification of the Element represented by this occurrence has been confirmed by a reliable individual. Blank=unknown, assumed to be correctly identified. Y=Yes, confident identification. ?=identification questions.
EO Rank	ORNHIC's determination of the viability of the occurrence.
Directions	Site name and/or directions to site.
County	County name(s) in which EO is mapped.
Ecoregion	Physiographic Province in which EO is mapped: **CR**=Coast Range, **WV**=Willamette Valley, **KM**=Klamath Mountains, **WC**=West slope and crest of the Cascades, **EC**=East slope of the Cascades, **BM**=Ochoco, Blue and Wallowa Mts., **BR**=Basin and Range, **CB**=Columbia Basin, **SP**=Snake River Plains. **ME**=Marine and Estuarine.
Town-Range, Sec, and Note	United States rectangular land survey (also known as the Public Land Survey System) legal township, range, and section descriptions in which the EO is mapped. Township first (4 bytes), range second (4 bytes). For example: 004S029E = Township 4S, Range 29E. All locations are with reference to the Willamette Meridian. Fractional ranges or townships are indicated in the Note field.
Quadcode	USGS code for the USGS topographic quadrangle map(s) where the record is mapped.
Quadname	Name of the USGS topographic quadrangle map(s) where the record is mapped.
Watershed	Watershed(s), identified according to the U.S. Geological Survey (USGS) Hydrologic Unit Map 10-digit code, within which the Element Occurrence is located.
Owner Name/Type	Federal, State, Private, etc.
Managed Area Name	BLM District, USFS Forest, Private Preserve
Annual Observation	Summary of yearly observation.
Source Feature	A Source Feature is the initial translation of a discrete unit of observation data as a spatial feature. Creation of a Source Feature requires an interpretive process. The likely location and extent of an observation is determined through consideration of the amount and direction of any variability between the recorded and actual locations of the observation data. In most cases, the Source Feature is delineated to encompass locational uncertainty. A Source Feature can be a point, line, or polygon. The type of Source Feature developed depends on both the preceding conceptual feature type and the locational uncertainty associated with the feature.
Feature ID	Unique identifier for source feature.
Obs Date	Date of source feature observation.
Source Observation Data	Observations specific to the source feature.

Key to Oregon Biodiversity Information Center Data

Field Name	Description
Uncertainty Type (Distance)	The recorded location of an observation of an Element may vary from its true location due to many factors, including the level of expertise of the data collector, differences in survey techniques and equipment used, and the amount and type of information obtained. This inaccuracy is characterized as locational uncertainty, and is assessed for Source Feature(s) based on the uncertainty associated with the underlying information on the location of the observation. Four categories of locational uncertainty have been identified, as follows: <u>Negligible</u> uncertainty is less than or equal to 6.25 meters in any dimension. Source Features with negligible uncertainty are based on a comprehensive field survey with high quality mapping and a high degree of certainty. <u>Linear</u> uncertainty is greater than 6.25 meters, and varies along an axis (e.g., a path, stream, ridgeline). The true location of an observation with linear uncertainty may be visualized as effectively sliding along a line that delineates the uncertainty. <u>Areal delimited</u> uncertainty is greater than 6.25 meters, and varies in more than one dimension. The true location of an observation can be visualized as floating within an area with a boundary that can be specifically delimited. Boundaries can be defined using roads, bodies of water, etc. <u>Areal estimated</u> uncertainty is greater than 6.25 meters, and varies in more than one dimension. A boundary cannot be specifically delimited based on the observation information, i.e., the actual extent is unknown. The true location of the observation can be visualized as floating within an area for which boundaries cannot be specifically delimited. Source Features with areal estimated uncertainty require that the user specify an estimated uncertainty distance to be used for buffering the feature to incorporate the locational uncertainty.
Use Class	How the source feature is used by migratory species (e.g. breeding, maternity colony, hibernaculum).
EO Type	For animals, type of occurrence, e.g. roost, nest, spawning.
EO Data	Summary of species and population biology for the EO – may include number observed, number of sites, reproduction data, assessment of viability, etc.
EO Comments	Habitat information, e.g. aspect, slope, soils, associated species, community type.
Minimum Elevation	Minimum elevation of the area covered by the range of the taxon, in meters. Negative numbers or blank=not determined.
Protection	Comments on protectibility and threats.
Management	Comments on how the site is managed.
Specimens	Details on specimens that have been collected at this occurrence site. Order of information is: Collector (Collector's number). Year collected. Acquisition number. Collection code.
General	Miscellaneous comments.

Appendix J: Planting Plan

Deciduous Wetland Forest- Palustrine Forested (PFO) Community

Scientific	Common	W.I.S.	Growth Form	Material Type	Approximate Spacing	Phase 1 total (41.8 acres)	Phase 2 total (19.2 acres)
Alnus rubra	red alder	FAC	tree	bareroot	varied;10 ft on center	3,000	1,580
Fraxinus latifolia	Oregon ash	FACW	tree	bareroot	varied;10 ft on center	2,020	1,100
Populus balsamifera spp. *tricocarpa*	black cottonwood	FAC	tree	bareroot	varied;10 ft on center	500	200
Populus tremuloides	quaking aspen	FACU	tree	bareroot	varied;10 ft on center	3,200	1,700
Quercus garryana	Oregon white oak	FACU	tree	bareroot	varied;10 ft on center	4,000	1,500
Salix lucida spp. *lasiandra*	Pacific willow	FACW	tree	bareroot/ cutting	varied;10 ft on center	3,000	1,200
Thuja plicata	Western red cedar	FAC	tree	bareroot	varied;10 ft on center	1,000	400
					Total Trees	16,720	7,680
Cornus sericea	red-osier dogwood	FACW	shrub	bareroot	varied; 4-5 ft on center	8,500	4,000
Crataegus douglasii	black hawthorn	FAC	shrub/tree	bareroot/ seed	varied; 5-7 ft on center	3,500	1,700
Lonicera involucrata	black twinberry	FAC	shrub	bareroot/ seed	varied; 4-5 ft on center	9,000	4,100
Malus fusca	Western crabapple	FACW	shrub/tree	bareroot	varied; 5-7 ft on center	2,000	1,000
Physocarpus capitatus	Pacific ninebark	FACW	shrub	bareroot/ seed	varied; 4-5 ft on center	9,000	4,100
Salix geyeriana	Geyer's willow	FACW	shrub	cutting	varied; 4-5 ft on center	3,250	1,400
Salix hookeriana	Hooker's willow	FACW	shrub	cutting	varied; 4-5 ft on center	3,210	1,400
Salix sitchensis	Sitka willow	FACW	shrub	cutting	varied; 4-5 ft on center	3,200	1,340
Spiraea douglasii	Douglas' spirea	FACW	shrub	bareroot/ seed	varied; 4-5 ft on center	8,500	4,000
					Total Shrubs	50,160	23,040
Agrostis exarata	spike bentgrass	FACW	herb	seed	1.25 lb/acre	53 lbs	24 lbs
Camassia quamash	common camas	FACW	herb	seed/ bulb	varied	20 lbs	10 lbs
Carex leptopoda	taperfruit shortscale sedge	FAC	herb	plug/ seed	clustered plugs 1-2 ft	5000 plugs	2500 plugs
Carex obnupta	slough sedge	OBL	herb	plug/ seed	clustered plugs 1-2 ft	5000 plugs	2500 plugs
Deschampsia cespitosa	tufted hairgrass	FACW	herb	seed	1.5 lb/acre	63 lbs	29 lbs
Deschampsia elongata	slender hairgrass	FACW	herb	seed	2 lb/acre	84 lbs	40 lbs
Glyceria occidentalis	Western mannagrass	OBL	herb	seed	1 lb/acre	42 lbs	20 lbs
Heracleum maximum	common cowparsnip	FAC	herb	seed	0.5 lb/acre in populations	10 lbs	5 lbs
Hordeum brachyantherum	meadow barley	FACW	herb	seed	2 lb/acre	84 lbs	40 lbs
Juncus patens	soft rush	FACW	herb	plug/ seed	clustered plugs 1-2 ft	5000 plugs	2500 plugs
Lotus unifoliatus	Spanish clover	FACU	herb	seed	0.5 lb/acre	21 lbs	10 lbs
Madia glomerata	mountain tarweed	FACU	herb	seed	0.5 lb/acre	21 lbs	10 lbs

*Stem Density target 1,600 stems/acre; Seeding rate approximately 10 lbs per acre.

NOTE: These planting specifications are an approximation of species and quantities which will be used for the project; the actual species and quanties installed may vary as long as adjustments are native species and appropriate for the habitat type.

Willow Dominated Shrub Wetland- Palustrine Scrub-Shrub (PSS) Community

*this includes wetland buffer areas designated as PSS

Scientific	Common	W.I.S.	Growth Form	Material Type	Approximate Spacing	*Phase 1 total (19.0 acres)	*Phase 2 total (10.1 acres)
Alnus rubra	red alder	FAC	tree	bareroot	varied;10 ft on center	730	370
Quercus garryana	Oregon white oak	FACU	tree	bareroot	varied;10 ft on center	500	280
Salix lucida spp. *lasiandra*	Pacific willow	FACW	tree	bareroot/ cutting	varied;10 ft on center	730	370
					Total Trees	1,960	1,020
Cornus sericea	red-osier dogwood	FACW	shrub	bareroot	varied; 4-5 ft on center	2,910	1,520
Crataegus douglasii	black hawthorn	FAC	shrub/tree	bareroot/ seed	varied; 5-7 ft on center	1,330	700
Lonicera involucrata	black twinberry	FAC	shrub	bareroot/ seed	varied; 4-5 ft on center	4,310	2,260
Malus fusca	Western crabapple	FACW	shrub/tree	bareroot	varied; 5-7 ft on center	995	520
Physocarpus capitatus	Pacific ninebark	FACW	shrub	bareroot/ seed	varied; 4-5 ft on center	4,025	2,090
Rosa pisocarpa	pea-fruit rose	FAC	shrub	bareroot	varied; 4-5 ft on center	4,025	2,090
Salix geyeriana	Geyer's willow	FACW	shrub	cutting	varied; 4-5 ft on center	2,000	1,040
Salix hookeriana	Hooker's willow	FACW	shrub	cutting	varied; 4-5 ft on center	2,000	1,040
Salix sitchensis	Sitka willow	FACW	shrub	cutting	varied; 4-5 ft on center	2,000	1,040
Sambucus nigra spp. *cerulea*	blue elderberry	FAC	shrub	bareroot/ seed	varied; 4-5 ft on center	1,660	870
Spiraea douglasii	Douglas' spirea	FACW	shrub	bareroot/ seed	varied; 4-5 ft on center	4,000	2,090
					Total Shrubs	29,255	15,260
Agrostis exarata	spike bentgrass	FACW	herb	seed	1.25 lb/acre	26 lbs	15 lbs
Carex densa	dense sedge	FAC	herb	plug/ seed	clustered plugs 1-2 ft	2500 plugs	1200 plugs
Carex obnupta	slough sedge	OBL	herb	plug/ seed	clustered plugs 1-2 ft	2500 plugs	1200 plugs
Carex stipata	awlfruit sedge	OBL	herb	plug/ seed	clustered plugs 1-2 ft	2500 plugs	1200 plugs
Deschampsia cespitosa	tufted hairgrass	FACW	herb	seed	1.5 lb/acre	31 lbs	18 lbs
Deschampsia elongata	slender hairgrass	FACW	herb	seed	2 lb/acre	41 lbs	24 lbs
Epilobium densiflorum	dense spike primrose	FACW	herb	seed	0.5 lb/acre	10 lbs	6 lbs
Festuca rubra var. *rubra*	red fescue	FAC	herb	seed	1.5 lb/acre	31 lbs	18 lbs
Hordeum brachyantherum	meadow barley	FACW	herb	seed	2 lb/acre	41 lbs	24 lbs
Juncus patens	soft rush	FACW	herb	plug/ seed	clustered plugs 1-2 ft	2500 plugs	1200 plugs
Madia glomerata	mountain tarweed	FACU	herb	seed	0.5 lb/acre	10 lbs	6 lbs

*Stem Density target 1,600 stems/acre; Seeding rate approximately 10 lbs per acre.

NOTE: These planting specifications are an approximation of species and quantities which will be used for the project; the actual species and quanties installed may vary as long as adjustments are native species and appropriate for the habitat type.

Sedge and Rush Dominated Emergent Wetland- Palustrine Emergent (PEM) Community

Scientific	**Common**	**W.I.S.**	**Growth Form**	**Material Type**	**Approximate Spacing**	**Phase 1 total (7.6 acres)**	**Phase 2 total (2.1 acres)**
Agrostis exarata	spike bentgrass	FACW	herb	seed	1 lb/acre	8 lbs	2 lbs
Carex densa	dense sedge	FAC	herb	plug/ seed	clustered plugs 1-2 ft	1,800 plugs	500 plugs
Carex obnupta	slough sedge	OBL	herb	plug/ seed	clustered plugs 1-2 ft	3,600 plugs	1,000 plugs
Carex scoparia	broom sedge	FACW	herb	plug/ seed	clustered plugs 1-2 ft	1,800 plugs	500 plugs
Carex stipata	awlfruit sedge	OBL	herb	plug/ seed	clustered plugs 1-2 ft	1,800 plugs	500 plugs
Deschampsia elongata	slender hairgrass	FACW	herb	seed	2 lb/acre	15 lbs	5 lbs
Grindelia integrfolia	gumweed	FACW	herb	seed	0.5 lb/acre	4 lbs	1 lb
Juncus ensifolius	swordleaf rush	FACW	herb	plug/ seed	clustered plugs 1-2 ft	1,800 plugs	500 plugs
Juncus oxymeris	pointed rush	FACW	herb	plug/ seed	clustered plugs 1-2 ft	1,800 plugs	500 plugs
Juncus patens	soft rush	FACW	herb	plug/ seed	clustered plugs 1-2 ft	1,800 plugs	500 plugs
Leersia oryzoides	rice cutgrass	OBL	herb	seed	1.5 lb/acre	12 lbs	3 lbs
Sagittaria latifolia	wapato	OBL	herb	seed	1 lb/acre	8 lbs	2 lbs
Schoenoplectus tabernaemontani	softstem bulrush	OBL	herb	seed	0.5 lb/acre	4 lbs	1 lb
Scirpus microcarpus	small fruited bulrush	OBL	herb	seed	0.5 lb/acre	4 lbs	1 lb
Veronica americana	American speedwell	OBL	herb	seed	0.25 lb/acre	2 lbs	0.5 lb

*Seeding rate approximately 7 lbs per acre.

NOTE: These planting specifications are an approximation of species and quantities which will be used for the project; the actual species and quanties installed may vary as long as adjustments are native species and appropriate for the habitat type.

Dairy Creek Mitigation Bank
Appendix J: Planting Plan

Stream Mitigation- Riparian and Aquatic Plant Communities

Scientific	Common	W.I.S.	Growth Form	Material Type	Approximate Spacing	Annual "Wet" Zone (1.6 ac.)	Biennial "Semi-Wet" Zone (3.8 ac.)
Alnus rubra	red alder	FAC	tree	bareroot	varied;10 ft on center		110
Fraxinus latifolia	Oregon ash	FACW	tree	bareroot	varied;10 ft on center		120
Salix lucida spp. *lasiandra*	Pacific willow	FACW	tree	bareroot/ cutting	varied;10 ft on center		150
					Total Trees		380
Cornus sericea	red-osier dogwood	FACW	shrub	bareroot	varied; 4-5 ft on center		800
Crataegus douglasii	black hawthorn	FAC	shrub/tree	bareroot/ seed	varied; 5-7 ft on center		500
Frangula purshiana	cascara buckthorn	FAC	shrub/tree	bareroot	varied; 5-7 ft on center		500
Lonicera involucrata	black twinberry	FAC	shrub	bareroot/ seed	varied; 4-5 ft on center		900
Physocarpus capitatus	Pacific ninebark	FACW	shrub	bareroot/ seed	varied; 4-5 ft on center		900
Salix geyeriana	Geyer's willow	FACW	shrub	cutting	varied; 4-5 ft on center		700
Salix hookeriana	Hooker's willow	FACW	shrub	cutting	varied; 4-5 ft on center		700
Salix sitchensis	Sitka willow	FACW	shrub	cutting	varied; 4-5 ft on center		700
					Total Shrubs		5,700
Agrostis exarata	spike bentgrass	FACW	herb	seed	3 lb/acre	5 lbs	12 lb
Carex obnupta	slough sedge	OBL	herb	plug/ seed	clustered plugs 1-2 ft	600 plugs	
Carex stipata	awlfruit sedge	OBL	herb	plug/ seed	clustered plugs 1-2 ft	600 plugs	
Deschampsia cespitosa	tufted hairgrass	FACW	herb	seed	2 lb/acre	3 lbs	8 lbs
Deschampsia elongata	slender hairgrass	FACW	herb	seed	2 lb/acre	3 lbs	8 lbs
Glyceria occidentalis	Western mannagrass	OBL	herb	seed	2 lb/acre	3 lbs	8 lbs
Leersia oryzoides	rice cutgrass	OBL	herb	seed	3 lb/acre	5 lbs	12 lb
Scirpus microcarpus	small fruited bulrush	OBL	herb	plug/ seed	clustered plugs 1-2 ft	600 plugs	

*Stem Density target 1,600 stems/acre in "Semi-Wet" zone; Seeding rate approximately 15 lbs per acre.

NOTE: These planting specifications are an approximation of species and quantities which will be used for the project; the actual species and quanties installed may vary as long as adjustments are native species and appropriate for the habitat type.

Upland Mixed Forest Buffer Community

*includes Riparian Upland buffer

Scientific	Common	W.I.S.	Growth Form	Material Type	Approximate Spacing	*Phase 1 total (9.9 acres)	Phase 2 total (2.2 acres)
Acer macrophyllum	big leaf maple	FACU	tree	bareroot	varied;12 ft on center	400	90
Pinus ponderosa	Ponderosa pine	FACU	tree	bareroot	varied;12 ft on center	400	90
Prunus emarginata	bitter cherry	FACU	tree	bareroot	varied;12 ft on center	400	90
Pseudotsuga menziesii	Douglas' fir	UPL	tree	bareroot/plug	varied;12 ft on center	400	90
Quercus garryana	Oregon white oak	FACU	tree	bareroot	varied;12 ft on center	400	90
					Total Trees	2,000	450
Acer circinatum	vine maple	FAC	shrub	bareroot	varied; 4-5 ft on center	680	150
Frangula purshiana	cascara	FAC	shrub/ tree	bareroot	varied; 5-7 ft on center	525	115
Holodiscus discolor	oceanspray	FACU	shrub	bareroot	varied; 4-5 ft on center	1,040	225
Mahonia aquifolium	tall Oregon grape	FACU	shrub	bareroot/ seed	varied; 4-5 ft on center	2,425	525
Philadelphus lewisii	mock orange	UPL	shrub	bareroot	varied; 4-5 ft on center	690	150
Ribes sanguineum	red-flowering currant	UPL	shrub	bareroot/ seed	varied; 4-5 ft on center	1,900	415
Rosa nutkana	Nootka rose	FAC	shrub	bareroot/ seed	varied; 4-5 ft on center	1,900	415
Rubus parviflorus	thimbleberry	FAC	shrub	bareroot	varied; 4-5 ft on center	1,900	415
Sambucus racemosa	red elderberry	FACU	shrub	bareroot	varied; 4-5 ft on center	1,040	225
Symphoricarpos albus	snowberry	FACU	shrub	bareroot/ seed	varied; 4-5 ft on center	2,425	525
					Total Shrubs	14,525	3,160
Achillea millefolium	yarrow	FACU	herb	seed	0.5 lbs/acre	6 lbs	1.5 lb
Bromus carinatus	California brome	UPL	herb	seed	2 lbs/acre	22 lbs	4 lbs
Deschampsia elongata	slender hairgrass	FACW	herb	seed	2 lbs/acre	22 lbs	4 lbs
Elymus glaucus	blue wildrye	FACU	herb	seed	3 lbs/acre	30 lbs	7 lbs
Festuca idahoensis ssp. roemeri	Roemer's fescue	FACU	herb	seed	2 lbs/acre	22 lbs	5 lbs
Festuca rubra var. *rubra*	red fescue	FAC	herb	seed	2 lbs/acre	22 lbs	5 lbs
Lupinus polyphyllus	large leaf lupine	FAC	herb	seed	0.5 lbs/acre	6 lbs	1.5 lb
Solidago canadensis	Canada goldenrod	FACU	herb	seed	0.25 lbs/acre	4 lbs	1 lb

*Stem Density target 1,600 stems/acre; Seeding rate approximately 12 lbs per acre.

NOTE: These planting specifications are an approximation of species and quantities which will be used for the project; the actual species and quanties installed may vary as long as adjustments are native species and appropriate for the habitat type.

