LAKE WHATCOM WATER AND SEWER DISTRICT
EUCLID LIFT STATION MITIGATION SITE ANNUAL REPORTING

The Lake Whatcom Water and Sewer District is requesting proposals from qualified firms to complete the remaining three years of the five-year annual mitigation site reporting requirement for a wetland buffer mitigation site constructed as part of the Euclid Lift Station Improvements project completed in 2024. Work shall include annual site visits to evaluate establishment and growth of the mitigation, preparation of the annual wetland mitigation monitoring report and completion of the required reporting forms to meet the reporting requirements per Whatcom County requirements. Proposal submittal requirements and information have been attached to this communication.

General Vicinity Map – Various Locations

Geneva, Sudden Valley and North Shore Neighborhoods of Bellingham, WA



Proposals shall be delivered by November 12, 2026 no later than 4:00 p.m. to Attn: Greg Nicoll, Lake Whatcom Water and Sewer District, 1220 Lakeway Drive, Bellingham, WA 98229. Questions should be directed to Greg Nicoll at 360-734-9224 or greg.nicoll@lwwsd.org. For proposals submitted by e-mail, the proposer is encouraged to follow up to confirm receipt if a confirmation e-mail from the District is not received prior to the deadline.

Any firm failing to submit information in accordance with the procedures set forth in the Request for Proposals may not be considered responsive and may therefore be subject to disqualification by the District.

LAKE WHATCOM WATER AND SEWER DISTRICT

EUCLID LIFT STATION MITIGATION SITE ANNUAL REPORTING
REQUEST FOR PROPOSALS

I. INTRODUCTION

A. The Lake Whatcom Water and Sewer District (District) is requesting proposals from qualified individuals or firms to provide mitigation site annual reporting as described in Appendix A – Scope of Work. Work includes providing assessment reports and developing a security master plan including the implementation plans and estimated physical security upgrade costs for recommended improvements resulting from the study. The comprehensive security report must address the security risks and requirements of each facility.

B. After reviewing this RFP, any firm that determines it has the necessary expertise and experience to successfully perform the required services may submit its Proposal, addressing the items set forth herein. A general overview of the selection process is as follows:

1. Consultants shall deliver the Proposal to the District no later than 4:00 pm PST, November 12, 2026, after which time they will be reviewed and evaluated. Proposals received after that time will not be reviewed.

2. Proposals must be submitted in one of two ways:

   a. electronically in flattened PDF format to greg.nicoll@lwwsd.org. The proposer is encouraged to follow up to confirm receipt if a confirmation e-mail from the District is not received prior to the deadline.

   b. in a sealed envelope plainly marked with the project name "Lake Whatcom Water & Sewer District Facilities Security Assessment Proposal" delivered by hand or by U.S. Mail to the address below:

      Lake Whatcom Water and Sewer District
      Attn: Greg Nicoll
      1220 Lakeway Drive
      Bellingham, WA 98229

   Proposals delivered by hand or mail shall include a USB drive including a flattened PDF of the proposal. The proposer may, at their option, also provide a hard copy of their proposal.

3. The District may, at its option, contact a Consultant and ask clarifying questions concerning the Consultant's Proposal.

4. Questions may be submitted to greg.nicoll@lwwsd.org by 1:00 pm on November 5, 2026. The District will not respond to questions submitted after this deadline.

C. Period of Performance

All work shall be completed no later than December 31, 2029 in accordance with the permits, approvals and reports included in this request.

D. Limitations on Changes to Labor Rates.

1. The Consultant agrees that all Billing Rates identified in this Agreement shall be effective for the entire Contract duration, including all amendments; provided however, Billing Rates may be adjusted at the sole discretion of the District on an annual basis.

2. Billing Rate increases must be based on actual and verifiable increases in labor costs.

3. Should the Consultant seek an adjustment in Billing Rate(s) or ODC mark-up, Consultant must notify the District in writing of its request to modify the existing rate. Consultant shall submit only one request per year that must include all individual rate increase requests. This request shall include the amount of the increase for each rate in addition to the new rate.

II. BACKGROUND

The District is a special purpose district authorized under Title 57 Revised Code of Washington, providing water and/or sewer service to a population of approximately 11,000 customers around Lake Whatcom near Bellingham, Washington. The District owns and operates the Euclid Sewer Lift Station (SPEUC) located between Euclid Avenue and the western shore of Lake Whatcom, near the north end of the lake (nearest address: 1602 Euclid Avenue). In 2024, the District completed a project to complete electrical and control improvements at the lift station, including installing a new standby generator. This project required impacting wetland buffer and, as a condition of the Whatcom County Shoreline Substantial Development Permit (SSDP), enhancement of the adjacent buffer was required as further described in the attached permit and reporting documents. To meet this requirement, the District enhanced approximately 720 square feet of existing buffer by removing non-native species and planting new native plants. To document the successful establishment of the enhancements, the County also required maintenance and monitoring of the site for a period of 5 years following completion of the enhancements, which was achieved in July 2024.