Dairy Creek Mitigation Bank

Clean Water Services' Offsite Mitigation Vegetated Corridor

Scientific	Common	W.I.S.	Growth Form	Material Type	Approximate Spacing	CWS Ofsite Mitigation (11.99 acres)
Acer macrophyllum	big leaf maple	FACU	tree	bareroot	varied;12 ft on center	1,060
Pinus ponderosa	Ponderosa pine	FACU	tree	bareroot	varied;12 ft on center	1,060
Prunus emarginata	bitter cherry	FACU	tree	bareroot	varied;12 ft on center	1,060
Pseudotsuga menziesii	Douglas' fir	UPL	tree	bareroot/plug	varied;12 ft on center	1,060
Quercus garryana	Oregon white oak	FACU	tree	bareroot	varied;12 ft on center	1,030
					Total Trees	5,270
Acer circinatum	vine maple	FAC	shrub	bareroot	varied; 4-5 ft on center	1,100
Frangula purshiana	cascara	FAC	shrub/ tree	bareroot	varied; 5-7 ft on center	1,600
Holodiscus discolor	oceanspray	FACU	shrub	bareroot	varied; 4-5 ft on center	2,100
Mahonia aquifolium	tall Oregon grape	FACU	shrub	bareroot/ seed	varied; 4-5 ft on center	5,000
Philadelphus lewisii	mock orange	UPL	shrub	bareroot	varied; 4-5 ft on center	1,100
Ribes sanguineum	red-flowering currant	UPL	shrub	bareroot/ seed	varied; 4-5 ft on center	2,100
Rosa nutkana	Nootka rose	FAC	shrub	bareroot/ seed	varied; 4-5 ft on center	4,250
Rubus parviflorus	thimbleberry	FAC	shrub	bareroot	varied; 4-5 ft on center	2,200
Sambucus racemosa	red elderberry	FACU	shrub	bareroot	varied; 4-5 ft on center	1,600
Symphoricarpos albus	snowberry	FACU	shrub	bareroot/ seed	varied; 4-5 ft on center	5,000
					Total Shrubs	26,050
Achillea millefolium	yarrow	FACU	herb	seed	0.5 lbs/acre	6 lbs
Bromus carinatus	California brome	UPL	herb	seed	2 lbs/acre	24 lbs
Deschampsia elongata	slender hairgrass	FACW	herb	seed	2 lbs/acre	24 lbs
Elymus glaucus	blue wildrye	FACU	herb	seed	3 lbs/acre	35 lbs
Festuca idahoensis ssp. roemer	Roemer's fescue	FACU	herb	seed	2 lbs/acre	24 lbs
Festuca rubra var. *rubra*	red fescue	FAC	herb	seed	2 lbs/acre	24 lbs
Lupinus polyphyllus	large leaf lupine	FAC	herb	seed	0.5 lbs/acre	6 lbs
Solidago canadensis	Canada goldenrod	FACU	herb	seed	0.25 lbs/acre	3 lbs

*Stem Density target 2,613 stems/acre; Seeding rate approximately 12 lbs per acre.

NOTE: These planting specifications are an approximation of species and quantities which will be used for the project; the actual species and quanties installed may vary as long as adjustments are native species and appropriate for the habitat type.

PLANT COMMUNITY REFERENCE DATA		Data collected on May 6, 2021

Palustrine Scrub-Shrub (PSS) Reference #1

Latin Name	Common Name	Stratum	Nativity	Cover (%)
Fraxinus latifolia	Oregon ash	tree	native	20%
Frangula pershiana	cascara buckthorn	small tree	native	5%
Cornus sericea	red-osier dogwood	shrub	native	40%
Symphoricarpos albus	snowberry	shrub	native	30%
Rubus armeniacus	Armenian blackberry	shrub	non-native	10%
Heracleum maximum	common cowparsnip	herb	native	45%
Camas quamash	common camas	herb	native	10%
Tellima grandiflora	fringecup	herb	native	10%
Carex obnupta	slough sedge	herb	native	6%
Carex leptopoda	taperfruit shortscale sedge	herb	native	2%
Epilobium ciliatum	fringed willowherb	herb	native	2%
Galium aparine	cleavers bedstraw	herb	native	2%
Cardamine hirsuta	mesecheues	herb	native	1%
Cirsium arvense	Canada thistle	herb	non-native	1%

Palustrine Scrub-Schrub (PSS) Reference #2

Latin Name	Common Name	Stratum	Nativity	Cover (%)
Fraxinus latifolia	Oregon ash	tree	native	25%
Malus fusca	Oregon crab apple	small tree	native	20%
Physocarpus capitatus	Pacific ninebark	shrub	native	80%
Rosa pisocarpa	pea-fruit rose	shrub	native	10%
Mahonia aquifolium	Oregon grape	shrub	native	5%
Heracleum maximum	common cowparsnip	herb	native	55%
Rubus ursinus	trailing blackberry	herb	native	6%
Equisetum arvense	field horsetail	herb	native	1%

Palustrine Scrub-Schrub (PSS) Reference #3

Latin Name	Common Name	Stratum	Nativity	Cover (%)
Frangula pershiana	cascara buckthorn	small tree	native	15%
Crataegus douglasii	Douglas hawthorn	small tree	native	20%
Fraxinus latifolia	Oregon ash	tree	native	5%
Salix species	willow species	shrub	native	35%
Cornus sericea	red-osier dogwood	shrub	native	20%
Rosa pisocarpa	pea-fruit rose	shrub	native	15%
Spiraea douglasii	Douglas Spirea	shrub	native	15%
Symphoricarpos albus	snowberry	shrub	native	2%
Phalaris arundinacea	reed canarygrass	herb	non-native	15%
Rubus ursinus	trailing blackberry	herb	native	10%

Palustrine Forested (PFO) Reference #1

Latin Name	Common Name	Stratum	Nativity	Cover (%)
Fraxinus latifolia	Oregon ash	tree	native	70%
Populus trichocarpa	black cottonwood	tree	native	10%
Quercus garryana	Oregon white oak	tree	native	5%
Spiraea douglasii	Douglas Spirea	shrub	native	70%
Rosa nutkana	Nootka rose	shrub	native	20%
Symphoricarpos albus	snowberry	shrub	native	10%
Rubus ursinus	trailing blackberry	herb	native	5%

Palustrine Forested (PFO) Reference #2

Latin Name	Common Name	Stratum	Nativity	Cover (%)
Fraxinus latifolia	Oregon ash	tree	native	45%
Crataegus douglasii	Douglas hawthorn	small tree	native	30%
Populus trichocarpa	black cottonwood	tree	native	20%
Rosa pisocarpa	pea-fruit rose	shrub	native	55%
Oemlaria cerasiformis	osoberry	shrub	native	15%
Rubus ursinus	trailing blackberry	herb	native	5%
Equisetum arvense	field horsetail	herb	native	2%

Palustrine Forested (PFO) Reference #3

Latin Name	Common Name	Stratum	Nativity	Cover (%)
Fraxinus latifolia	Oregon ash	tree	native	95%
Carex obnupta	slough sedge	herb	native	97%
Phalaris arundinacea	reed canarygrass	herb	non-native	3%

Palustrine Emergent (PEM) Reference #1

Latin Name	Common Name	Stratum	Nativity	Cover (%)
Fraxinus latifolia	Oregon ash	tree	native	10%
Rosa pisocarpa	pea-fruit rose	shrub	native	10%
Cornus sericea	red-osier dogwood	shrub	native	5%
Carex obnupta	slough sedge	herb	native	50%
Stachys cooleyae	coastal hedgenettle	herb	native	10%
Rubus ursinus	trailing blackberry	herb	native	5%
Rumex crispus	curly dock	herb	non-native	3%
Phalaris arundinacea	reed canarygrass	herb	non-native	3%
Poa species	bluegrass species	herb	non-native	2%
Bidens species	beggar's tick	herb	native	1%

Palustrine Emergent (PEM) Reference #2

Latin Name	Common Name	Stratum	Nativity	Cover (%)
Fraxinus latifolia	Oregon ash	tree	native	5%
Carex obnupta	slough sedge	herb	native	50%
Juncus effusus	common rush	herb	native	12%
Veronica americana	American speedwell	herb	native	10%
Bidens cernua	beggar's tick	herb	native	5%
Impatiens capensis	jewelweed	herb	native	3%
Agrostis stolonifera	creeping bentgrass	herb	non-native	2%

Upland Mixed Forest Reference #1

Latin Name	Common Name	Stratum	Nativity	Cover (%)
Pseudotsuga menzeisii	Douglas fir	tree	native	70%
Quercus garryana	Oregon white oak	tree	native	13%
Acer macrophyllum	big leaf maple	tree	native	5%
Symphoricarpos albus	snowberry	shrub	native	80%
Amalanchier alnifolia	serviceberry	shrub	native	5%
Corylus cornuta	hazelnut	shrub/ sm. tree	native	5%
Mahonia aquifolium	Oregon grape	shrub	native	5%
Polystitchum munitum	sword fern	herb	native	6%
Trillium ovatum	Pacific trillium	herb	native	1%

Upland Mixed Forest Reference #2

Latin Name	Common Name	Stratum	Nativity	Cover (%)
Pseudotsuga menzeisii	Douglas fir	tree	native	60%
Quercus garryana	Oregon white oak	tree	native	5%
Acer macrophyllum	big leaf maple	tree	native	10%
Acer circinatum	vine maple	small tree	native	30%
Symphoricarpos albus	snowberry	shrub	native	25%
Physocarpus capitatus	Pacific ninebark	shrub	native	15%
Oemlaria cerasiformis	osoberry	shrub	native	7%
Carex leptopoda	taperfruit shortscale sedge	herb	native	15%
Viola species	violet species	herb	native	6%
osmorhiza chilensis	sweetcicely	herb	native	4%

Appendix K: Offsite Contamination Information DEQ

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California
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September 12, 2019

Mr. Kevin Dana
Oregon Department of Environmental Quality, Northwest Division
Lloyd 700 Building
700 Northeast Multnomah Street, Suite 600
Portland, Oregon 97232

**RE: SUBSURFACE INVESTIGATION RESULTS
42580 NORTHWEST CEDAR CANYON ROAD
BANKS, OREGON
ECSI SITE IDENTIFICATION NO.: 5918
FARALLON PN: 1826-001**

Dear Mr. Dana:

Farallon Consulting, L.L.C. (Farallon) has prepared this letter report to document the results from subsurface investigations conducted at the former Vanderzanden Farm property at 42580 Northwest Cedar Canyon Road in Banks, Oregon (herein referred to as the Site) (Figure 1). The objectives of the subsurface investigations were to evaluate groundwater quality in an area of the Site where soil has been impacted by lead, evaluate potential impacts related to the historical agricultural use of the Site, and further define the nature and extent of lead-impacted soil on the Site.

This letter report provides a description of the Site and relevant background information, the scope of work for the subsurface investigations, and the results and conclusions of the subsurface investigations.

SITE DESCRIPTION AND BACKGROUND

The Site is an approximately 170-acre parcel, including farmland, being prepared for development on the western portion of Banks, Oregon. The southeastern corner of the Site has been impacted by lead shot from the Banks Gun Club on the southeast-adjacent property, and is listed on the Oregon Department of Environmental Quality (DEQ) Environmental Cleanup Site Information Database under Identification No. 5918. During previous environmental investigations conducted at the Site, lead was detected at concentrations ranging from 1,400 to 105,000 milligrams per kilogram (mg/kg) in eight composite soil samples collected at the Site, and at concentrations ranging from 6.9 to 5,400 mg/kg in 76 discrete soil samples collected from the anticipated affected Site area at varying depths; these concentrations exceed the Oregon State background concentration of 34 mg/kg for lead in soil. DEQ has established a residential risk-based concentration (RBC) of 400 mg/kg for lead in soil. Previously documented soil impacts are illustrated on Figure 2. Based on the findings of elevated concentrations of lead in soil, the Site entered the DEQ Voluntary Cleanup Program in July 2014. DEQ requested supplemental characterization activities to determine whether Site groundwater has been impacted by lead and to further delineate the extent of lead impact. The results of the supplemental characterization activities are provided herein.

SCOPE OF WORK

Farallon performed a subsurface investigation at the Site to evaluate groundwater quality on July 7, 2017 (2017 SSI) and performed a subsurface investigation to characterize shallow soil at the Site on August 16, 2018 (2018 SSI). Farallon's scope of work for each investigation is described below.

2017 SSI SCOPE OF WORK

Farallon's scope of work for the 2017 SSI included the collection and analysis of groundwater samples from the southeastern portion of the Site where soil has been impacted by lead. Prior to sample collection, the area near each sample location was cleared for underground utilities by Applied Professional Services, Inc. of North Bend, Washington. Seven Geoprobe direct-push probes were advanced at selected locations based on the existing soil characterization data. A Farallon Scientist observed subsurface conditions and collected groundwater samples during the probing activities.

Temporary wells were built by advancing 0.75-inch polyvinyl chloride pipe with 5 feet of 0.020-inch pre-slotted screen to total boring depth, which was between 15 and 30 feet below ground surface (bgs), in borings GW-1 through GW-7. Reconnaissance groundwater samples were collected by advancing 0.25-inch polyethylene tubing into each temporary well to a depth near the middle of the screened interval and purging with a peristaltic pump. Due to the low production of groundwater, the temporary monitoring wells were dewatered after purging approximately 0.5 to 1 liter, and samples were collected when sufficient recharge occurred to fill the sample containers. Farallon collected one reconnaissance groundwater sample from each of the borings for laboratory analysis.

Seven reconnaissance groundwater samples were collected from borings GW-1 through GW-7, placed directly into laboratory-prepared sample containers, labeled, placed on ice in a cooler, and transported under standard chain-of-custody protocols to Apex Laboratories LLC of Tigard, Oregon for laboratory analysis for total and dissolved lead by U.S. Environmental Protection Agency (EPA) Method 200.8. Two reconnaissance groundwater samples collected from borings GW-1 and GW-2 also were analyzed for total Resource Conservation and Recovery Act (RCRA) 8 metals by EPA Method 200.8 and one reconnaissance groundwater sample collected from boring GW-1 was analyzed for dissolved RCRA 8 metals by EPA Method 200.8. The groundwater sample collection locations are identified on Figure 3. Boring logs are provided in Attachment A. The Chain of Custody form is included with the laboratory analytical reports provided in Attachment B.

Soil cuttings, decontamination water, purge water, and other wastewater generated during field activities were containerized in Oregon State Department of Transportation-approved 55-gallon steel drums with locking lids and stored on the Site pending receipt of laboratory analytical results.

2018 SSI SCOPE OF WORK

Farallon's scope of work for the 2018 SSI included additional soil sampling within the southeastern portion of the Site to evaluate potential impacts related to the historical agricultural use of the Site and further define the nature and extent of lead-impacted soil. In an effort to fully characterize the horizontal and vertical extent of lead-impacted soil, six soil samples were collected from borings SS31, SS32, and SS33 using a stainless-steel hand auger at two discrete depth intervals, 0 to 1.0 foot bgs and 1.0 to 2.0 feet bgs. The sampling locations, along with historical results, are shown on Figure 2. The soil samples were placed directly into laboratory-provided sample containers, labeled, packed on ice, and submitted under standard chain-of-custody procedures to Apex Laboratories of Portland, Oregon. Soil samples were analyzed for lead and arsenic by EPA Method 6020. The Chain of Custody form is included with the laboratory analytical reports provided in Attachment B.

In an effort to evaluate potential impacts related to the historical agricultural use of the Site, eight five-point composite soil samples were collected across four quadrants, NW-COMP, NE-COMP, SW-COMP, and SE-COMP, and at two depth intervals, 0 to 0.5 foot bgs and 0.5 to 1.0 foot bgs. The discrete soil samples were composited by mixing with a stainless-steel spoon in a stainless-steel mixing bowl, which were decontaminated after compositing. The quadrant and composite point locations are shown on Figure 4. The soil samples were placed directly into laboratory-provided sample containers, labeled, packed on ice, and submitted under standard chain-of-custody procedures to Apex Laboratories of Portland, Oregon. Composite soil samples were analyzed for organochlorine pesticides by EPA Method 8081B, organophosphorus pesticides by EPA Method 8270D, and 17 metals by EPA Method 200/6000. The Chain of Custody form is included with the laboratory analytical reports provided in Attachment B.

RESULTS

The results from laboratory analyses of soil and reconnaissance groundwater are presented below. Where appropriate, the results are compared with DEQ RBCs for relevant potential receptors, published regional background concentrations, and DEQ Ecological Risk Assessment Level II Screening Level Values (SLVs). Groundwater analytical results are summarized in Table 1. Soil analytical results are summarized in Tables 2 and 3. Laboratory analytical reports are provided in Attachment B.

Groundwater Samples

During the 2017 SSI, groundwater was encountered at depths of between approximately 6 and 15 feet bgs at borings GW-1 through GW-7. Based on the topography of the Site and the presence of a creek on the northwestern portion of the Site, groundwater flow direction is expected to be toward the west-northwest. Soil encountered during the 2017 SSI consisted of sandy silt from the ground surface to depths of between approximately 6 and 15 feet bgs, underlain by sandy silt with clay to a depth of at least 23 to 30 feet bgs. In all seven boring locations where reconnaissance groundwater samples were collected, the well screen needed to be set at depths below the groundwater table in order to obtain adequate groundwater flow into the well screen due to the low transmissivity of the clayey soil encountered. Total metals were detected at concentrations exceeding laboratory detection limits in several groundwater samples collected; however, the reported concentrations are not considered representative of groundwater conditions based on the high turbidity of the samples due to the high presence of colloids in reconnaissance groundwater.

The highest concentration of dissolved lead detected was 1.5 micrograms per liter (µg/l), which is significantly less than the DEQ RBC of 15 µg/l for ingestion and inhalation from tap water for residential and occupational receptors. Dissolved arsenic was detected at a concentration of 9.64 µg/l, which exceeds the DEQ RBCs of 0.052 and 0.31 µg/l for ingestion and inhalation from tap water for residential and occupational receptors, respectively, but is significantly less than regional background concentrations, which have been documented as exceeding 50 µg/l.

Soil Samples

Lead was detected at concentrations exceeding laboratory reporting limits in five composite soil samples and four discrete soil samples submitted for analysis. Lead was detected at concentrations between 33.2 and 65.2 mg/kg, generally within published background metals concentrations for the region, in composite soil samples collected from the northeastern and southeastern quadrants at depths of between 0.0 and 0.5 feet bgs. Lead was detected at concentrations between 758 and 5,490 mg/kg in composite soil samples collected from the southwestern quadrant at depths of between 0 and 1.0 foot bgs, and a discrete soil sample collected from boring SS31; these concentrations exceed the DEQ RBC for soil ingestion, dermal contact, and inhalation under a residential receptor scenario.

Several metals were detected at concentrations exceeding laboratory reporting limits but less than DEQ RBCs and SLVs. Arsenic was detected at a concentration of 31.4 mg/kg, which exceeds the published background concentration and DEQ RBCs for soil ingestion, dermal contact, and inhalation under a residential receptor scenario, in the composite soil sample collected from the southwestern quadrant at depths of between 0 and 0.5 foot bgs. Antimony was detected at a concentration of 44.9 mg/kg, which exceeds the published background concentration and DEQ Ecological Risk Assessment Level II SLVs, in the composite soil sample collected from the southwestern quadrant at depths of between 0 and 0.5 foot bgs.

Most organochlorine and organophosphorus pesticides were not detected at concentrations exceeding laboratory reporting limits in the four composite samples collected at depths of between 0 and 0.5 foot bgs. 4,4’-DDE and 4,4’-DDT were detected at concentrations exceeding laboratory reporting limits but less than DEQ RBCs and SLVs in all four composite samples collected at depths of between 0 and 0.5 foot bgs.

CONCLUSIONS

Based on the results of Farallon’s 2017 subsurface investigation, groundwater at the Site has not been adversely impacted from lead-impacted soil at the Site related to the south-adjacent former shooting range. Dissolved lead and arsenic were detected at low concentrations in groundwater samples collected from the Site during the 2017 SSI. All detected concentrations of lead were significantly less than applicable RBCs. One groundwater sample also was analyzed for dissolved arsenic; arsenic was detected at concentrations exceeding applicable RBCs but within published background values.

Based on the results of Farallon's 2018 investigation to evaluate potential impacts related to the historical agricultural use of the Site, few pesticides were detected at concentrations exceeding laboratory reporting limits in shallow composite soil samples collected within the top 0.5 foot bgs, and all detected concentrations were significantly less than regulatory screening levels.

Based on the results of previous soil investigations performed by others and the additional soil investigations conducted by Farallon, the horizontal extent of lead contamination appears fully delineated. The aerial extent of lead-impacted soil at the Site at concentrations exceeding DEQ RBCs for occupational receptors totals 117,146 square feet from depths of 0 to 1 foot bgs and 28,175 square feet from depths of 1 to 2 feet bgs.

Wolverine Financial LLC and Lone Oak Land and Investment Company, LLC are interested in identifying Site cleanup options that are protective of human health and the environment and that will allow economic development of the lead-impacted portion of the Site for industrial use. Farallon will work cooperatively with DEQ and Pacific Community Design, the development consultant for Wolverine Financial LLC and Lone Oak Land and Investment Company, LLC, to identify acceptable cleanup approaches for the portion of the Site impacted by lead.

Farallon appreciates the opportunity to provide environmental consulting services for this project. Please contact the undersigned at (503) 280-4635 if you have questions or need additional information.

Sincerely,

Farallon Consulting, L.L.C.

Jennifer Whaler
Associate Environmental Scientist

Craig Ware, R.G.
Principal Hydrogeologist

REGISTERED PROFESSIONAL
OREGON
CRAIG W. WARE
#G1344
GEOLOGIST

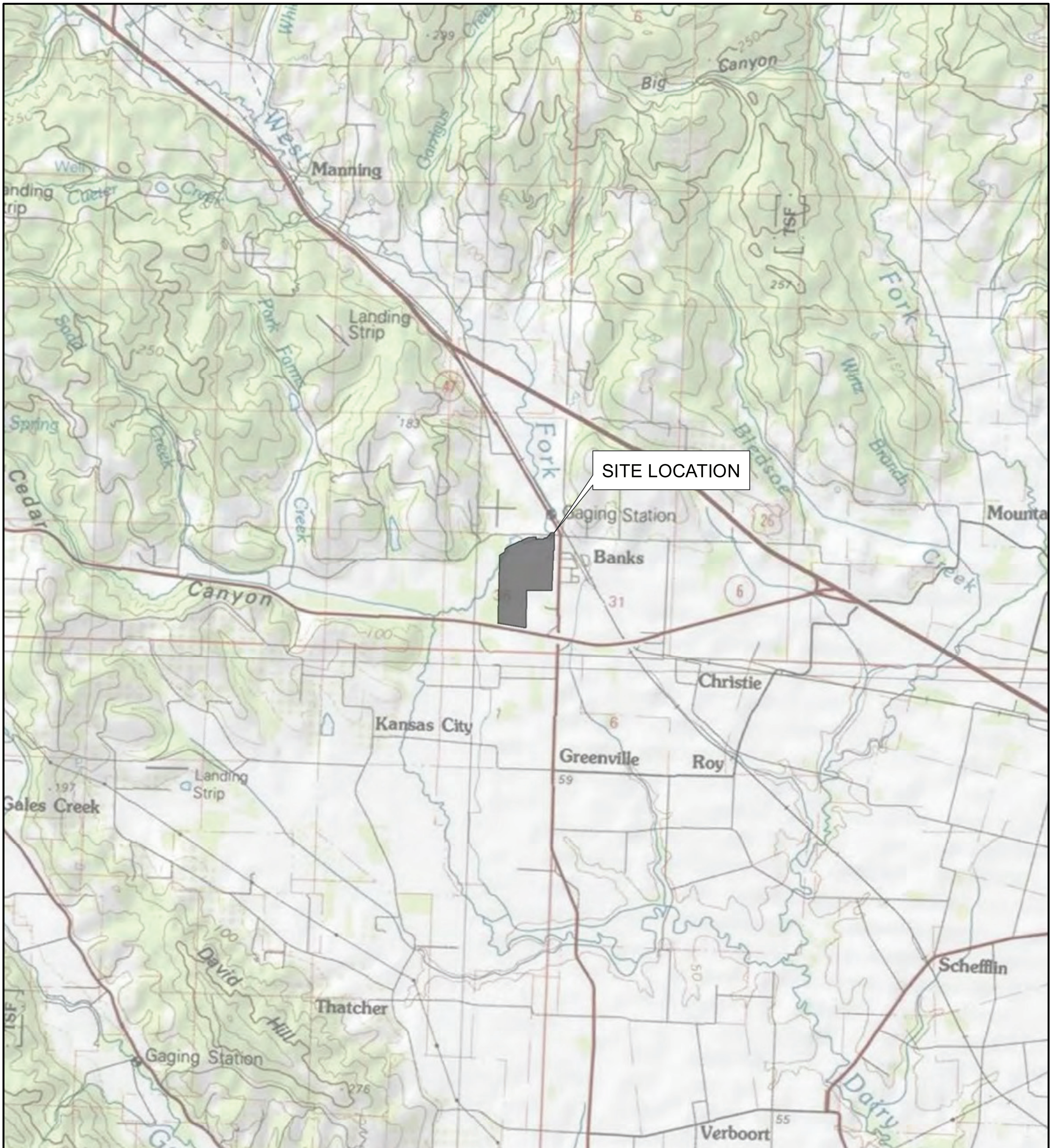
Attachments: Figure 1, *Site Plan*
Figure 2, *Extent of Lead Exceeding RBCs in Soil; Geosyntec, Amec, and Farallon Sample Results*
Figure 3, *Reconnaissance Groundwater Sampling Locations Map*
Figure 4, *Historical Agricultural Use Investigation Sampling Locations*
Table 1, *Reconnaissance Groundwater Analytical Results for Metals*
Table 2, *Soil Analytical Results for Pesticides*
Table 3, *Soil Analytical Results for Metals*
Attachment A, Boring Logs
Attachment B, Laboratory Analytical Reports

GF/JW/CW:tlc

FIGURES

SUBSURFACE INVESTIGATION RESULTS
42580 Northwest Cedar Canyon Road
Banks, Oregon

Farallon PN: 1826-001



REFERENCE: 7.5 MINUTE USGS QUADRANGLE FOREST GROVE, OREGON, DATED 2011

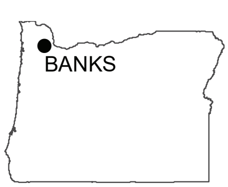


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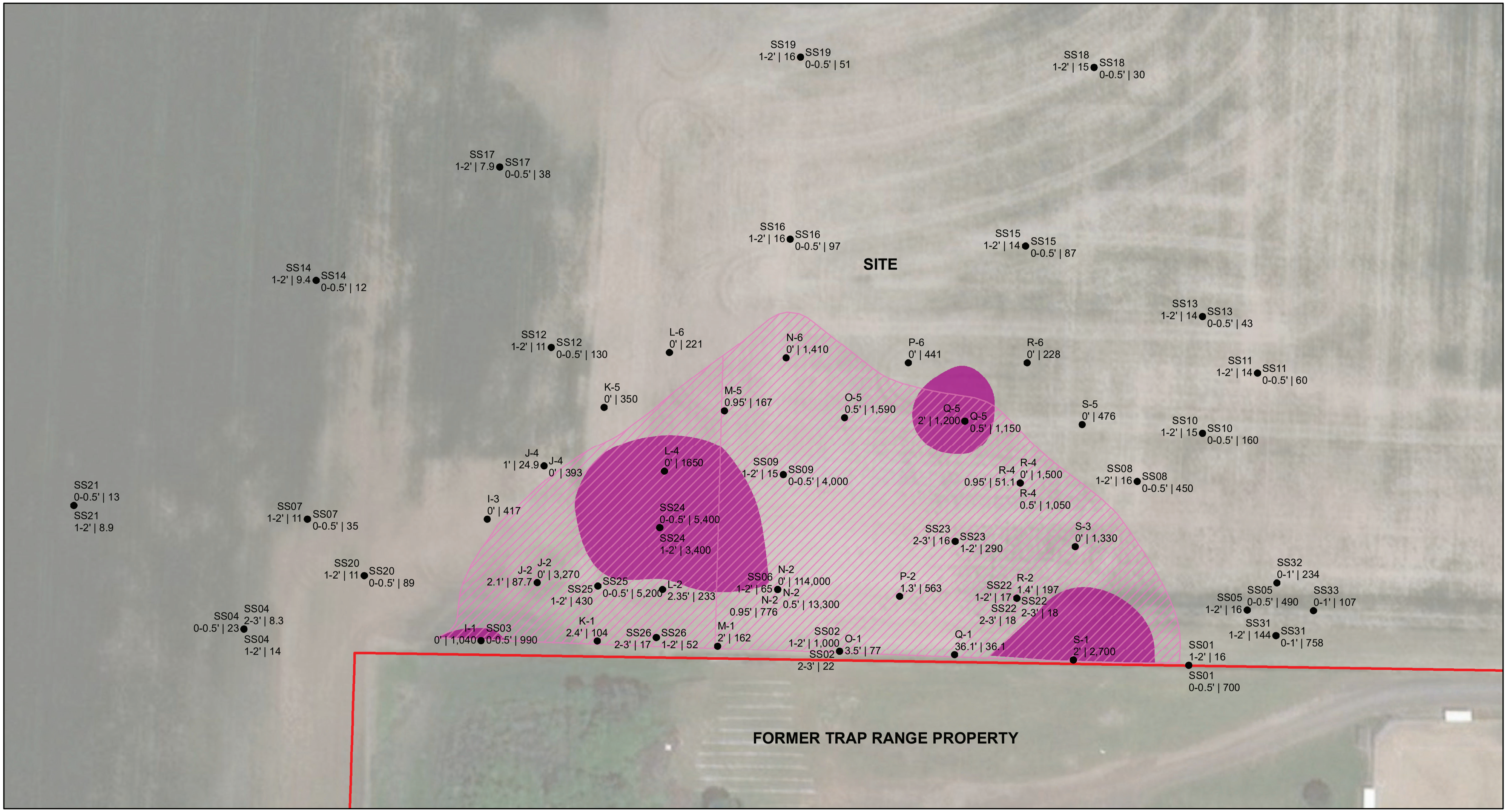
FIGURE 1

SITE PLAN
42580 NORTHWEST CEDAR CANYON ROAD
BANKS, OREGON

FARALLON PN: 1826-001

Drawn By: pemahiser | Checked By: PE | Date: 8/3/2018 | Disc Reference:

Document Path: Q:\Projects\1826 Wolverine\Mapfiles\Figure 1_Site Vicinity Map.mxd



LEGEND

PROPERTY BOUNDARY

EXTENT OF LEAD ABOVE OCCUPATIONAL RBC <1 FOOT (2.69 ACRES)

EXTENT OF LEAD ABOVE OCCUPATIONAL RBC 1-2 FEET (0.65 ACRES)

NOTES:
SAMPLE ID
DEPTH IN FEET BGS | LEAD CONCENTRATION
THE OCCUPATIONAL, CONSTRUCTION WORKER, AND EXCAVATION WORKER RBC FOR SOIL INGESTION, DERMAL CONTACT, AND INHALATION IS 800 PPM.
RBC = RISK BASED CONCENTRATION
PPM = PARTS PER MILLION
SQFT = SQUARE FEET
ALL LOCATIONS ARE APPROXIMATE
FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION.

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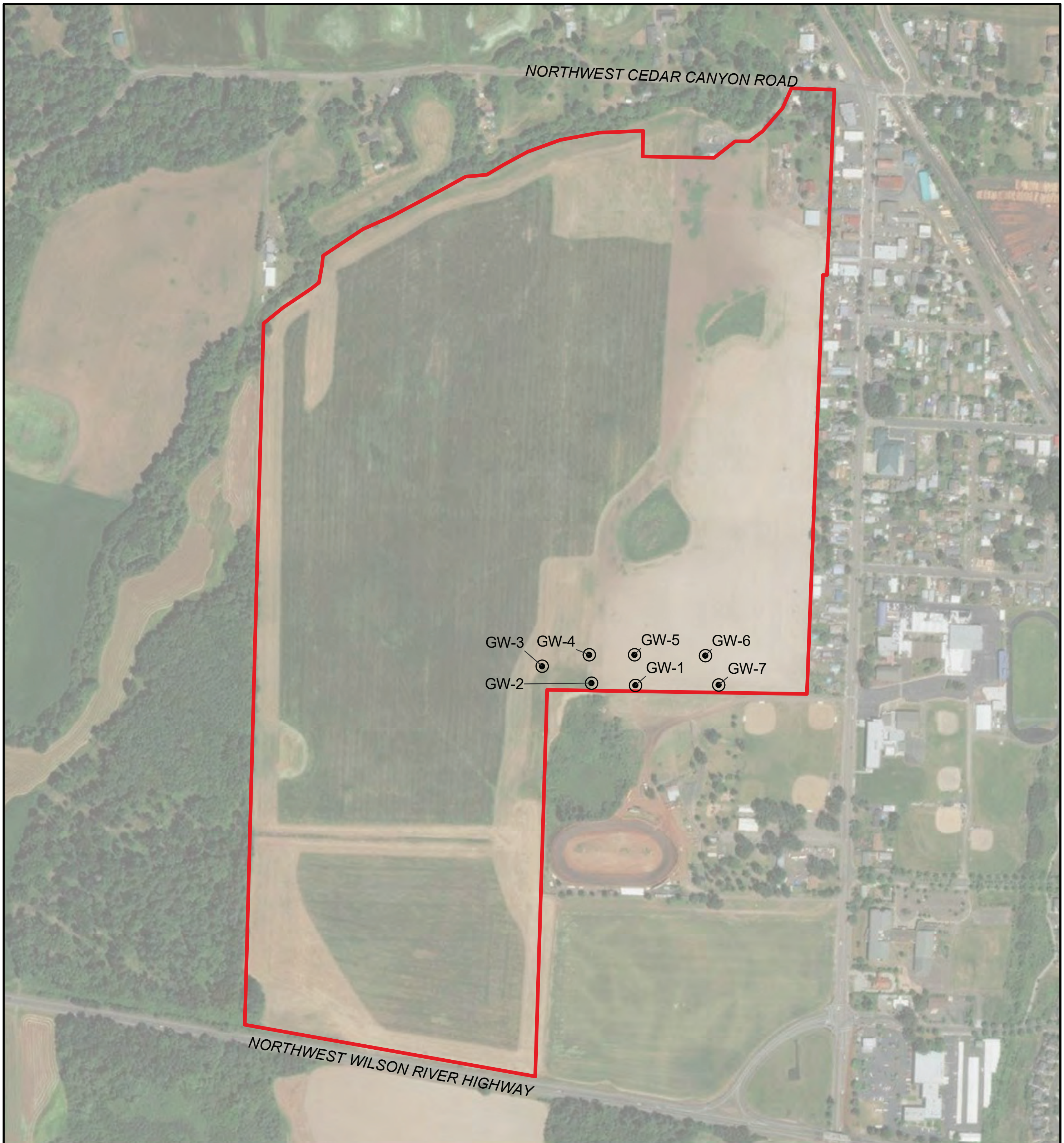
FIGURE 2

EXTENT OF LEAD EXCEEDING RBCs IN SOIL GEOSYNTEC, AMEC, AND FARALLON SAMPLE RESULTS 42580 NORTHWEST CEDAR CANYON ROAD BANKS, OREGON

FARALLON PN: 1826-001

Drawn By: jjones | Checked By: JW | Date: 3/29/2019 | Disc Reference:

Document Path: Q:\Projects\1826 Wolverine\Mapfiles\Figure 2_Lead Soil RBCs_FARALLON2018.mxd



LEGEND

- BORING AND GROUNDWATER SAMPLE LOCATIONS
- APPROXIMATE SITE BOUNDARY

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FIGURE 3

RECONNAISSANCE GROUNDWATER SAMPLING LOCATIONS MAP
42580 NORTHWEST CEDAR CANYON ROAD
BANKS, OREGON

FARALLON PN: 1826-001

Drawn By: pemahiser | Checked By: JW | Date: 8/25/2017 | Disc Reference:
Document Path: Q:\Projects\1826 Wolverine\Figure 3_GWSampling.mxd

Exhibit D
Anticipated Credits and Credit Release Schedule

The number of credits generated by wetland and waters restoration, creation, enhancement, and buffers at the Bank will be determined by the Co-chair Agencies in consultation with the IRT. Credit releases are dependent on accomplishing specific milestones and meeting performance standards up to that date.

The credit summary tables below display the anticipated credits that will be generated from Bank; the actual credit yield will be based on applicable ratio and actual area of performance standard achieved. Please note that there are 11.99 acres within the Bank project area that will be used for Clean Water Services offsite mitigation, and 2.53 acres of access road and wildlife viewing areas, that are not included in the credit tables because these areas will not generate mitigation bank credit.

Phase 1 Wetland Credit Table

Area #	Method (Restoration, Enhancement, Buffer, etc.)	Area (acres)	Ratio	Credits
1	Wetland Restoration	20.79	1:1	20.79
2	Wetland Creation (in historic hydric soils, no soil disturbance)	31.99	1:1	31.99
3	Wetland Creation (modifier (-0.5) soil disturbance)	9.03	1.5:1	6.02
4	Wetland Enhancement	0.91	3:1	0.30
5	Mitigation Buffer- Wetland	3.16	5:1	0.63
6	Mitigation Buffer- Riparian Upland	6.02	10:1	0.60
5	Mitigation Buffer- Upland	3.87	10:1	0.39
6	Baseline Wetland- No Credit	2.66	0	0
Totals		78.43		60.72

Phase 1 Waters (Stream) Credit Table

Area #	Method (Restoration, Enhancement, Buffer, etc.)	Area (acres)	Linear Feet	*Credits
1	Perennial Stream Enhancement	0.95	1,080	0.95
2	Intermittent Stream Enhancement	1.30	715	1.30
3	Intermittent Stream Restoration and Creation	3.20	3,602	3.20
Totals		5.45	5,397	5.45

**credits based on a 1:1 ratio and acreage; if the stream mitigation program uses linear feet and/or modifier rather than acreage, the number of credits will be updated.*

Phase 2 Wetland Credit Table

Area #	Method (Restoration, Enhancement, Buffer, etc.)	Area (acres)	Ratio	Credits
1	Wetland Restoration	2.81	1:1	2.81
2	Wetland Creation (in historic hydric soils, no soil disturbance)	21.69	1:1	21.69
3	Wetland Creation (modifier (-0.5) soil disturbance)	1.28	1.5:1	0.85
4	Wetland Enhancement	2.50	3:1	0.83
5	Baseline Wetland No Credit	0.93	0	0
6	Mitigation Buffer- Wetland	2.19	5:1	0.44
7	Mitigation Buffer- Upland	2.21	10:1	0.22
Totals		33.61		26.84

CREDIT RELEASE SCHEDULE

Credit Release #	Year	Performance Standards and Milestones Met	Restoration and Creation Credits Released (cumulative)	Enhancement and Buffer Credits Released (cumulative)	Perennial and Intermittent Stream Credits Released (cumulative)	Total Credits Released (cumulative)
Phase 1						
1	0	Approval of MBI, PLS Survey of Bank Boundary, Recording of Deed Restriction for Phases 1 and 2, Posting of Financial Assurance	15% (8.82 credits)	15% (0.51 credit)	15% (0.81 credits)	9.33 wetland, 0.81 stream
2	0	As-Built Report, completion of initial seeding and planting	15%, 8.82 (30%, 17.64)	15%, 0.51 (30%, 1.03)	15%, 0.82 (30%, 1.63)	18.67 wetland, 0.82 stream
3	1	1st Growing Season Performance Standards		10%, 0.34 (40%, 1.38)		19.01 wetland, 1.63 stream
4	2	2nd Growing Season Performance Standards		10%, 0.34 (50%, 1.72)		19.35 wetland, 1.63 stream
5	3	3rd Growing Season Performance Standards		Up to 10%, 0.34 (60%, 2.07)		19.69 wetland, 1.63 stream
6	4	4th Growing Season Performance Standards; *Post-Construction Delineation Concurred; 60% of Endowment Funded;	Up to 40%, 23.52 (70%, 41.1)	10%, 0.34 (70%, 2.41)	Up to 40%, 2.18 (70%, 3.81)	43.51 wetland, 3.81 stream
7	5	5th Growing Season Performance Standards; 80% of Endowment Funded;	10%, 5.88 (80%, 47.04)	10%, 0.34 (80%, 2.76)	10%, 0.54 (80%, 4.36)	49.8 wetland, 4.36 stream
8	6+	** Submit Binding Agreement for Site Stewardship for Phase 1 for review by IRT and approval by DSL; DSL approval of any additional protection arrangements; Co-chair Agencies approve updates to the LTMP; funding mechanism completed.	20%, 11.76 (100%, 58.8)	20%, 0.69 (100%, 3.45)	20%, 1.09 (100%, 5.45)	62.25 wetland, 5.45 stream
Phase 2						
1	0	As-Built Report, Initial Planting and Seeding Complete, Posting of Fiancial Assurance, Recording of Easement on Tax Lot 600 or Lot-Line Adjustment for Narrow Strip Adjacent to Tax Lot 900	30% (7.60 credits)	30% (0.50 credits)		8.10 wetland
2	1	1st Growing Season Performance Standards		10%, 0.16 (40%, 0.67)		8.26 wetland
3	2	2nd Growing Season Performance Standards		10%, 0.16 (50%, 0.83)		8.42 wetland
4	3	3rd Growing Season Performance Standards		10%, 0.16 (60%, 1.00)		8.58 wetland
5	4	4th Growing Season Performance Standards; *Post-Construction Delineation Concurred; 60% of Endowment Funded;	Up to 40%, 10.14 (70%, 17.74)	10%, 0.16 (70%, 1.17)		18.91 wetland
6	5	5th Growing Season Performance Standards; 80% of Endowment Funded;	10%, 2.53 (80%, 20.28)	10%, 0.16 (80%, 1.34)		21.62 wetland
7	6+	** Submit Binding Agreement for Site Stewardship for Phase 2 for review by IRT and approval by DSL; DSL approval of any additional protection arrangements; Co-chair Agencies approve updates to the LTMP; Funding Mechanism Completed.	20%, 5.07 (100%, 25.35)	20%, 0.33 (100%, 1.67)		27.02 wetland

*Credits >30% for wetland creation and restoration areas will be released after delineation proves that wetland criteria have been achieved. If wetland acreage gains are apparent earlier, Co-chairs may make a partial release earlier.