To date, the As-Built Report (Year 0) and Year 1 and Year 2 monitoring reports have been completed and submitted to Whatcom County. This contract will complete all work to satisfy Year 3, 4 and 5 monitoring and reporting requirements as further described in the appendices to this RFP and provide guidance and recommendations for addressing any site deficiencies that may preclude final acceptance of the mitigation site.

III.PROCUREMENT PROCESS

A. General Information

1. Compliance with Legal Requirements

a. The procurement of these consultant services will be in accordance with applicable District, federal, state and local laws, regulations and procedures. The District reserves the right to reject any and all proposals received. Any Consultant failing to submit information in accordance with the procedures set forth herein may not be considered responsive and may therefore be subject to disqualification by the District.

b. In accordance with the provisions of this RFP, the District will evaluate all proposals received found to be in compliance with this RFP. The final selection, if any, will be that Consultant which, in the opinion of the District, best meets the requirements set forth in the RFP and is determined to be the most highly qualified for the services requested.

2. Costs Borne by Consultants

All costs incurred in the preparation of proposal and participation in this proposal and negotiation process shall be borne by the proposing firms.

3. Public Disclosure

Once in the District's possession, proposals shall become property of the District and considered public documents under applicable Washington State laws. All documentation that is provided to the District may be subject to disclosure in accordance with Washington State public disclosure laws.

B. Protests

1. Time to File a Protest

    a. Any prospective Consultant may file a protest challenging the requirements identified in the RFP provided such protest is received no later than ten (10) calendar days prior to the date established for responding to this solicitation.

    b. A financially interested Consultant may file a protest based on evaluation of proposals provided such protest is received no later than five (5) calendar days after the protesting party knows or should have known of the facts and circumstances upon which the protest is based.

    c. In no event shall a protest be considered if all proposals are rejected or after execution of this contract.

2. Form of Protest

    A protest shall be in writing and addressed to: Attention: General Manager, Lake Whatcom Water & Sewer District, 1220 Lakeway Drive, Bellingham, WA 98229. The protest shall include the following:

    a. The name, address and telephone number of the party protesting or their representative;

    b. The RFP number and contract title under which the protest is submitted;

    c. A detailed description of the specific grounds for protest and any supporting documentation; and

    d. The specific ruling or relief requested.

3. Determination of Protest

    Upon receipt of a timely written protest, the District General Manager shall investigate the protest and shall, prior to execution of the contract, respond in writing to the protest. The District General Manager's decision shall be considered the final action by the District.

4. Compliance with Protest Process

    Failure to comply with these protest procedures will render a protest untimely and inadequate and may result in rejection thereof by the District.

5. Exhaustion of Administrative Remedies

    As a mandatory condition precedent to initiating a lawsuit against the District, a prospective Consultant or a Consultant shall comply with the Protest Procedures defined herein.

6. Venue

    By responding to this RFP and for the convenience of the parties, the prospective Proposer or a Proposer acknowledges and agrees that a lawsuit or action related to or arising out of this procurement shall be brought in the Superior Court of Whatcom County, Washington.

C. Addenda

In the event it becomes necessary to revise any part of the RFP, addenda will be provided to all firms still under consideration at the time the addendum is issued. If any firm has reason to doubt whether the District is aware of the firm's interest, it is the responsibility of the firm to notify the District to be sure that addenda are received. E-mail or call such notice to Greg Nicoll (greg.nicoll@lwwsd.org), 360-734-9224.

D. Contract Terms and Conditions

A copy of the sample agreement for personal services is included as Appendix B.

1. By submitting a proposal, the Consultant represents that it has carefully read the terms and conditions of the RFP and agrees to be bound by them.

E. Cost and Pricing Data

The selected Consultant shall provide cost and pricing data as part of their proposal as further described in Section VI and below.

1. Direct Salaries

   Selected Consultant and its sub-consultants shall submit a list of employees anticipated to be utilized in the Project, in alphabetical order (last name first), with:

   - job classification,
   - rate of pay, and
   - salary review date.

2. Overhead Rates

   Selected Consultant and its sub-consultants shall provide the current audited overhead schedule, audit report, and cost detail by general ledger account.

3. Billing Rates

   Submit only for certain qualifying small firms.

   Small firms that do not have an accounting system in place, that identifies direct and indirect costs separately, generally use billing rates. Fully burdened billing rates, which include labor, overhead costs and profit, are allowed on a case-by-case basis for those firms that typically use this method for billing purposes.

4. Other Direct Cost(s)

   a. Identify all Other Direct Cost(s) (ODC) for this project and the rationale used as a basis for this cost.

   b. For each ODC, provide the unit prices and/or rates with supporting rationale, historical data and estimating methodology used to validate these rates.

   c. Failure to identify ODC results in a presumption that there are no ODC.