**The release associated with long-term package may occur as soon as performance standards have been met for 3 years and the % of the endowment funded is equal to the to the % credits released. Therafter, each incremental credit release must have an equivalent % of the endowment funded.

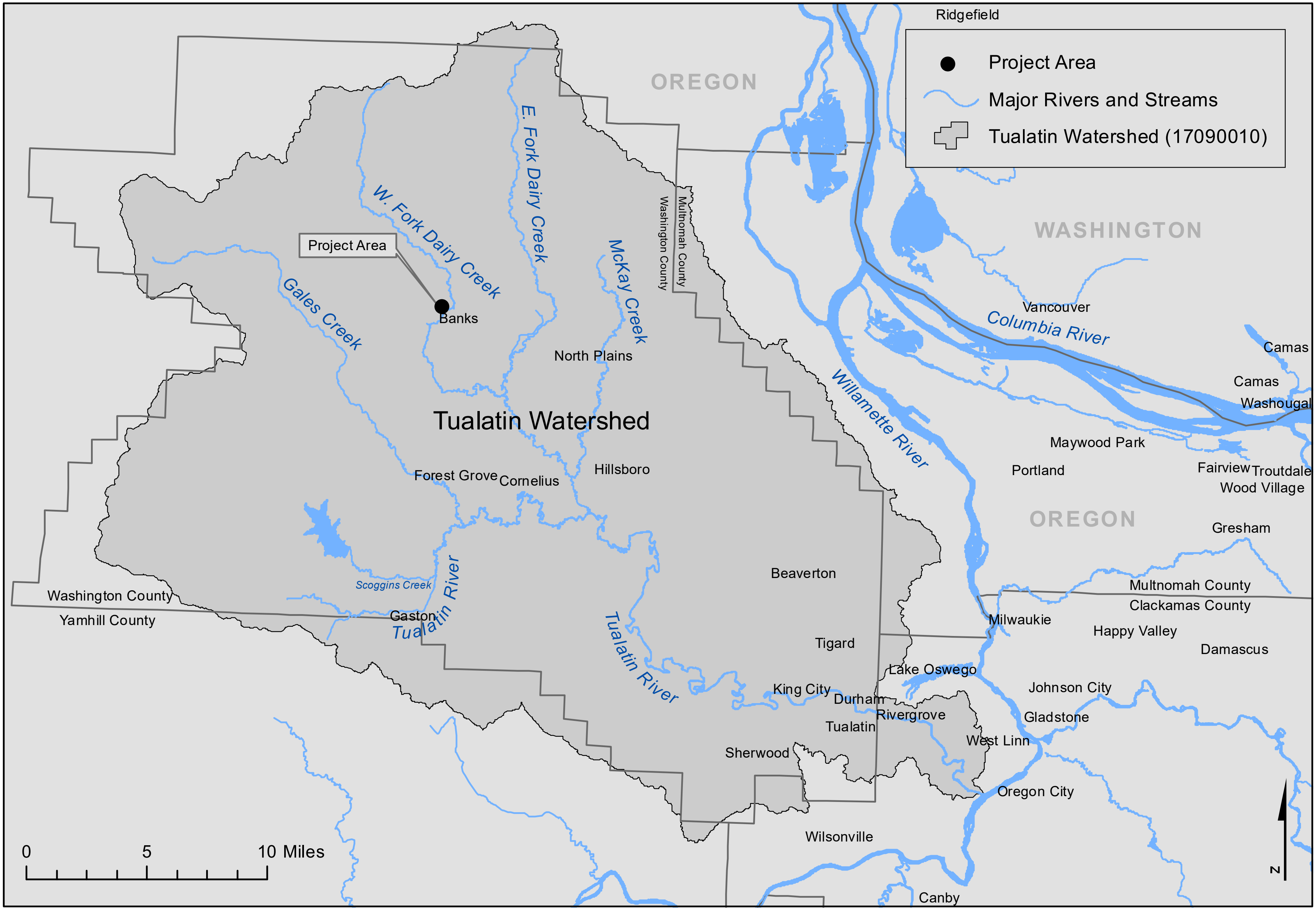
NOTE: If a performance standard(s) is not met for a year causing a delay in the credit release schedule but is met in a future year, the delayed credit release can be requested at that time.

Exhibit E
Service Area Map and Description

The Dairy Creek Mitigation Bank is proposed to have a service area within the Tualatin River Watershed, 4th Field Hydrologic Unit Code (HUC) 17090010, below 1,000 feet in elevation. The NRCS mapped Wapato silty clay loam (hydric) observed within the project area has been found to occur within the region at elevations between 100 and 2,500 feet. The DCMB is proposing a lower service area elevation limit of 1,000 feet because most of the bank site is located within a low elevation floodplain (at approximately 190ft in elevation).

Please refer to the following service area map for the DCMB.

Figure 5: Service Area Map



Rivers, streams, watershed boundaries, cities and county lines provided by RLIS.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Prospectus
\Prospectus Resubmit 2020\.mxds\Figure 5. Service Area Map 200324.mxd

greenbanks

Exhibit F
Property Protection Instruments

Please see the following proposed Declaration of Covenants and Restrictions and Access Easement template that will be recorded for the Bank. The Declaration of Covenants and Restrictions and Access Easement will be recorded for the entire Bank project area, forboth phases, prior to the first credit release on Phase 1.

It is anticipated a Conservation Easement will be conveyed to a qualified Long-Term Manager for Phase 1, along with associated documents, including an updated LTMP, a Baseline Documentation Report, and a Stewardship Funding Agreement, if necessary, will be developed after the Bank has matured for 3 or 4 years. These arrangements, and the associated package of documents, should be reviewed by the IRT and approved by the Co-Chairs, finalized, secured, recorded and/or executed before the final credit release of each Phase and bank closure. A Conservation Easement will be recorded for Phase 1 of the Bank at the long-term management phase and a lot line adjustment will be completed prior to Phase 2 long-term phase. Finalization of the Phase 2 long-term management package will include either an additional or updated conservation easement or conveyance of fee title ownership of both Phase 1 and Phase 2 Bank areas.

Metro is the proposed Long-Term Land Manager. Metro is a regional government entity for the Portland metropolitan area, covering areas of Multnomah, Clackamas, and Washington counties. Metro owns and manages over 17,000 acres of natural areas. Metro has scientific staff which manage these natural areas and utilize contractors to complete land management tasks. Metro holds conservation easements and fee-title ownership of many properties managed for conservation purposes. Metro also has the infrastructure, legal and administrative support, to ensure that the DCMB is protected for conservation purposes in perpetuity. Please see the following Letter of Intent from Metro, indicating their interest in long-term stewardship of the site after mitigation obligations have been released.

After recording, return to:

DCMB LLC
6770 Canyon Drive
Portland, OREGON 97225

DECLARATION OF COVENANTS AND RESTRICTIONS and
ACCESS EASEMENT
FOR THE DAIRY CREEK MITIGATION BANK

Corps permit #NWP-2019-127, DSL permit 61846

THIS DECLARATION is made by DCMB LLC, ("Declarant").

RECITALS

1. Declarant is the owner of the real property described in Exhibit "A," attached hereto and by this reference incorporated herein (the "Property"), and has designated the Property as a compensatory mitigation site in accordance with Removal-Fill Permit # 61846 (the "DSL Permit") approved by the Oregon Department of State Lands ("Department"), and the Department of the Army permit #NWP-2019-127("Corps permit") approved by the US Army Corps of Engineers ("Corps").

2. Declarant desires and intends to provide for the perpetual protection and conservation of the wetland and waterway functions and values of the Property and for the management of the Property and improvements thereon, and to this end desires to subject the Property to the covenants, restrictions, easements and other encumbrances hereinafter set forth, each and all of which is and are for the benefit of the Property;

3. The Department has accepted the mitigation plan for the Property under ORS 196.800 et seq, and the Corps has likewise accepted the mitigation plan under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act.

ARTICLE 1
DEFINITIONS

1.1 "Declaration" shall mean the covenants, restrictions, easement, and all other provisions set forth in the Declaration of Covenants and Restrictions.

1.2 "Declarant" shall mean and refer to DCMB LLC, the owner of the Property, and the owner's heirs, successors, and assigns.

1.3 "DSL permit" shall mean the final document approved by the Department that includes the mitigation plan and which formally establishes the mitigation site and stipulates the terms and conditions of its construction, operation and long-term management. A copy of the DSL permit may be obtained at the Department of State Lands, 775 Summer St. NE, Salem, OR 97301; phone 503-986-5200.

1.4 "Corps permit" shall mean the final document approved and issued by the Corps which stipulates the terms and conditions of the construction of the compensatory mitigation sites that result in the discharge of dredged or fill material into waters of the U.S.. A copy of the Corpspermit associated with this Declaration may be obtained at the office of the US Army Corps of Engineers, Regulatory Branch, 333 SW First Ave., Portland, OR 97208; Phone503-808-4373.

1.5 "MBI" shall mean the final Mitigation Bank Instrument, approved by the Corps and Department, which includes the mitigation plan describing where and how the compensatory mitigation will be completed, monitored, managed, and maintained.

1.6 "Property" shall mean and refer to all real property subject to this Declaration, as more particularly set forth in Article 2 below and described in Exhibit "A."

- "Tract 1" shall mean the portion of the Property that includes approximately 97.5 acres of Tax Lot 800 and Tax Lot 603, and which will be developed into Phase 1 of the mitigation bank project.
- "Tract 2" shall mean the portion of the Property that includes approximately 34.5 acres of Tax Lot 800, immediately south of and adjacent to Tract 1, which will be developed into Phase 2 of the mitigation bank project.

ARTICLE 2
PROPERTY SUBJECT TO THIS DECLARATION

The Property described in Exhibit A is and shall be held, transferred, sold, conveyed and occupied subject to this DeclarationThis Declaration shall not encumber Tract 2 until construction commences during Phase 2 of the mitigation bank; provided, however, that pre-Phase 2 activities (such as agriculture) on Tract 2 will not conflict with the mitigation goals and objectives of Phase 1 of the mitigation bank and will not interfere with the technical feasibility, implementation, or long-term success of Phase 2.

{*Exhibit "A" must be a surveyed legal description, and map illustrating the specific area subject to this Declaration. The map legend shall indicate the approximate locations of wetlands, streams, any existing structures such as roads, utility lines, or stormwater treatment features, and any easements located within or across the Property.}*

ARTICLE 3
DECLARANT REPRESENTATIONS

Declarant represents and warrants that after reasonable investigation, and to the best of its knowledge, that no hazardous materials or contaminants are present that conflict with the conservation purposes intended; that the Property is in compliance with all federal state, and local laws, regulations, and permits; that there is no pending litigation affecting, involving, or relating to the Property that would conflict with the intended conservation use; and that the Property is free and clear of any and all liens, claims, restrictions, easements and encumbrances that would interfere with the ability to protect and conserve the Property.

ARTICLE 4
GENERAL DECLARATION

Declarant, in order to discharge in part its obligations under the DSL permit and the Corps permit and the MBI, declares that the Property shall be held, transferred, sold, conveyed andoccupied subject to the covenants, restrictions, easements and other encumbrances in this Declaration, in order that it shall remain substantially in its restored, enhanced, preserved,open and natural condition, in perpetuity. The terms and conditions of this Declaration shall be both implicitly and explicitly included in any subsequent transfer, conveyance, orencumbrance affecting all or any part of the Property. No modification or release of this Declaration will be effective unless authorized in writing by the Department and by the Corps. Any amendments must be signed by the Department and must be recorded in the official records of the county in which the Property is located. Proof of that recording will be provided to the Department and Corps in accordance with the Notice provision in Article 7 Subpart A.

ARTICLE 5
USE RESTRICTIONS, MANAGEMENT RESPONSIBILITIES, AND RESERVED RIGHTS

Declarant is subject to any and all easements, covenants and restrictions of record affecting the Property.

A. USE RESTRICTIONS. Except as necessary to conduct, remediate or maintain the mitigation purposes of the Property consistent with the DSL permit the Corps permit, and the MBI, the actions prohibited by this covenant include:

1. There shall be no removal, destruction, cutting, trimming, mowing, alteration or spraying with biocides of any native vegetation in the Property, nor any disturbance or change in the natural habitat of the Property unless it promotes the mitigation goals and objectives established for the Property by the MBI. Hazard trees that pose a specific threat to existing structures including fences or pedestriantrails may be felled and left on site. Dry grass only may be mowed after July1 to abate fire hazard.
2. There shall be no agricultural, commercial, or industrial activity undertaken or allowed in the Property; nor shall any right of passage across or upon the Property be allowed or granted if that right of passage is used in conjunction with agricultural, commercial or industrial activity.
3. No domestic animals shall be allowed to graze or dwell on the Property.
4. There shall be no filling, excavating, dredging, mining or drilling; no removal of topsoil, sand, gravel, rock minerals or other materials, nor any storage nor dumping of ashes, trash, garbage, or of any other material, and no changing of the topography of the land of the Property in any manner once the wetlands are constructed unless approved in writing by the Department and by the Corps.
5. There shall be no construction or placing of buildings, mobile homes, unauthorized overnight camping or semi-permanent/ permanent encampments, advertising signs, billboards or other advertising material, vehicles or otherstructures on the Property.

6. There shall be no legal or de facto division, subdivision or partitioning of the Property.
7. Use of motorized off-road vehicles is prohibited except on existing roadways,and for monitoring, maintenance, and oversight purposes by the owner or his designee.
8. There shall be no hunting or trapping of native fauna. There shall be no collection of native seeds, berries, tubers, or any other part of native plants without the permission of the Declarant.

B. MANAGEMENT RESPONSIBILITIES. Declarant shall take all reasonable action to prevent the unlawful entry and trespass by persons whose activities may degrade or harm the mitigation purposes of the Property or that are otherwise inconsistent with this Declaration.

C. RESERVED RIGHTS. Declarant reserves all other rights accruing from Declarant's ownership of the Property including but not limited to the exclusive possession of the Property, the right to transfer or assign Declarant's interest in the same; the right to take action necessary to prevent erosion on the Property, to protect the Property from losing its wetland or waterway functions and values, or to protect public health or safety; the right to prevent trespass and control access by the general public; and the right to use the Property in any manner not prohibited by this Declaration and which would not defeat or diminish the conservation purpose of this Declaration.

The Declarant specifically reserves the right to use the Property for the purposes of bird and wildlife viewing from designated access road and lookouts, which reserved rights are deemed to be consistent with the purposes enumerated in the permit(s) and MBI.

ARTICLE 6
EASEMENT (RIGHT OF ENTRY)

Declarant hereby grants to the Department an easement and right of entry and grants to the Corps a right of entry on the Property for the purpose of physically accessing the Property at all reasonable times to inspect the Property in order to monitor and to ascertain whether there has been compliance with this Declaration DSL permit, Corps permit, and MBI. In the event that the Property lacks access via a public road or other common area, Declarant grants to the Department an easement, and to the Corps a right of entry, over and across any other property of Declarant, the use of which is necessary to access the Property. If either the Department of the Corps finds it necessary to claim financial assurances to implement the MBI or remediate performance failures, the Declarant hereby grants access and permission to the agencies and/or their agents to conduct such work.

ARTICLE 7
GENERAL PROVISIONS

A. NOTICE. The Department and the Corps shall be provided with a 60-day advance written notice of any legal action concerning this Declaration, or of any action to extinguish, void or modify this Declaration, in whole or in part. This Declaration, and the covenants, restrictions, easements and other encumbrances contained herein, are intended to survive foreclosure, tax sales, bankruptcy proceedings, zoning changes, adverse possession, abandonment, condemnation and similar doctrines or judgments affecting the Property. A copy of this recorded Declaration shall accompany said notice.

B. VALIDITY. If any provision of this Declaration, or the application thereof to any person or circumstance, is found to be invalid, the remainder of the provisions of this Declaration, or the application of such provisions to persons or circumstances other than those as to which it is found to be invalid, as the case may be, shall not be affected thereby.

IN WITNESS WHEREOF, the undersigned being Declarant herein, has executed this instrument this____________day of_______________________, 20_____.

______________________{*Owners name*}
______________________County, Oregon

By:_________________________________
Title: ______________________________

STATE OF OREGON)
) ss:
County of___________)

This instrument was acknowledged before me on____________________(*date*) by
____(*name of person*) as
____(*title*)
of Applicant firm's name of__________________County, Oregon.

____
Signature of Notarial Officer
My Commission Expires: ____________________

GRANTEE: The State of Oregon, Department of State Lands, approves Declarant's conveyance of an easement in favor of the Department.

By:________________________________
Title:______________________________
Date:______________________________

Attachment:
Exhibit A, legal description and labeled map of the Property

PACIFIC COMMUNITY DESIGN

EXHIBIT A

May 10, 2022

LEGAL DESCRIPTION Job No. 501-032
Parcel 1

A portion of "Adjusted Tax Lot 800", as described in Document No. 2017-002188, Washington County Deed Records, in the Northeast Quarter of Section 36, Township 2 North, Range 4 West, Willamette Meridian, Washington County, State of Oregon, more particularly described as follows:

BEGINNING at the Southwest corner of the Northeast Quarter of said Section 36;

thence along the westerly line of said Northeast Quarter of Section 36, North 00°01' 28" West, a distance of 1593.20 feet, more or less, to the center of West Dairy Creek;

thence along said center of West Dairy Creek the following six courses:

North 41°25' 55" East, a distance of 94.96 feet,

North 54°46' 40" East, a distance of 71.85 feet,

North 66°31' 17" East, a distance of 59.43 feet,

North 40°04' 02" East, a distance of 56.32 feet,

North 12°00' 13" East, a distance of 35.80 feet,

North 05°20' 42" West, a distance of 74.73 feet to the center of a drainage ditch;

thence along said center of a drainage ditch the following seven courses:

North 85°02' 29" East, a distance of 20.78 feet,

North 62°04' 36" East, a distance of 99.67 feet,

North 60°05' 31" East, a distance of 130.59 feet,

North 59°50' 10" East, a distance of 243.96 feet,

North 57°57' 05" East, a distance of 141.06 feet,

North 59°15' 20" East, a distance of 83.77 feet,

North 68°48' 28" East, a distance of 17.60 feet to said center of West Dairy Creek,

12564 SW Main Street, Tigard, OR 97223 ♦ [T] 503-941-9484 [F] 503-941-9485

thence along said center of West Dairy Creek the following thirteen courses:

North 68°48' 29" East, a distance of 29.85 feet,

North 85°28' 48" East, a distance of 58.52 feet,

North 62°30' 00" East, a distance of 75.31 feet,

North 51°26' 35" East, a distance of 67.61 feet,

North 60°25' 27" East, a distance of 41.90 feet,

North 69°38' 05" East, a distance of 104.80 feet,

North 70°19' 17" East, a distance of 160.32 feet,

North 02°21' 46" East, a distance of 5.99 feet,

North 76°01' 49" East, a distance of 24.76 feet,

North 84°26' 49" East, a distance of 16.41 feet,

North 88°26' 48" East, a distance of 33.04 feet,

South 89°02' 48" East, a distance of 29.47 feet,

North 70°43' 34" East, a distance of 36.26 feet to the Southwest corner of the land described in Book 159 Page 614, Washington County Deed Records;

thence along the southerly line of said land, South 86°07' 54" East, a distance of 57.93 feet;

thence continuing along said southerly line, South 86°23' 21" East, a distance of 195.23 feet to the Northwest corner of Parcel I, Book 583 Page 388, Washington County Deed Records;

thence along the westerly line of said Parcel I, South 03°36' 39" West, a distance of 115.44 feet to the Southwest corner of said Parcel I;

thence along the southerly line of said Parcel I, South 86°23' 21" East, a distance of 230.00 feet to the Southeast corner of said Parcel I;

thence along the easterly line of said Parcel I, North 44°30' 39" East, a distance of 122.18 feet to an angle point;

thence continuing along said easterly line, South 86°23' 21" East, a distance of 50.00 feet to an angle point;

thence continuing along said easterly line, North 44°30' 39" East, a distance of 30.55 feet to the Northeast corner of said Parcel I;

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12564 SW Main Street, Tigard, OR 97223 ♦ [T] 503-941-9484 [F] 503-941-9485

thence along the easterly line of the land described in Book 583 Page 388, Washington County Deed Records, North 51°59' 39" East, a distance of 50.40 feet to the westerly line of "Adjusted Tax Lot 600", said Document No. 2017-002188;

thence along said westerly line of "Adjusted Tax Lot 600" the following thirty two courses:

South 01°22' 44" East, a distance of 57.44 feet,

South 16°22' 15" West, a distance of 53.53 feet,

South 01°41' 04" West, a distance of 41.08 feet,

South 06°34' 51" West, a distance of 57.41 feet,

South 01°11' 40" East, a distance of 49.19 feet,

South 00°32' 07" West, a distance of 74.28 feet,

South 06°23' 01" East, a distance of 45.41 feet,

South 15°42' 06" East, a distance of 54.81 feet,

South 33°40' 34" East, a distance of 33.78 feet,

South 35°08' 14" East, a distance of 45.92 feet,

South 39°16' 00" East, a distance of 88.34 feet,

South 00°00' 00" East, a distance of 394.86 feet,

South 64°03' 46" West, a distance of 32.68 feet,

North 78°43' 51" West, a distance of 39.33 feet,

North 88°40' 13" West, a distance of 44.37 feet,

North 79°31' 18" West, a distance of 32.26 feet,

South 54°12' 05" West, a distance of 102.65 feet,

South 30°35' 44" West, a distance of 88.76 feet,

South 09°56' 33" West, a distance of 137.01 feet,

South 16°03' 21" West, a distance of 113.96 feet,

South 13°56' 17" West, a distance of 143.90 feet,

South 05°57' 27" East, a distance of 74.52 feet,

Pacific Community Design, Inc.
12564 SW Main Street, Tigard, OR 97223 ♦ [T] 503-941-9484 [F] 503-941-9485

South 29°04' 32" East, a distance of 76.00 feet,

South 43°12' 55" East, a distance of 52.09 feet,

South 51°20' 25" East, a distance of 157.34 feet,

South 31°48' 31" West, a distance of 124.09 feet,

South 64°55' 13" West, a distance of 79.71 feet,

South 61°39' 19" West, a distance of 71.55 feet,

South 73°16' 00" West, a distance of 90.30 feet,

South 74°43' 59" West, a distance of 86.22 feet,

South 66°55' 58" West, a distance of 50.90 feet,

South 57°41' 40" West, a distance of 96.82 feet,

thence leaving said westerly line of "Adjusted Tax Lot 600", South 63°31' 08" West, a distance of 363.71 feet;

thence South 03°19' 44" West, a distance of 187.33 feet to a point on said westerly line of "Adjusted Tax Lot 600";

thence along said westerly line of "Adjusted Tax Lot 600", South 00°01' 33" East, a distance of 59.95 feet to a point on the southerly line of the Northeast Quarter of said Section 36;

thence along said southerly line, South 89°44' 50" West, a distance of 1258.75 feet to the POINT OF BEGINNING.

Containing 97.45 acres, more or less.

Basis of bearings being the westerly line of the Northeast Quarter of said Section 36, per Survey No. 30,865, Washington County Survey Records.

REGISTERED
PROFESSIONAL
LAND SURVEYOR

DocuSigned by:
Travis Jansen
33055EFA07B841B...

OREGON
JULY 9, 2002
TRAVIS C. JANSEN
57751

RENEWS: 6/30/2023

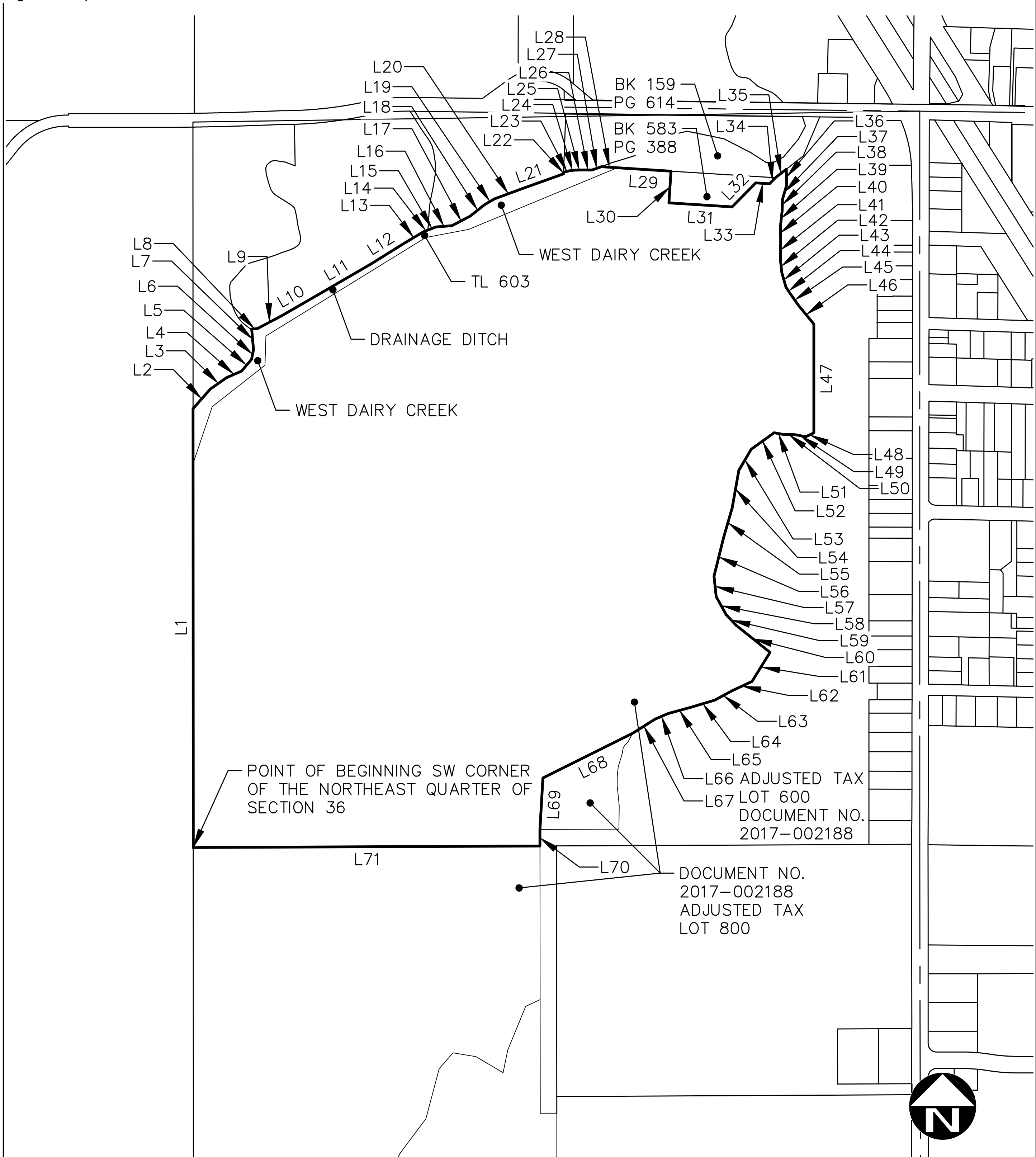

EXHIBIT A

PARCEL 1

DRAWN BY: FAM DATE: 05/10/22

REVIEWED BY: TCJ DATE: 05/10/22

PROJECT NO.: 501-032

SCALE: 1"=500'

PCD
PACIFIC COMMUNITY DESIGN
12564 SW Main St
Tigard, OR 97223
[T] 503-941-9484
[F] 503-941-9485

LINE TABLE		
LINE	BEARING	LENGTH
L1	N00°01'28"W	1593.20'
L2	N41°25'55"E	94.96'
L3	N54°46'40"E	71.85'
L4	N66°31'17"E	59.43'
L5	N40°04'02"E	56.32'
L6	N12°00'13"E	35.80'
L7	N05°20'42"W	74.73'
L8	N85°02'29"E	20.78'
L9	N62°04'36"E	99.67'
L10	N60°05'31"E	130.59'
L11	N59°50'10"E	243.96'
L12	N57°57'05"E	141.06'
L13	N59°15'20"E	83.77'
L14	N68°48'28"E	17.60'
L15	N68°48'29"E	29.85'
L16	N85°28'48"E	58.52'
L17	N62°30'00"E	75.31'
L18	N51°26'35"E	67.61'
L19	N60°25'27"E	41.90'
L20	N69°38'05"E	104.80'
L21	N70°19'17"E	160.32'
L22	N02°21'46"E	5.99'
L23	N76°01'49"E	24.76'
L24	N84°26'49"E	16.41'
L25	N88°26'48"E	33.04'
L26	S89°02'48"E	29.47'
L27	N70°43'34"E	36.26'
L28	S86°07'54"E	57.93'
L29	S86°23'21"E	195.23'
L30	S03°36'39"W	115.44'

LINE TABLE		
LINE	BEARING	LENGTH
L31	S86°23'21"E	230.00'
L32	N44°30'39"E	122.18'
L33	S86°23'21"E	50.00'
L34	N44°30'39"E	30.55'
L35	N51°59'39"E	50.40'
L36	S01°22'44"E	57.44'
L37	S16°22'15"W	53.53'
L38	S01°41'04"W	41.08'
L39	S06°34'51"W	57.41'
L40	S01°11'40"E	49.19'
L41	S00°32'07"W	74.28'
L42	S06°23'01"E	45.41'
L43	S15°42'06"E	54.81'
L44	S33°40'34"E	33.78'
L45	S35°08'14"E	45.92'
L46	S39°16'00"E	88.34'
L47	S00°00'00"E	394.86'
L48	S64°03'46"W	32.68'
L49	N78°43'51"W	39.33'
L50	N88°40'13"W	44.37'
L51	N79°31'18"W	32.26'
L52	S54°12'05"W	102.65'
L53	S30°35'44"W	88.76'
L54	S09°56'33"W	137.01'
L55	S16°03'21"W	113.96'
L56	S13°56'17"W	143.90'
L57	S05°57'27"E	74.52'
L58	S29°04'32"E	76.00'
L59	S43°12'55"E	52.09'
L60	S51°20'25"E	157.34'

LINE TABLE		
LINE	BEARING	LENGTH
L61	S31°48'31"W	124.09'
L62	S64°55'13"W	79.71'
L63	S61°39'19"W	71.55'
L64	S73°16'00"W	90.30'
L65	S74°43'59"W	86.22'
L66	S66°55'58"W	50.90'
L67	S57°41'40"W	96.82'
L68	S63°31'08"W	363.71'
L69	S03°19'44"W	187.33'
L70	S00°01'33"E	59.95'
L71	S89°44'50"W	1258.75'

EXHIBIT A
PARCEL 1

N:\proj\501-032\09 Drawings\06 Survey\Legals\501032.legal.PLA.dwg - SHEET: Parcel 1 Table May. 11, 22 - 8:54 AM fatemeh

DRAWN BY: FAM DATE: 05/10/22
REVIEWED BY: TCJ DATE: 05/10/22
PROJECT NO.: 501-032
SCALE: N/A

PACIFIC COMMUNITY DESIGN
12564 SW Main St
Tigard, OR 97223
[T] 503-941-9484
[F] 503-941-9485

PACIFIC COMMUNITY DESIGN

EXHIBIT A

May 10, 2022

LEGAL DESCRIPTION Job No. 501-032
Parcel 2

A portion of "Adjusted Tax Lot 800", as described in Document No. 2017-002188, Washington County Deed Records, in the Southeast Quarter of Section 36, Township 2 North, Range 4 West, Willamette Meridian, Washington County, State of Oregon, more particularly described as follows:

BEGINNING at the Southwest corner of the Northeast Quarter of said Section 36;

thence along the southerly line of said Northeast Quarter, North 89°44' 50" East, a distance of 1258.75 feet to a point on the westerly line of "Adjusted Tax Lot 600", said Document No. 2017-002188;

thence along said westerly line of "Adjusted Tax Lot 600", South 00°04' 25" East, a distance of 557.78 feet;

thence leaving said westerly line, South 65°04' 13" West, a distance of 57.89 feet;

thence South 22°20' 45" West, a distance of 170.65 feet;

thence South 11°41' 27" West, a distance of 84.80 feet;

thence North 59°15' 29" West, a distance of 114.50 feet;

thence North 80°40' 46" West, a distance of 84.68 feet;

thence South 41°04' 06" West, a distance of 76.28 feet;

thence South 14°39' 32" West, a distance of 58.49 feet;

thence South 14°51' 14" West, a distance of 130.12 feet;

thence South 37°00' 06" West, a distance of 152.96 feet;

thence South 26°49' 57" West, a distance of 221.88 feet;

thence South 33°13' 47" West, a distance of 114.05 feet;

thence South 64°39' 22" West, a distance of 52.10 feet;

thence South 45°56' 27" West, a distance of 68.36 feet;

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thence South 00°27' 34" East, a distance of 53.79 feet;

thence South 25°56' 07" East, a distance of 57.62 feet to a point on the northerly Right-of-Way line of Wilson River Highway No. 6;

thence along said northerly Right-of-Way line, North 82°25' 12" West, a distance of 523.31 feet to a point on the westerly line of the Southeast Quarter of said Section 36;

thence along said westerly line, North 00°01' 28" West, a distance of 1507.08 feet to the POINT OF BEGINNING.

Containing 34.68 acres, more or less.

Basis of bearings being the westerly line of the Southeast Quarter of said Section 36, per Survey No. 30,865, Washington County Survey Records.

REGISTERED
PROFESSIONAL
LAND SURVEYOR

DocuSigned by:
Travis Jansen
33055FEA07B841B...

OREGON
JULY 9, 2002
TRAVIS C. JANSEN
57751

RENEWS: 6/30/2023

Pacific Community Design, Inc.
12564 SW Main Street, Tigard, OR 97223 ♦ [T] 503-941-9484 [F] 503-941-9485

LINE TABLE		
LINE	BEARING	LENGTH
L72	N89°44'50"E	1258.75'
L73	S00°04'25"E	557.78'
L74	S65°04'13"W	57.89'
L75	S22°20'45"W	170.65'
L76	S11°41'27"W	84.80'
L77	N59°15'29"W	114.50'
L78	N80°40'46"W	84.68'
L79	S41°04'06"W	76.28'
L80	S14°39'32"W	58.49'
L81	S14°51'14"W	130.12'
L82	S37°00'06"W	152.96'
L83	S26°49'57"W	221.88'
L84	S33°13'47"W	114.05'
L85	S64°39'22"W	52.10'
L86	S45°56'27"W	68.36'
L87	S00°27'34"E	53.79'
L88	S25°56'07"E	57.62'
L89	N82°25'12"W	523.31'
L90	N00°01'28"W	1507.08'

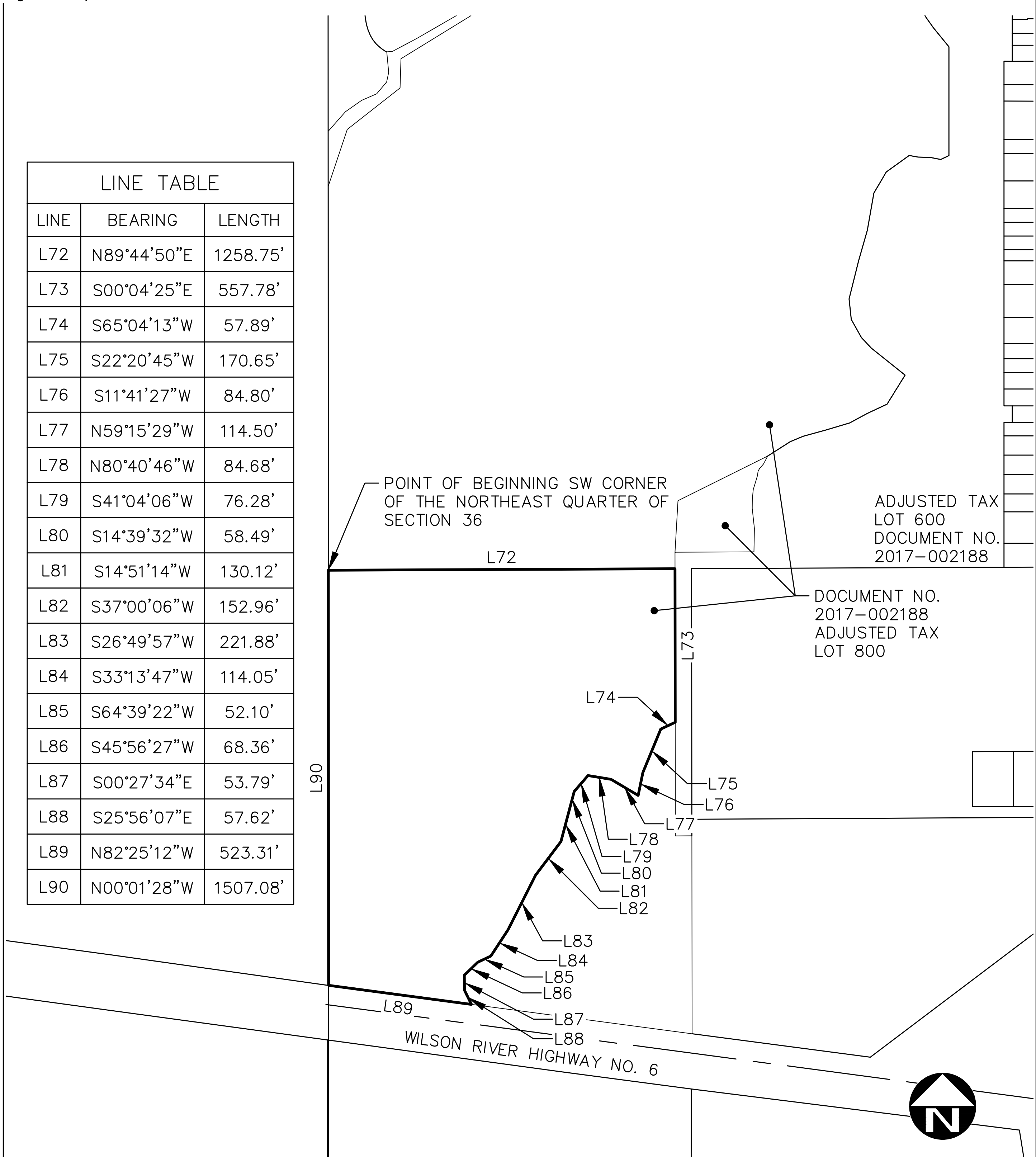


EXHIBIT A
PARCEL 2

DRAWN BY: FAM DATE: 05/10/22
REVIEWED BY: TCJ DATE: 05/10/22
PROJECT NO.: 501–032
SCALE: 1"=500'

PAGE 3 OF 3

PACIFIC COMMUNITY DESIGN
12564 SW Main St
Tigard, OR 97223
[T] 503-941-9484
[F] 503-941-9485

Exhibit A: Access Roads and Wildlife Viewing Areas

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Tax Lot Layer provided by RLIS.

N:\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\.mxds\Exhibit A Access Road and Wildlife Viewing Areas 220617.mxd

Map created by Miles Eubanks.
Ver. 6.22

greenbanks

Exhibit G
Sample Credit Receipt

The Bank Sponsor will complete a credit receipt using the template below for every sale or transfer of credits, and immediately provide a copy of each receipt to both Co-chair Agencies, regardless of jurisdiction.

A credit receipt will include the following information:

Date
Number of credits sold
Acres of wetland impacts, by HGM and Cowardin class
HGM and Cowardin class of the credits being sold to compensate for those impacts.
Resource type: wetlands___ or waters___
Permittee Name
Project Name
Corps Permit Number
DSL Permit Number or other project identifier
Impact HUC (10 digit HUC)

By selling credits to the permittee, DCMB LLC hereby assumes responsibility for fulfilling the mitigation obligation of the Permit(s) listed above.

Sponsor signature: ______________________________

Exhibit H
Sample Credit Ledger

The Sponsor shall keep the cumulative ledger spreadsheet up to date and provide copies to DSL and the Corps as requested, and in the annual report. The Sponsor will not include “reserved” credits.

The credit ledger spreadsheet will include the following items:

Transaction date
Transaction type – withdrawal, refund, release, or suspension
Jurisdiction – federal, state, or both
Number of credits sold
Credit unit – acres, linear feet, other
State permit number
Federal permit number
Resource type – wetland or stream, or other
Balance of released credits after this transaction

Multiple credit types are proposed for the DCMB including wetland and stream (waters). Credit ledgers for each resource type will be tracked separately and provided in a combined spreadsheet. Clean Water Services’ offsite mitigation areas are not included in the wetland and stream credit areas; CWS mitigation will be sold to one buyer and there will be no need for credit accounting in these areas.

Exhibit I
Definitions

Where available, the following may contain both Corps regulatory definitions and DSL definitions from statute or rules. It is the Co-chair Agencies' intent that the MBI be interpreted, to the extent possible, using the Corps-DSL joint definition.

ADAPTIVE MANAGEMENT - Corps definition: the development of a management strategy that anticipates likely challenges associated with compensatory mitigation projects and provides for the implementation of actions to address those challenges, as well as unforeseen changes to those projects.

BUFFER – Corps definition: An upland, wetland, and/or riparian area that protects and/or enhances aquatic resource functions associated with wetlands, rivers, streams, lakes, marine, and estuarine systems from disturbances associated with adjacent land uses. DSL definition: BUFFER means an area immediately adjacent to or surrounding a water of this state that is set aside to protect the water of this state from conflicting adjacent land uses and to support ecological functions. The buffer area may include upland, wetland, or other waters.

CO-CHAIR AGENCIES – The Corps and DSL, whose representatives make decisions regarding bank establishment, operation, and use. The USFWS or NMFS may be CO-CHAIR AGENCIES if a bank also serves to mitigate for losses to species listed, or habitats designated, under the Endangered Species Act. Notwithstanding any rights or obligations described in the MITIGATION BANK INSTRUMENT, each CO-CHAIR AGENCY reserves all rights and authorities to implement their respective statutory missions.

CREATION – See Corps definition for ESTABLISHMENT. DSL definition: to convert an upland area that has never been a water of this state to a water of this state.

CREDIT – Corps definition: A unit of measure (e.g., a functional or areal measure or other suitable metric) representing the accrual or attainment of aquatic functions at a compensatory mitigation site. The measure of aquatic functions is based on the resources restored, established, enhanced, or preserved. DSL definition: CREDIT means the measure of the increase in the functions and values of the water resources of this state achieved at a mitigation bank site.

DEBIT – Corps definition: A unit of measure (e.g., a functional or areal measure or other suitable metric) representing the loss of aquatic functions at an impact or project site. The measure of aquatic functions is based on the resources impacted by the authorized activity. DSL definition: a DEBIT also may represent the reduction of aquatic functions at an impact or project site.

DEGRADED – DSL definition: refers to a condition of a water of this state with diminished functions and values. For a wetland, degradation must include hydrologic manipulation (such as diking, draining, or filling) that demonstrably interferes with the normal functioning of wetland processes.

ENDOWMENT FUND - A dedicated, non-wasting account to be established by the SPONSOR concurrent with the operation of the MBI, and which shall generate interest to be used exclusively for the ongoing operation, use, and management of the mitigation bank for purposes consistent with the MBI, associated conservation easement, and long-term management plan.

ENHANCEMENT – Corps definition: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area. DSL definition: ENHANCEMENT means to improve the condition and increase the functions and values of an existing degraded wetland or other water of this state, and additional criteria in OAR 141-085-0694.

ESTABLISHMENT (Also known as CREATION) – Corps definition: The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. ESTABLISHMENT results in a gain in aquatic resource area and functions.

ESTABLISHMENT PERIOD - The timeframe between approval of an MBI and completion of credit sales, or Bank closure. During the ESTABLISHMENT PERIOD the Bank Sponsor constructs, maintains, and monitors performance according to the MBI.

FINANCIAL ASSURANCE INSTRUMENT – A financial instrument, such as a surety bond, assignment of deposit, escrow account, casualty insurance, irrevocable letter of credit, or other appropriate instrument accessible to a designated beneficiary, used to ensure a high level of confidence that the compensatory mitigation project will be successfully constructed, monitored and maintained, in accordance with applicable performance standards as set forth in the MBI. A FINANCIAL ASSURANCE ensures that sufficient funds will be available to complete or replace a Bank Sponsor's obligations in the event that the Sponsor proves unable or unwilling to meet those obligations. The amount and the type of instrument must be approved at the time of MBI approval.

FUNCTIONS – Corps definition: The physical, chemical, and biological processes that occur in aquatic ecosystems. DSL definition: "Functions and Values" are those ecological characteristics or processes associated with a water of this state, and the societal benefits derived from those characteristics. The ecological characteristics are "functions" whereas the associated societal benefits are "values. For example, retention and detention of water is a function.

INTERAGENCY REVIEW TEAM (IRT) – An interagency group of federal, state, tribal, and/or local regulatory and resource agency representatives that reviews documentation for and advises the Corps district engineer and DSL on the establishment and management of a mitigation bank or an in-lieu fee mitigation program. The Corps and DSL are the CO-CHAIR AGENCIES of the IRT and the final decision makers.

LEDGER – A cumulative accounting spreadsheet of all credits released and sold.

LONG-TERM MANAGEMENT PERIOD – The timeframe that begins after Bank closure and runs in perpetuity, when the resource gains are protected and managed.

MITIGATION BANK – Corps definition: A site, or suite of sites, where resources (e.g., wetlands, streams, riparian areas) are restored, established, enhanced, and/or preserved for the purpose of providing compensatory mitigation for impacts authorized by Department of Army permits. In general, a MITIGATION BANK sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the MITIGATION BANK SPONSOR. The operation and use of a MITIGATION BANK are governed by a MITIGATION BANKING INSTRUMENT. DSL definition: "Mitigation Bank" or "Bank" means a site created, restored, enhanced or preserved in accordance with ORS 196.600 to 196.655 to compensate for unavoidable adverse impacts to waters of this state due to activities which otherwise comply with the requirements of ORS 196.600 to 196.905.

MITIGATION BANK INSTRUMENT (or MBI) – Corps definition: The legal document for the establishment, operation, and use of a mitigation bank. DSL definition: MBI means the legally binding and enforceable agreement between the Department (DSL) and a mitigation bank SPONSOR that formally establishes the mitigation bank and stipulates the terms and conditions of its construction, operation, use, and long-term management.

PERFORMANCE STANDARDS – Observable or measurable physical (including hydrological), chemical and/or biological indicators used to determine if a mitigation project is meeting its objectives. Credit releases are linked to achievement of minimum PERFORMANCE STANDARDS.

PRESERVATION – Corps definition: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. PRESERVATION does not result in a gain of aquatic resource area or functions. DSL definition: to permanently protect waters of this state having exceptional ecological features, and additional criteria in OAR 141-085-0694.

RE-ESTABLISHMENT - Corps definition: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. RE-ESTABLISHMENT results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

REHABILITATION - <u>Corps definition</u>: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural historic functions to a degraded aquatic resource. REHABILITATION results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

RESTORATION – <u>Corps definition</u>: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, RESTORATION is divided into two categories: RE-ESTABLISHMENT (former wetland) and REHABILITATION (degraded). <u>DSL definition</u>: to reestablish a former water of this state.

SERVICE AREA – <u>Corps definition</u>: The geographic area within which impacts can be mitigated at a specific mitigation bank, as designated in the MBI, or at an in-lieu fee (ILF) mitigation site as specified in an ILF program instrument. <u>DSL definition</u>: SERVICE AREA means the boundaries set forth in a mitigation bank instrument that include one or more watersheds identified on the United States Geological Survey, Hydrologic Unit Map - 1974, State of Oregon, for which a mitigation bank provides credits to compensate for adverse effects from project developments to waters of this state. Service areas for mitigation banks are not mutually exclusive.

SERVICES (Also known as VALUES) – <u>Corps definition</u>: The benefits that human populations receive from functions that occur in ecosystems. <u>DSL definition</u>: "Functions and Values" are those ecological characteristics or processes associated with a water of this state, and the societal benefits derived from those characteristics. The ecological characteristics are "functions" whereas the associated societal benefits are "values. For example, reduction of flood damage is a value or ecological service.

SPONSOR – <u>Corps definition</u>: Any public or private entity responsible for establishing, and in most circumstances, operating a mitigation bank or in-lieu fee program. <u>DSL definition</u>: the SPONSOR is the person or single legal entity that has the authority and responsibility to fully execute the terms and conditions of a MBI, unless specified otherwise in the MBI.

STEWARDSHIP FUNDING AGREEMENT – An agreement between the bank SPONSOR and LONG-TERM FUND MANAGER establishing the long-term funding mechanism and describing the purpose, roles, and responsibilities in managing the long-term funding mechanism to ensure that long-term management occurs, and that the long-term funding mechanism remains available during any changes of ownership or stewardship.

VALUES – See SERVICES.

WATERSHED APPROACH – An analytical process for making compensatory mitigation decisions that support the sustainability or improvement of aquatic resources in a watershed. It involves consideration of watershed needs, and how locations and types of compensatory mitigation projects address those needs. A landscape perspective is used to identify the types and location of compensatory mitigation projects that will benefit the watershed and offset losses of aquatic resource services caused by activities authorized by Department of Army and DSL permits. The WATERSHED APPROACH may involve consideration of landscape scale, historic and potential aquatic resource conditions, past and projected aquatic resource impacts in the watershed, and terrestrial connections between aquatic resources when determining compensatory mitigation requirements for Department of Army and DSL permits.

WATERSHED PLAN – A plan developed by federal, tribal, state, and/or local government agencies or appropriate non-governmental organizations, in consultation with relevant stakeholders, for the specific goal of aquatic resource restoration, establishment, enhancement, and preservation. A WATERSHED PLAN addresses aquatic resource conditions in the watershed, multiple stakeholder interests, and land uses. WATERSHED PLANS may also identify priority sites for aquatic resource restoration and protection.

Exhibit J
Financial Assurances and Release Schedule

Financial Assurances will be provided by the sponsor for each phase of the Bank. A financial assurance shall be established using one of the DSL and Corps approved templates in an amount determined by the co-chair agencies to be sufficient to ensure a high level of confidence that the compensatory mitigation project will be successfully completed, in accordance with its performance standards and all other requirements of the MBI. The amount of financial assurance required at any point during the establishment period is the total cost of implementing the mitigation plan for the remaining years to closure.

Please refer to the following Exhibit J Tables: *Estimated Costs for the Dairy Creek Mitigation Bank and Financial Assurances Funding and Release Schedule*, which display the estimated costs of tasks that are not yet completed for the project; the Bank sponsor will provide financial assurances equivalent to the estimated amounts of the uncompleted tasks. As tasks are completed each year, the sponsor may request financial assurances be released equivalent to the estimated costs of the completed tasks as displayed in the tables.

Prior to the first credit release for Phase 1 and Phase 1 Bank construction, a financial assurance of $393,250 will be deposited in an Assignment of Deposit account. This amount is equivalent to all of the uncompleted tasks for Phase 1. In general, financial assurance releases will follow the funding and release schedule displayed in the Table.

Prior to the first credit release for Phase 2 and Phase 2 Bank construction, a financial assurance of $133,925 will be deposited in an Assignment of Deposit account; this amount is equivalent to the estimated costs for all of the uncompleted tasks for Phase 2. Additionally, prior to the first credit release of Phase 2, an easement will be recorded over the narrow strip of tax lot 600 which is adjacent to tax lot 900 to preserve groundwater and surface water flow, or alternatively a lot-line adjustment will be completed in that area to merge the narrow strip of tax lot 600 into the Bank lot 800. In general, financial assurance releases will follow the funding and release schedule displayed in the Table. The financial assurance cost estimates are based on market rates, i.e., the amount needed for the Co-chair Agencies to contract out completion of the project.

The approved financial assurance instrument must be received by the Co-chair Agencies prior to the first credit release.

EXHIBIT J: Estimated Project Costs for the Dairy Creek Mitigation Bank

TASK/ EXPENSE	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	TOTAL	TOTAL plus 10% Contingency
PHASE 1 (97.5 acres)- Wetland Mitigation													
Construction: Earthwork, Habitat Elements	$20,000											$20,000	$22,000
As-Built Report	$3,000											$3,000	$3,300
Planting and Seeding: Wetlands and Buffers	$74,000											$74,000	$81,400
Monitoring Years 1-10		$7,500	$5,000	$5,000	$5,000	$5,000	$2,000	$2,000	$1,500	$1,500	$1,500	$36,000	$39,600
Post-Construction Wetland Delineation					$2,000							$2,000	$2,200
Maintenance Years 1-10		$20,000	$17,000	$15,000	$12,000	$12,000	$8,000	$6,000	$5,000	$5,000	$5,000	$105,000	$115,500
Bank Management Years 1-10		$2,000	$1,000	$1,000	$1,000	$1,000	$500	$500	$500	$500	$500	$8,500	$9,350
Replanting and Reseeding			$3,000	$1,500								$4,500	$4,950
										TOTAL		**$253,000**	**$278,300**
PHASE 1- Stream Mitigation													
Construction: Earthwork, Habitat Elements	$40,000											$40,000	$44,000
Planting and Seeding: Stream Mitigation	$9,500											$9,500	$10,450
Monitoring Years 1-10		$2,500	$2,000	$2,500	$1,000	$1,000	$2,000	$1,000	$1,000	$2,000	$1,000	$16,000	$17,600
Post-Construction Waters Delineation					$1,000							$1,000	$1,100
Maintenance Years 1-10 (Vegetation, LWD, Erosion)		$5,000	$5,000	$4,000	$3,000	$3,000	$2,000	$2,000	$2,000	$2,000	$2,000	$30,000	$33,000
Bank Management Years 1-10		$500	$500	$500	$500	$500	$500	$500	$500	$500	$500	$5,000	$5,500
Replanting and Reseeding			$2,000	$1,000								$3,000	$3,300
										TOTAL		**$104,500**	**$114,950**
TOTAL FINANCIAL ASSURANCE PHASE 1									**TOTAL**		**$393,250**		
PHASE 2 (34.5 acres)- Wetland Mitigation													
Construction: Earthwork, Habitat Elements (snags)	$10,000											$10,000	$11,000
Planting and Seeding: Wetlands and Buffers	$30,000											$30,000	$33,000
As-Built Report	$2,000											$2,000	$2,200
Monitoring Years 1-10		$4,000	$3,000	$3,000	$3,000	$2,000	$2,000	$2,000	$1,500	$1,500	$1,500	$23,500	$25,850
Post-Construction Wetland Delineation					$1,500							$1,500	$1,650
Maintenance Years 1-10		$7,000	$7,000	$6,000	$6,000	$6,000	$4,000	$3,000	$3,000	$2,000	$2,000	$46,000	$50,600
Bank Management Years 1-10		$1,000	$750	$750	$750	$750	$500	$500	$500	$500	$500	$6,500	$7,150
Replanting and Reseeding			$1,000	$750	$500							$2,250	$2,475
						TOTAL						**$121,750**	**$133,925**
TOTAL FINANCIAL ASSURANCE PHASE 2									**TOTAL**		**$133,925**		

EXHIBIT J: FINANCIAL ASSURANCE FUNDING AND RELEASE SCHEDULE- PHASE 1

Year	Project Milestone	Amount of Financial Assurance Required From Sponsor	Amount of Financial Assurance Released Back to Sponsor	Total Assurance Remaining
PHASE 1				
Year 0	Approval of MBI, Recording of Deed Restriction, Joint Removal-Fill (Section 404) permit	Wetland: $278,300 Stream: $114,950 Total-- $393,250	$0	$393,250
Year 0	Earthwork Complete and As-Built Report Submitted	$0	Wetland: $25,300 Stream: $44,000 Total-- $69,300	$323,950
Year 0	Planting and Seeding Complete	$0	Wetland: $81,400 Stream: $10,450 Total-- $91,850	$232,100
Year 1	Year 1 Monitoring Report and Performance Standards Met	$0	Wetland: $32,450 Stream: $8,800 Total-- $41,250	$190,850
Year 2	Year 2 Monitoring Report and Performance Standards Met	$0	Wetland: $28,600 Stream: $10,450 Total-- $39,050	$151,800
Year 3	Year 3 Monitoring Report and Performance Standards Met	$0	Wetland: $24,750 Stream: $8,800 Total-- $33,550	$118,250
Year 4	Year 4 Monitoring Report, *Post-Construction Delineation, Performance Standards Met	$0	Wetland: $22,000 Stream: $6,050 Total-- $28,050	$90,200
Year 5	Year 5 Monitoring Report and Performance Standards Met	$0	Wetland: $19,800 Stream: $4,950 Total-- $24,750	$65,450
Year 6	Year 6 Monitoring Report and Performance Standards Met	$0	Wetland: $11,550 Stream: $4,950 Total-- $16,500	$48,950
Year 7	Year 7 Monitoring Report and Performance Standards Met	$0	Wetland: $9,350 Stream: $3,850 Total-- $13,200	$35,750
Year 8	Year 8 Monitoring Report and Performance Standards Met	$0	Wetland: $7,700 Stream: $3,850 Total-- $11,550	$24,200
Year 9	Year 9 Monitoring Report and Performance Standards Met	$0	Wetland: $7,700 Stream: $4,950 Total-- $12,650	$11,550
Year 10+ (until Bank closure)	Year 10 Monitoring Report and Performance Standards Met. Bank Closure.	$0	Wetland: $7,700 Stream: $3,850 Total-- $11,550	$0
TOTAL		**$393,250**	**$393,250**	
Note: *Post-Construction Delineation will be completed between Years 3-5				

EXHIBIT J: FINANCIAL ASSURANCE FUNDING AND RELEASE SCHEDULE- PHASE 2

Year*	**Project Milestone**	**Amount of Financial Assurance Required From Sponsor**	**Amount of Financial Assurance Released Back to Sponsor**	**Total Assurance Remaining**
PHASE 2				
Year 0	Joint Removal-Fill (Section 404) permit Phase 2	$133,925	$0	$133,925
Year 0	Earthwork Complete and As-Built Report Submitted	$0	$13,200	$120,725
Year 0	Planting and Seeding Complete	$0	$33,000	$87,725
Year 1	Year 1 Monitoring Report and Performance Standards Met	$0	$13,200	$74,525
Year 2	Year 2 Monitoring Report and Performance Standards Met	$0	$12,925	$61,600
Year 3	Year 3 Monitoring Report and Performance Standards Met	$0	$11,550	$50,050
Year 4	Year 4 Monitoring Report, *Post-Construction Delineation, Performance Standards Met	$0	$12,925	$37,125
Year 5	Year 5 Monitoring Report and Performance Standards Met	$0	$9,625	$27,500
Year 6	Year 6 Monitoring Report and Performance Standards Met	$0	$7,150	$20,350
Year 7	Year 7 Monitoring Report and Performance Standards Met	$0	$6,050	$14,300
Year 8	Year 8 Monitoring Report and Performance Standards Met	$0	$5,500	$8,800
Year 9	Year 9 Monitoring Report and Performance Standards Met	$0	$4,400	$4,400
Year 10+ (until Bank closure)	Year 10 Monitoring Report and Performance Standards Met. Bank Closure.	$0	$4,400	$0
TOTAL		**$133,925**	**$133,925**	

Note: *Post-Construction Delineation will be completed between Years 3-5

Exhibit K
Long-Term Management Plan

LONG-TERM MANAGEMENT PLAN

This version is for a private sector bank with a legally sufficient long-term site protection instrument to be recorded after the approval of Mitigation Banking Instrument, but prior to credit release. Given the preference for and the benefits of Conservation Easement, one may be executed in the future.

DAIRY CREEK MITIGATION BANK
Long-Term Management Plan

1. Introduction

A. Purpose of Mitigation Bank Establishment

A mitigation bank (Bank) is an aquatic resource area created, restored, enhanced, or preserved to provide compensatory mitigation for unavoidable losses of wetlands and other aquatic resources. Both the aquatic resource losses and the compensatory mitigation gains in Oregon are authorized by the U.S. Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and its implementing regulations at 33 CFR 332, as well as by the Oregon Department of State Lands (DSL) via Oregon's Removal-Fill Law at Oregon Revised Statutes (ORS) 196.600-196.990 and Oregon Administrative Rules (OAR) 141-085.

The Dairy Creek Mitigation Bank (DCMB) consists of 132 acres (Figure 1) located at Township 2 North, Range 4 West, Section 32 utilizing a portion of tax lot 800 and the entirety of tax lot 603 in Washington County, Oregon. Upon the completion of the mitigation plan, the property is expected to include 114.96 acres of wetland, 5.45 acres perennial and intermittent stream, and 12.43 acres of upland buffers and 11.99 acres of Clean Water Services Off-Site Mitigation. The DCMB was constructed in Phases and Long-Term Management will begin approximately 10 years after each Phase is constructed. Phase 1 is a total of 97.5 acres which includes approximately 41.8 acres of forested wetland, 15.9 acres of shrub dominated wetland, 7.6 acres of emergent wetland, 25.0 acres of wetland and upland buffers, and 5.45 acres of perennial and intermittent stream; Phase 2 is a total of 34.5 acres which includes approximately 19.3 acres of forested wetland, 7.9 acres of shrub dominated wetland, 2.0 acres of emergent wetland, and 4.4 acres of wetland and upland buffers. If for some reason Phase 2 is never built, the LTMP project acreage will be modified to only include the Phase 1 project area (97.5 acres); additionally, the management plan, and endowment fund will be modified accordingly.

The Bank Sponsor, DCMB LLC, is responsible for all elements of the Bank during the establishment period, while the Bank is built and developed in compliance with performance standards, and after Bank closure or until long-term management and legal protection responsibility is transferred to the Long-Term Land Manager. Bank closure is defined by this Mitigation Bank Instrument (MBI) as the time after all performance standards have been met, all credits have been sold, and the Bank sponsor has been issued a Bank closure certification by the Co-Chair Agencies. The specific terms of this Long-Term Management Plan (LTMP) shall continue to govern activities after Bank closure unless and until it is amended. A Bank Sponsor may identify another long-term manager to carry out the terms of this LTMP upon the written approval of the Corps and DSL, conferring any necessary real estate interest, and provision of any necessary funding. The DSL rules (OAR 141-085-0692(4) provide improved ratios for mitigation that secures robust site protection and stewardship and understand that this may need to be developed after a few years of Bank performance when the long-term conditions are more easily predictable. Thus, DSL encourages that this LTMP be updated before Bank closure.

B. Purpose of this Long-Term Management Plan

Both agencies require that the MBI provide a LTMP to ensure that the mitigation gains are sustained in perpetuity. 33 CFR 332.8(u); (ORS 196.600). The LTMP sets forth the necessary provisions to ensure the Bank is managed and maintained in perpetuity after bank closure or default closure of the bank is necessary, and a mitigation obligation remains. This includes the long-term management strategy, identity of the party responsible for long-term maintenance, a plan for a funding of these activities, ownership arrangements, and an appropriate permanent site protection instrument with right of entry conveyed to Corps and DSL (33 CFR 332.8(u); OAR 141-085-0680 to -0725). The necessary site protection instrument must grant sufficient interest for the long-term manager to execute the terms of this plan and the Co-Chair Agencies to enforce the provisions of the instrument. Some of the components of the LTMP are mirrored in other sections of the MBI and long-term site protection instrument. However, it is the intent of this LTMP to provide a concise statement of the requirements for long-term management of the site in perpetuity.

1. Timing. Each phase of the Bank is expected to operate over a period of 10 or more years during which time the Sponsor will construct, maintain, monitor, and report on how the site meets the specified performance standards. During this time DSL and the Corps will verify performance standards and other criteria for release of credits according to the schedule in **Exhibit D**; or delay release until standards are met. When all standards, milestones, and other criteria have been met, the final increments of credits will be released. During the establishment period the Co-Chair Agencies may reduce or waive monitoring requirements upon a determination that the Bank has achieved its performance standards. 33 CFR 332.6 (2). Upon Bank closure the Bank enters the long-term management period and performance monitoring is no longer required.

2. Long-Term Manager. The Sponsor shall be the responsible party for implementing every element of this LTMP unless or until the Sponsor transfers the responsibility to an appropriate entity and the transfer is in accordance with the terms of the MBI and the terms of this LTMP. Any transfer must be approved in writing by DSL and the Corps, be accompanied by grant of any necessary real estate interest, to an entity willing to accept this role, and provide any necessary funding as set forth in this plan. As part of their review, the Co-chair Agencies will evaluate the qualifications and capacity of the proposed long-term manager roles relative to the alternatives potentially available. Roles and responsibilities are further defined in the **Table 1** below.

3. Site Protection. Site Protection is addressed in **Exhibits B and F** of the MBI. **Exhibit B** includes proof of Sponsor's ownership, assurance that any encumbrances have been subordinated, and a warranty that the title will remain free of such encumbrances that would conflict with the purposes of the Bank. The long-term site protection instrument, **Exhibit F**, is a critical companion to this LTMP as it includes land use restrictions to protect the site. The long-term site protection instrument, Restrictive Covenants and an access easement conveyed to DSL and to the Corps, shall be recorded with the County Assessor prior to the first credit release.

4. Long-Term Management Tasks and Funding. This LTMP describes the conditions anticipated upon bank closure and the aquatic resource functions and values to be conserved, as well as the known and potential threats to conservation of the aquatic resource functions and values established at the bank site. The plan identifies ongoing maintenance tasks needed to address these threats and sustain the gains of aquatic resources and the natural processes that support them, cost estimates for these tasks, and the funding mechanism that will be used to ensure there will be funds available to conduct these tasks in perpetuity.

C. Long-Term Management Roles and Responsibilities

Table 1. Roles & Responsibilities

Entity	Role in Long-Term Management
Long-Term Land Manager	Implements land management to sustain the Conservation Values identified in this LTMP, consistent with the site protection instrument, through the conservative use of the long-term funding mechanism to conduct the tasks necessary to sustain those Conservation Values.
Long-Term Fund Manager	Manages, protects, invests, and responsibly spends the long-term funding mechanism to provide necessary income to fund annual long-term maintenance tasks.
Conservation Easement (CE) Holder	If a CE is selected as site protection, the CE Holder monitors the site for compliance with terms of the CE and may take legal action to protect the site if necessary. A CE Holder must qualify under ORS 217.715.
Landowner* *upon closure of P1, title will be transferred to LT Land Manager.	Enjoys uses of the land consistent with terms and purposes of the site protection instrument, retains all rights & responsibilities not expressly conveyed under that instrument.
Regulatory Agencies	DSL and the Corps long-term roles and responsibilities are defined by their respective statutes. Nothing in this document shall change either agencies jurisdiction or authority under applicable state and federal laws.

The Bank Sponsor will be responsible for implementing this LTMP (including any responsibilities assigned to the Long-term Land Manager in this LTMP) unless and until a Long-term Land Manager is selected. It is anticipated that Metro will be the LT Land Manager due to their close proximity to the DCMB and similar conservation goals. Once the new LT Land Manager is approved by the Agencies, it will be responsible for implementing the LTMP. The Sponsor plans to transfer title of the DCMB project area tax lot (after lot-line adjustment) on or before closure of Phase 2. For the completion of Phase 1, the sponsor will record a CE over the Phase 1 project area. By the completion of Phase 2, the sponsor will complete a lot-line adjustment so that the Bank is one tax lot.

An endowment fund will be established for the project through a Long-Term fund manager such as the Oregon Community Fund who will distribute funds to the LT Land Manager for management and maintenance.

2. Anticipated Long-Term Site Conditions and Threats

A. Conditions Anticipated upon Bank Closure, Aquatic Resources Functions and Values to be Conserved.

The mitigation design anticipates construction of topography and water regimes, and establishment of native vegetation that together optimize several functions and values of aquatic resources characteristic of the setting and ecoregion, as described in the mitigation plan **(Exhibit C)**.

The DCMB is proposing to generate Wetland and Waters mitigation credits. Improvements to the Perennial channel of the W. Fork Dairy Creek and creation/restoration of Intermittent side-channels, will generate stream mitigation (Waters) credits. Restoration, creation and enhancement of wetlands and buffers will generate wetland mitigation credits. Wetland mitigation credit types will include Riverine and Slope/Flats Hydrogeomorphic (HGM) Classes, and Palustrine Emergent (PEM), Palustrine Forested (PFO), and Palustrine Scrub-Shrub (PSS) Cowardin classes. The target plant communities include wetland and upland forests, shrub, and emergent communities, that are expected to continue to mature via natural plant succession and growth after the bank has closed. The following wetland and waterway ecological objectives and outcomes from the Mitigation Banking Instrument describe the "Conservation Values" of the Bank and shall guide the long-term management:

1) The site continues to support approximately 61 acres of deciduous wetland forest, 24 acres of willow dominated scrub-shrub wetland, 9.6 acres of sedge and rush dominated emergent wetland, and 17.8 acres of wetland and upland buffers; a total of 100 acres of wetland and 5.4 acres of waters.
2) Vegetation at the site is managed to maintain a dominance of native species; invasive species are controlled as necessary to prevent increase to levels that will reduce functionality of waters resources.
3) Areas mapped as emergent wetland (9.7 acres) are periodically, or approximately once in every 3 years, treated to prevent tree establishment and dominance; up to 5% tree cover is acceptable in the emergent wetland areas.
4) Access controls (fence & gates) are maintained; any litter or trespass damage is addressed within 3 months of occurrence.
5) The West Fork Dairy Creek remains hydrologically connected to its floodplain in response to 2-year recurrence flows or greater.
6) Fish can pass into and out of the restored stream side-channel in winter and spring.
7) Minor erosion is considered to be a natural process of stream evolution but the stream mitigation areas should be observed annually to ensure that erosion has not occurred in a manner that reduces water quality functions or causes an impact to waters resource acreage.
8) Any recreational use of the property is managed so as not to diminish the ongoing provision of the aquatic functions and values for which the site is protected.
9)The wetland and waterway functions and values provided by the site are protected, managed and sustained in perpetuity as a natural open space and any conflicting land uses are prohibited.

B. Conservation Threats

This section of the LTMP identifies potential risks to sustaining the desired conditions and outcomes listed above. Management thresholds for conservation threats are described below and management strategies are described in Section 3A.

1. ***Invasion by non-native plants***. The DCMB has very low weed cover (at Year 10 for each Phase) and 93% of the site is forested which is not very susceptible to weed invasion since most of the problematic weeds require full sunlight (not shaded). There was very low invasive weed cover at Year 10 (per phase) and a trend of decreasing weed cover has been noted since site construction. The native plant communities are well established with a high percentage of native herbaceous cover (low bare ground), and established tree and shrub canopy. However, there is potential for the input of non-native invasive seed to the Bank during flood events from the W. Fork Dairy Creek, and from bird and wildlife transport. Invasive species include ODA listed noxious weeds (except any native

plants) and the following known problematic invaders: reed canarygrass (*Phalaris arundinacea*), purple-loosestrife (*Lythrum salicaria*; never observed on-site), Japanese/giant knotweed (*Polygonum cuspidatum syn. Fallopia c.*; never observed on-site), Canada thistle (*Cirsium arvense*), bindweed (*Convolvulus arvensis*), English ivy (*Hedera helix*), and Armenian blackberry (*Rubus armeniacus*).

Plant communities will be observed a couple times per year to determine whether non-native plant species are increasing in cover, newly introduced, or reducing ecological function. Issues identified during seasonal observations will be incorporated into annual maintenance plans. Note: any invasive species that is identified as newly established within the Bank, or has very few individuals, will be the highest priority for immediate treatment.

2. ***Damage from flooding*.** Flood events of the W. Fork Dairy Creek occur on a semi-annual basis and at times inundate the Bank property. These events have the potential to cause erosion, damage plantings, and bring litter (ie trash, organic material) and weed seed into the Bank but have not been observed to be a problem. Since the establishment of the Bank, flooding has not been an issue for maintenance or considered a conservation threat; flood events have been considered normal, healthy episodes for floodplain wetland plant communities and are great for fish and wildlife.

There is also potential for conflict with adjacent neighboring properties regarding flood issues. The project has been designed to reduce the potential for flooding on adjacent properties, however, there are landowners adjacent to the W. Fork Dairy Creek that may experience change as a result of the project. The most serious issue along the Creek is severe erosion along its' banks. The DCMB project will be re-contouring the left bank of the creek within the project area, but not the right bank; and restoration of the left bank may result in change in the right bank.

Remedies to flood damage will vary based on the nature of the damage. During the operation phase of the Bank, prior to implementation of the LTMP, issues such as erosion or damage from flooding were addressed through re-planting and seeding in addition to the implementation of construction best management practices; the project was also engineered to have a low possibility for erosion or damage associated with flooding. The most typical issues include erosion and damage to trees and shrubs. If erosion has impacted a plant community on 500 square feet or more, the area should be re-seeded and planted. In more severe cases of erosion, the LT Land Manager will need to determine if additional erosion control measures or re-construction is necessary to meet Bank objectives. If, at any time, the Bank undergoes change which threatens neighboring properties, the LT Land Manager will prioritize repairing or re-designing a Bank feature to reduce this risk.

3. Changes to stream mitigation intermittent side-channel. The intermittent side-channel has been designed to be as "natural" as possible with the understanding that streams are dynamic systems and will change over time. Evolution of the side-channel may include a change of footprint, and sedimentation and erosion in areas. Dynamic change over time is expected and desired as long as the change that occurs does not result in the loss of functionality of the water resources or reduction in waters resource acreage.

Similar to the remedies for flood damage (B.2), if the Bank undergoes change which threatens neighboring properties, ecological function, or objectives, the LT Land Manager will prioritize repairing or re-designing a Bank feature to reduce this risk and ensure the objectives are met.

4. ***Herbivory damage.*** In general, damage by herbivores is not considered a conservation threat as the Bank was developed to provide fish and wildlife habitat, including forage. Plant communities are well established and are unlikely to be negatively affected by light to moderate herbivory. Some herbivory by deer and elk has been observed but re-planting has not been necessary. If species of trees/shrubs are impacted from herbivory, opening up large, forested areas (>1 acre), they should be replanted with native trees/shrubs. Browse protection or caging may be deemed necessary by the LT Land Manager on "key" trees if herbivory damage is observed to be overly destructive.

5. ***Fire***. There is the potential for damage related to wildfire. Wildfire has a low potential for damaging the Bank as most of the property is too wet to burn (i.e. green vegetation, saturated/inundated conditions) and has a low fuel load. The Bank property was previously in agricultural use and there is a low amount of stored fuel (i.e. wood, logs). Native plant communities have also historically evolved to thrive from semi-frequent wildfire; therefore, we don't anticipate wildfire to be conservation threat. If a wildfire does enter the Bank and kills native trees and shrubs, opening up areas larger than 1-acre, the area should be re-planted at the discretion of the LT Land Manager. Additional weed control efforts should be made the first year following a fire.

6. ***Pedestrian and domestic animal trespass.*** The Bank property is surrounded by privately owned farmland, however, in future years the adjacent properties may be developed into residential and commercial use. Trespassing potential will be limited by access gates, fencing, and signage; however, it is possible for trespassers to enter the site on foot. The LT Land Manager will visit the DCMB property monthly to determine if trespass has caused any damage that needs to be rectified or any access controls require maintenance.

7. ***Dumping of litter.*** There is the potential for the dumping of litter from trespassers or adjacent properties. However, with the access controls in place it would be unlikely for this to occur. LT Land Manager will identify any dumping of litter during quarterly inspections and arrange for its removal. Small amounts of litter (ie several garbage bags) will be collected during maintenance visits. If a large volume of litter is dumped (ie pickup truck load), the removal will be scheduled with a truck/trailer of sufficient size; this will be completed by LT Land Manager.

8. ***Changes to hydrology of W. Fork Dairy Creek and/or surrounding area***. As the region becomes more urbanized and population growth continues there is potential for changes to the hydrology of the DCMB. Urbanization requires the use of more water to sustain the growing population. However, the DCMB is located in a low elevation floodplain which will likely receive increased runoff (indirectly) from an increase in impervious surface as a result of urbanization. Any trending changes to the hydrology of the region would occur on timescales of decades to centuries and are not likely to be noticeable in the short term. The LT Land Manager is not liable for long term change that may occur to W. Fork Dairy Creek. If the Bank becomes drier in the future there may be a need to plant/seed more drought tolerant species. Any planting or seeding as a result of long-term change would be funded by the catastrophic event category for replanting.

9. ***Potential Impacts from Easements and HWY 6 ROW***. Two storm sewer line easements exist within the Bank that are owned by Clean Water Services. If CWS needs to make repairs to a storm water pipe, there may be damage to the plant community. The easements are 10 feet wide, so any

potential impacts should be minimal. If plant communities are impacted, they will be re-seeded and planted the following planting window; it is also anticipated that additional weed control efforts may be necessary after replanting. It is assumed that CWS will compensate the landowner for damage to plant communities as a result of easement maintenance. If additional funds are needed by the LT Land Manager, they would be utilized from the "unforeseen event damage" category (Table 2).

Potential impacts associated with the HWY 6 ROW include litter, weed seed transport, damage to plant communities, and fire. The southern Bank perimeter (within Phase 2) will be observed during seasonal site visits by the LT Land Manager to ensure that damage has not occurred. If damage to the Bank is identified, it will be addressed based on the nature of the damage.

C. Management Limitations

There are certain constraints that must be recognized that limit management alternatives or methods at the Bank. For all approved mitigation sites, any volume of new removal or fill activities that result in a loss of wetland area or function require double mitigation, per DSL rules (OAR 141-085-0520(3) and may also require a Clean Water Act Section 404 permit for the placement of dredged or fill material in a water of the U.S. The following issues may constrain site management and will require periodic action to ensure the conservation values continue to be sustained at the site.

1. Use of Pesticides. The baseline condition of the Bank site requires a low amount of herbicide application maintenance, and it is anticipated that this will be reduced over time or not be necessary at the time of Bank transfer to Long-Term Land Manager. If Pesticide applications are necessary during long-term management, the potential changes to pesticide laws, chemical formulations, cost of application, or other agency policies regarding pesticide use, may affect the Long-Term Land Manager's ability to use pesticides for long-term maintenance. If pesticides were not allowed or feasible for use on the Bank project for long-term management, other management methods for weed control would need to be implemented such manual or mechanical weed control which could be more costly them chemical application.

2. ***Site access***. Site access will be provided through an access easement as shown in Figure 2. The only entry point into the Bank will be through the eastern edge of the Phase 1 area. A locking entry gate is in place with parking outside of the Bank but within the tax lot near the entry gate. Once residential development occurs, access will be maintained to the Bank by connecting the Bank entry point to an established road; this future road is in the approximate location of the current access easement.

3. Damage from flooding. The Bank is subject to periodic flooding from the W Fork Dairy Creek. These flood events can bring in non-native weed seed, litter, and damage plants. Most of the Bank site is vegetated with trees and shrubs which reduce the potential for weed infestations. If severe flooding causes damage to the native plant communities, re-planting may be necessary to re-establish native dominated plant communities in those areas.

4. ***Sewer Easement with Clean Water Services.*** Two, small, 10-foot-wide sewer easements exist that enter the Phase 1 area at the eastern perimeter. The only activities restricted in these areas is the planting of trees or shrubs over the easements and soil disturbance deeper than 3 feet; neither of

these activities should be necessary for LT Land Manager as the site was planted many years ago and no new planting is required.

3. Management, Maintenance, and Monitoring

A. Resource Management

The overall goal of long-term management is to sustain the ecological functions and values of the aquatic resources and buffer area developed during the establishment of the Bank as described in Section 2 of this document. Ongoing monitoring and maintenance tasks are intended to sustain these values in perpetuity. Staff responsible for monitoring and management will have the necessary knowledge and technical skills to recognize any problems that may arise and to apply appropriate management actions to sustain these goals.

The long-term manager will conduct regular site examinations and monitoring of selected characteristics to determine stability and ongoing conditions and trends of the Bank. The following elements will be evaluated: invasion of exotic or undesirable species, degree of erosion, threats to water quality, animal damage, fire hazard, presence of trash or vandalism, and/or other aspects that may affect project objectives and warrant management actions.

Vegetation management will be the primary ongoing task at the site. Native vegetation should dominate at the site and invasive species should be at levels that do not interfere with site objectives. The cover or density of vegetation should be at sufficient levels to achieve the expected functions and values predicted. Invasive species, and Oregon Department of Agriculture listed Noxious Weeds, should be controlled; other non-natives may warrant control if they are deemed by the long-term manager to be degrading site quality. The expected frequencies and costs of vegetation management tasks are listed in Table 2.

B. Infrastructure, Access Control, Fire Hazards, Trash, & Trespass

Infrastructure on the property consists of unimproved access roads, perimeter fencing on eastern Bank boundary, and an Access gate *(***Figure 2** site plan*)* which will be maintained in serviceable condition. Inlets and outlets of constructed stream channels and stream banks, will be inspected for signs of erosion and sediment deposition. The land manager will also inspect the perimeter of the property to identify any encroachments or any violations of the site protection instrument. Any litter or trespass damage will be removed or repaired in the same season in which it occurred. Wildfire is not expected to damage the plant communities except conifers, which would be replanted in the following dormant season. Hazard trees that pose a threat to infrastructure or adjacent property may be felled and will be left on site. The long-term manager will inspect each of these features at least 4 times per year, during different seasons to identify any maintenance needs. The expected frequency of repair or replacement for each feature, and the cost for each is provided in Table 2.

4. Long-Term Funding and Task Prioritization

A. Funding

During the Establishment period while the Bank is actively selling credits, the Sponsor will be capitalizing a long-term care fund, according to the terms of the MBI and credit release schedule. If necessary, this can be overseen by DSL as a separate financial security, such as an escrow account.

As DSL lacks capacity to administer such an account long-term, establishment of a trust or conservatorship would be expected if the sponsor chooses to maintain all the roles in ***Table 1*** *for the long term.*

Long-term management of the Bank, as described herein, is funded by the annual revenue generated by a long-term funding mechanism or equivalent mechanism as approved by the Co-chair Agencies. The Sponsor is responsible for managing the long-term funding mechanism unless and until it is conveyed to another party as approved by the Co-chair Agencies. The long-term fund manager will manage the long-term management fund prudently to provide ongoing revenue to use for management and maintenance of the property. The Sponsor has elected to use an Endowment Fund as a long-term funding mechanism and will begin capitalizing the long-term funding account for these purposes as a condition of the Credit Release Schedule in **Exhibit D**.

The long-term management period of the Bank will begin when the Bank is closed, including if it closed by default. Until the long-term management period begins, any income from the long-term management funding mechanism shall be reinvested in the funding mechanism.

The Sponsor plans to establish and Endowment Fund with the Oregon Community Fund to provide to the CE Holder upon Bank closure. The Bank will be constructed in Phases and Long-Term responsibilities and Endowment will be, subject to Co-chair Agency approval, transferred to the Co-Chair approved CE Holderupon closure of each Phase.

Table 2 contains a summary of the anticipated annual costs of long-term management for the Bank. These costs include estimates of time and funding needed to conduct the basic monitoring site visits, vegetation management and maintenance activities. The initial size of the long-term funding mechanism is $232,300 for Phase 1, and $92,500 for Phase 2, and reflects an estimate of the amount needed to generate sufficient income to pay long-term management costs in perpetuity. When necessary, the long-term manager may determine that protection of the principal is more important than specific management tasks in any given year and may choose to not execute the management tasks.

B. Task Prioritization

Unforeseen circumstances may create a need for prioritization of management tasks. In general, tasks are prioritized in this order:
1) Actions required by a local, state, or federal agency;
2) Repair of water or grade control structures that would otherwise threaten loss of wetland area;
3) Tasks necessary to maintain or remediate habitat quality; and
4) Monitoring resources.

Table 2: **Anticipated Ongoing Operations and Maintenance Costs**

Work Elements	Anticipated Frequency	Target Date	Units	Unit Price	Cost	Divide years	Total Annualized Cost
1. Vegetation Management and Feature Maintenance							

P1: Mowing perimeter, access roads and small areas of invasive species.	Annual	Summer/ Fall	2 acres	$250	$500		$500
P2: Mowing perimeter, access roads and small areas of invasive species.	Annual	Summer/ Fall	1 acre	$250	$250		$250
P1: Spot spraying invasive species	Annual	Summer	10 acres	$215	$2150		$2150
P2: Spot spraying invasive species	Annual	Spring/ summer	4 acres	$215	$860		$860
P1: Monitoring for invasive species	Annual	Summer	6 hours	$60	$360		$360
P2: Monitoring for invasive species	Annual	Summer	2 hours	$60	$120		$120
P1: Hand pulling/ removing trees from PEM area (7.6 ac)	Every 3 Years	Spring	20 hours	$45	$900	3	$300
P2: Hand pulling/ removing trees from PEM area (2.1 ac)	Every 3 Years	Spring	8 hours	$45	$360	3	$120
P1: Erosional area (bare ground) re-seeding/planting	Every 3 Years	Fall	0.25 acre	$2000	$500	3	$167
P1: Herbivory Damage	Every 3 Years	Winter	50 trees	$3	$150	3	$50
P2: Herbivory Damage	Every 3 Years	Winter	50 trees	$3	$150	3	$50
P1: Stream mitigation repairs (sedimentation, inlet/outlet)	Every 10 Years	Summer	1 acre	$5000	$5000	10	$500
P1: Unforeseen Event Damage (ie fire, insect pests, severe erosion)	Every 30 Years	Summer	10 acres	$2000	$2000 0	30	$667
P2: Unforeseen Event Damage (ie fire, insect pests, severe erosion)	Every 30 Years	Summer	3 acres	$2000	$6000	30	$200
2. Access Control							
P1: Fence maintenance and repair	10 Years	Summer	2000 feet	$2/ft	$4000	10	$400
P2: Fence maintenance and repair	10 Years	Summer	1200 feet	$2/ft	$2400	10	$240
P1: Maintain/ repair signs	Annual	As needed	2 hours	$45	$90		$90
P2: Maintain/ repair signs	Annual	As needed	1 hour	$45	$45		$45
P1: Gate replacement	15 years	As needed	1 gate	$2000	$2000	15	$134
3. Litter & Vandalism							

P1: Litter & Vandalism patrol	Quarterly	As needed	4 hours	$45	$180		$720
P1: Dump fee and mileage	Annual	As needed	1 dump run	$125	$125		$125
P2: Litter and Vandalism patrol	Quarterly	As needed	2 hours	$45	$90		$360
P2: Dump fee and mileage	Annual	As needed	1 dump run	$125	$125		$125
4. Administration							
P1: CE Holder Project Management	Annual	As needed	4 hours	$85	$340		$340
P2: CE Holder Project Management	Annual	As needed	2 hours	$85	$170		$170
P1: Reporting and Fiscal Administration	Annual	As needed	8 hours	$75	$600		$600
P2: Reporting and fiscal administration	Annual	As needed	4 hours	$75	300		$300
P1: Communication with neighbors	Annual	As needed	4 hours	$85	$340		$340
P2: Communication with neighbors	Annual	As needed	2 hours	$85	$170		$170
P1: Property Taxes (97.5 acres)	Annual	Annual	NA		$970		$970
P2: Property Taxes (34.5)	Annual	Annual	NA		$345		$345
P1: Legal defense contingency	10 years	As needed	20 hours	$200	$4000	10	$400
P2: Legal defense contingency	10 years	As needed	10 hours	$200	$2000	10	$200
P1: Travel Expense	Annual	As needed	200 miles	$0.57	$114		$114
P2: Travel Expense	Annual	As needed	200 miles	$0.57	$114		$114
	TOTAL ANTICIPATED ANNUAL O&M COSTS					**Phase 1**	**$9,197**
						Phase 2	**$3,399**

An endowment fund will be used as the funding mechanism. The formula for calculating the amount needed in the fund is:
(Annual revenue needed) divided by (capitalization rate) = Endowment Amount
Capitalization rate = rate of investment return minus rate of inflation.

For the estimate of the necessary Endowment Fund amount for the DCMB we assumed, the Investment return at 6.5% minus Inflation at 3% = Capitalization rate: 3.5%.
For the anticipated annual costs of Phase 1 ($8,243) a total of $235,600 would be needed in the fund; for Phase 2 ($3,349) a total of $95,700 would be needed in the fund.

<u>Work Element Descriptions</u>
Mowing Perimeter, access roads, and small areas of invasive species- This task includes mowing approximately 700 linear feet of unimproved access roads (grass), areas of the Bank perimeter that are a source for weed seed, and small populations of invasive species (if found). The cost for this task is based on hiring a mowing contractor to mow by the acre; all mileage, fuel, etc. costs are assumed in the per acre cost.

Spot Spraying Invasive Species- This task includes spot-spraying approximately 10% of the P1 and P2 project areas on an annual basis. There is low weed cover within the Bank (<5%) and it is anticipated that herbicide application will be even less frequent on the long-term. However, there is potential for weeds to spread into the site and should be treated. Alternatively, If it is determined that spot-spraying is not necessary this funding can be used to manually remove weeds. The per unit cost assumes all costs including materials, mileage, etc.

Monitoring for Invasive Species- The LT Land Manager should walk through the project area annually to determine if and where invasive species are becoming established. No specific monitoring techniques or report is necessary, this "monitoring" is only to inform the Steward of management needs and for planning purposes. This cost includes the estimated hours to complete the monitoring; mileage expense is included in Administrative costs.

Hand Pulling/ Removing Trees from PEM Area- The PEM areas can have some trees and shrubs but should be kept to approximately 5% cover or less within the areas. Approximately every 3 years, the PEM areas should have trees and/or shrubs hand pulled (or dug) when soils are moist. Pulled material can be left onsite. This cost was estimated based on hiring a forestry contractor to hand pull (labor) trees/shrubs; this per unit cost includes all other expenses such as mileage, travel, etc.

P1 Erosional Area Re-Seeding/ Planting- Some areas within and in close proximity to the Stream Mitigation area may have erosion that requires re-seeding/planting. The need to re-seed or plant will likely occur every three years or less frequently. It is estimated that the cost to re-seed and plant approximately 1,600 stems per acre is $2,000/acre. This unit cost includes all expenses such as plant material, travel, mileage, etc.

P1 and P2 Herbivory Damage- There is potential for herbivory damage on the long-term. Most of the Bank is planted in forest, and trees are approximately 10 years old, so there is a low likelihood of large areas of herbivory damage; most damage would occur in the early years after planting. It is estimated that approximately 50 trees may need to be replanted every 3 years, for each Phase. The cost of a bareroot tree and labor to install is less than $2; we have budgeted slightly higher costs because of the small number of trees that maybe be needed (economy of scale).

P1 Stream Mitigation Repairs- Minor improvements/repairs may be needed within the stream mitigation areas such as removing sediment that has built up in an unwanted area (ie changing flow), or the inlets or outlets to the channels need adjustment. This cost includes hiring a contractor with small equipment to complete the task. It is assumed the associated costs such as fuel, mileage, etc. are included in the total estimated cost.

Unforeseen Event Damage- An unforeseen event such as fire, flooding, pest damage, etc. has potential to impact the functionality of the Bank. It is unlikely that an event will occur but is important to be prepared in case one does. We are preparing for an event that may take place approximately every 30 years that would result in needing to replant approximately 10% of the project area. The per unit cost assumes all expenses including plant material, labor, travel, etc.

Fence Maintenance and Repair- The Bank boundaries along the northern, western, and southern boundaries will be marked using T-Posts without fencing. The eastern Bank boundary is currently in agriculture but may be converted to residential and commercial development in future years. The eastern perimeter will have T-Posts installed every 50 feet with metal fencing to keep pedestrians and domestic pets off the property. The per unit cost includes hiring a fencing contractor and all associated fees. *Note: if the area adjacent to the Bank to the east is developed residential, there will be fence installed by the developer; it is unclear at this time what sort of fence would be installed but the Sponsor will work with the adjacent landowner in that case.*

Maintain and Repair Signs- Several signs were installed around the perimeter of the Bank to educate the public about the project and restrict certain uses. These signs may require periodic maintenance or replacement. This cost includes the time to inspect and make repairs to the signs. Travel expenses are included in Administration costs.

Gate Replacement- There is one access point and gate to the project area. This gate is located in the Phase 1 project area on the eastern perimeter. The gate may need to be replaced approximately every 15 years. The gate replacement should be completed by a gate contractor and the estimated cost is assumed to include all other associated costs.

Litter and Vandalism Patrol, Dump Fee and Mileage- On an annual basis at minimum the project area should be observed to determine if litter or vandalism have occurred. Litter will be collected and disposed of offsite. The cost to fill a pickup load or small trailer and dispose at landfill is $125; this includes dump fees and mileage.

CE Holder (Steward) Project Management- Project management time will be needed on an annual basis to direct work tasks, manage contractors, funding, etc.

Reporting and Fiscal Administration- This refers to internal reporting or administration necessary for the Steward to manage the Bank. It includes items such as: financial reporting, accounting, fund management, reporting to board members, etc.

Communication with Neighbors- It is assumed that some communication may be necessary with neighboring landowners. Currently, there is very little to no communication with adjacent neighbors.

Property Taxes- Taxes will be paid by the Steward. The conservation easement tax rates are similar to that of lands in agricultural use.

Legal Defense Contingency- There is potential for the need of legal assistance through the life of the project. This item is being funded in case there is a need for legal defense.

Travel Expense- It is assumed that the Steward will visit the site on a quarterly basis, and mileage is budgeted for 5 visits annually. Mileage is assumed to be 20 miles or less each way, or 40 miles total to the project area.

5. Transfers and Amendments

A. Transfer and Assignment of Long-Term Management Responsibilities

Transfer during the Establishment Period shall be subject to the terms of the MBI. Transfer or assignment of any portion of or interest in the Bank shall be subject to the requirement that any funds pledged toward the long-term management fund shall continue to be accrued and expended in a manner consistent with the MBI and the LTMP. If the responsibilities of long-term management of the land and/or the management fund are accepted by a new long-term manager other than a successor or assign, they must accept these rights and obligations by signing a written amendment to the LTMP. The Bank Sponsor must also confer any necessary real estate interest and funding to ensure the new long-term manager or long-term funding manager can perform the tasks described here in. Transfer or assignment is subject to the Co-chair Agencies finding that the new long-term manager is an appropriate entity to take on these responsibilities. Approval of the request to transfer will not be unreasonably withheld.

Transfer during the Long-Term Management Period: After bank closure, the site protection instrument recorded on the title, per **Exhibit F**, shall require notice to DSL and to the Corps when there are changes in land ownership or in the identity of a conservation easement holder. The Co-chair Agencies may use this notice as an opportunity to inform the new party of their respective regulations that apply to any proposed earth moving in the waters of the state or waters of the US within the Bank Property.

B. Amendments

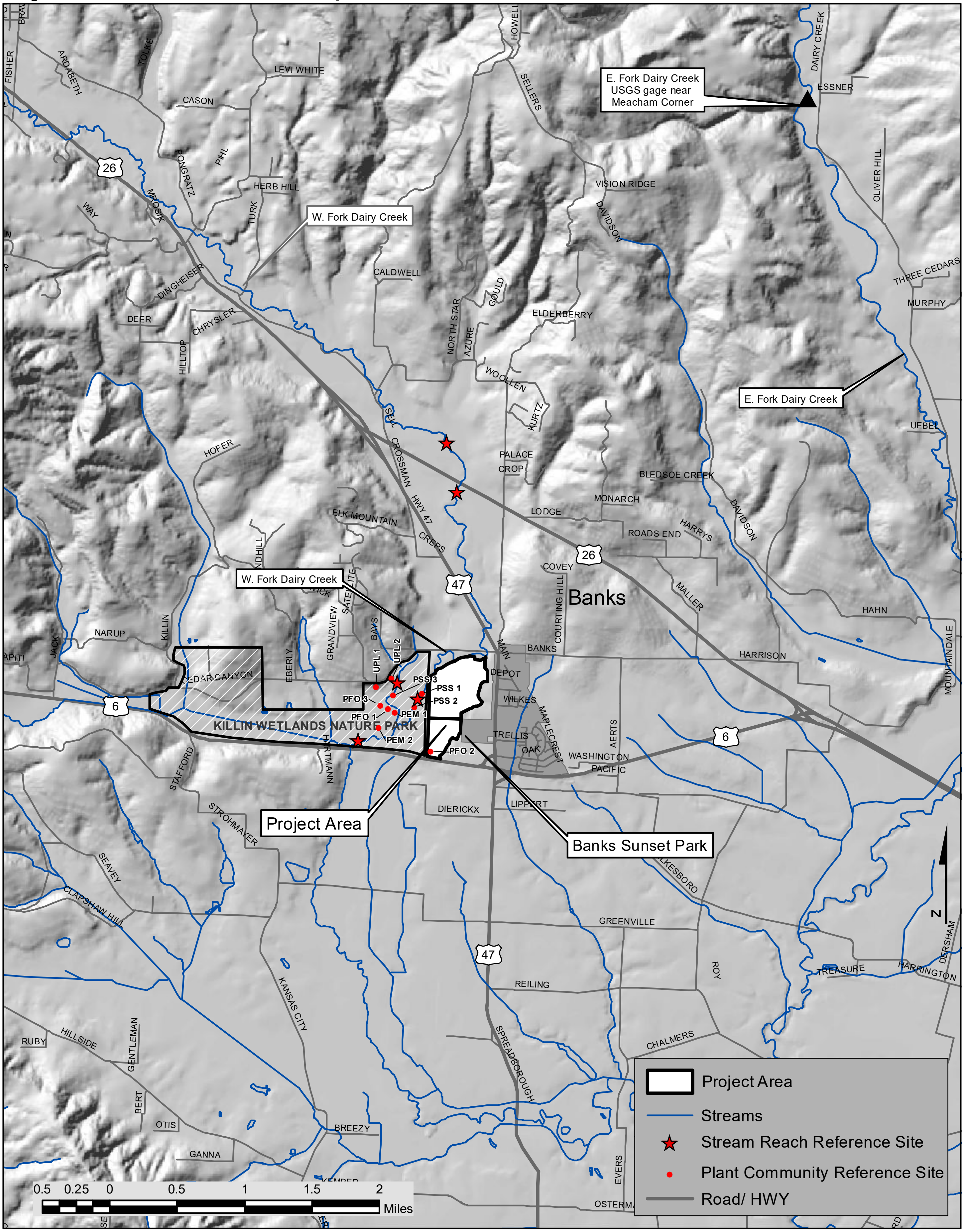
Prior to Bank closure, this MBI including its Exhibits such as this LTMP may be modified according to the terms of the MBI. Modifications will be subject to the review process in 33 CFR 332.8(g). Upon written request from the Sponsor or long-term manager, if different than the Sponsor, the necessary parties may meet and confer with DSL and the Corps from time to time to discuss possible revisions of the LTMP to better meet management objectives and sustain the conservation values of the Bank. The Landowner, if other than the Sponsor, may also be invited to such meetings. All amendments and modifications to the LTMP shall be fully set forth in a separate document signed by the Sponsor and Co-chair Agencies that shall be appended to the MBI.

Within 60 days of the Corps receiving the proposed final modification or amendment to LTMP, the district engineer must notify the necessary parties to include DSL, the long-term manager, and other members of the IRT of his intent to approve or disapprove the proposed modification or amendment.

Attached:

Figure 1. Location Map
Figure 2. Mitigation Bank Site Plan

Figure 1: Site Location Map



Background data layers compliments of RLIS.

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 1. Site Location Map 220127.mxd

Map created by Miles Eubanks. Ver. 1.22

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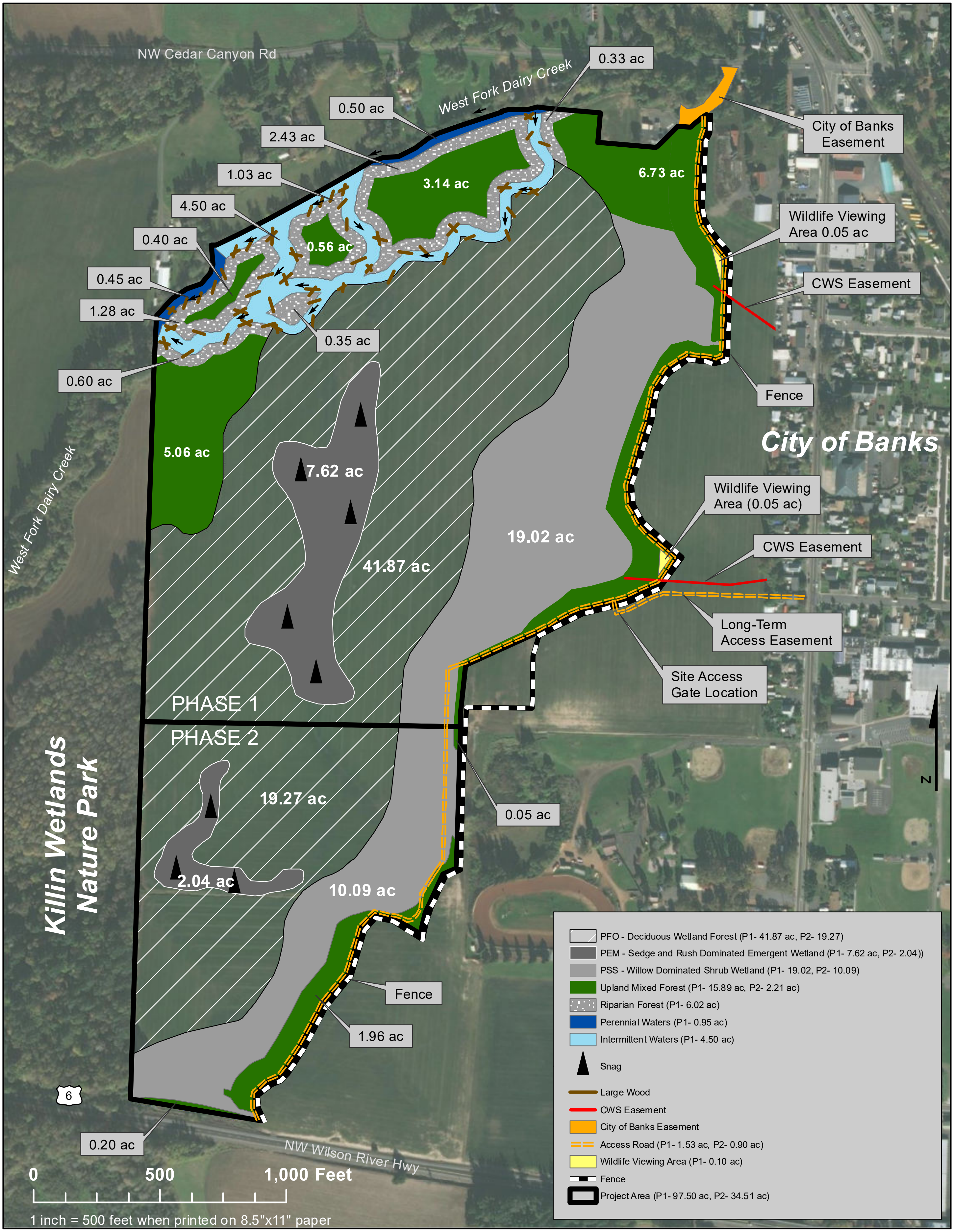
Figure 2: Mitigation Bank Site Plan



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

\\gb-server\GB-Network\wetland banking\washington county\Dairy Creek Bank\GIS\Instrument\2022_January_DRAFT_Instrument Maps\mxds\Figure 2. Mitigation Bank Site Plan 220131.mxd

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