IV. INSURANCE REQUIREMENTS

A. Prior to execution of the Agreement, the Selected Consultant shall file with the District certificates of insurance and endorsements from the insurer(s) certifying to the coverage of all insurance required in accordance with the District's standard agreement. All evidence of

insurance must be certified by a properly authorized officer, agent, general agent or qualified representative of the insurer(s) and shall certify the name of the insured, the type and amount of insurance, the location and operations to which the insurance applies, the expiration date, and provides that the District receives notice at least thirty (30) calendar days prior to the effective date of any policy limit or cancellation of required coverages. The Consultant shall notify the District at least thirty (30) calendar days prior to the effective date of any cancellation or reduction in coverage in the policy. The Consultant shall maintain during the entire Contract period, insurance coverage at least as broad as the limits and coverage outlined in the District's standard agreement. The Consultant shall, upon demand of the District, make available to the District at Consultant's local office in all such policies of insurance and the receipts of payment of premiums thereon. Failure to provide such policies of insurance within a time acceptable to the District shall entitle the District to suspend or terminate the Consultant's work hereunder. Suspension or termination of the Consultant Agreement shall not relieve the Consultant from its insurance obligation hereunder.

B. The Consultant shall obtain and maintain at a minimum the limits of insurance set forth in the Consultant Agreement. By requiring such minimum insurance, the District shall not be deemed or construed to have assessed the risks that may be applicable to the Consultant under the Agreement. The Consultant shall assess its own risks and, if it deems appropriate and/or prudent, maintain greater limits and/or broader coverage.

C. Each insurance policy shall be written on an "occurrence" form; excepting that insurance for professional liability, errors and omissions when required, is acceptable on a "claims made" form.

D. If coverage is approved and purchased on a "claims made" basis, the Consultant shall continue coverage either through (1) policy renewals for not less than three years from the date of completion of the work which is the subject of this Agreement or (2) the purchase of an extended discovery period for not less than three years from the date of completion of the work which is the subject of this Agreement, if such extended coverage is available.

E. If, in order to meet the insurance requirements, the Consultant must rely on the insurance to be provided by one or more subconsultant, then such subconsultant(s) shall be required to meet all of the requirements herein applicable to the insurance they are providing, and shall include District and Consultant as additional insureds on all liability policies except Professional Liability/Errors & Omissions and Workers Compensation. The District will not make any payments on work performed by subconsultants until all insurance documentation from such subconsultants have been received and accepted by the District.

F. Provided the affected insurance policies permit the following waiver, without voiding coverage, Consultant and District waive all rights against each other to subrogation for damages covered by property insurance.

V. EVALUATION AND SELECTION CRITERIA

A. All Proposals will be evaluated by a Consultant Selection Panel ("Panel"), which will be responsible for ranking of the Proposals. The criteria outlined below will be used in evaluating the Proposals and determining the most qualified Consultant. The maximum points possible will follow each criterion listed. The points indicate relative weight or importance given to each criterion.

B. Following the review of the proposals, the evaluators will use the points to score each Proposal.

Each evaluator will put the scores in rank order, with the highest scored Consultant first, the second-highest scored Consultant second, etc. This ranking will then be totaled. From the ranking, the District intends to recommend the most qualified Consultant to the Board of Commissioners for approval.

VI. DOCUMENTATION

A. The prime Consultant shall submit:

1. one electronic copy (PDF) or
2. one (1) bound copy and one electronic copy (PDF) of the Proposal.

Consultants are discouraged from submitting lengthy Proposals. The District requests that Proposals be concise and clearly written containing only essential information. The Proposal shall consist of the following parts:

B. Letter of Interest

The Letter of Interest shall contain the following information:

1. RFP Title: EUCLID LIFT STATION MITIGATION SITE ANNUAL REPORTING
2. Consultant's name, mailing address, contact person, telephone and fax numbers;
3. UBI and federal tax ID numbers; and
4. Stipulation that Consultant accepts all terms of the RFP, especially the terms and conditions of the attached sample personal services agreement (Appendix B).

C. Proposal

The proposal shall include Consultant's:

1. Experience and Technical Competence
    a. Statement of how Key Personnel's experience and technical competence match with the anticipated scope of work.
    b. Key Personnel resumes, project experience, and certifications.
    c. Approach to ensure cost efficient execution and quality control.
2. Record of Past Performance & References
    a. References and project examples that attest to quality of work, ability to meet schedules and budgets, cooperation, and responsiveness.
    b. Availability and commitment of Key Personnel for ensuring the timely completion of the Project.
    c. Current and projected workload of Key Personnel over the anticipated agreement duration.
3. Cost Estimate
    a. Complete, not-to-exceed total cost proposal to complete the work as described herein and signed by an authorized representative of the Consultant.
    b. Estimate shall include a breakdown of costs as described in Section III.E above.

VII. EVALUATION CRITERIA AND PROPOSAL INFORMATION

A. Experience and Technical Competence - 40 Points

The District will evaluate the experience and technical competence of the Consultant's Key Personnel to complete the project. Emphasis will be placed on recent experience and expertise in performing the required services on projects with a scope of work similar in size and complexity to this Project.

B. Work Plan – 20 points

The panel will evaluate the proposed Work Plan to determine the Consultant's understanding of the scope of work, allocation of skilled personnel to specified tasks, appropriate utilization of sub consultants, and overall project approach.

1. The Work Plan is an opportunity for the Consultant to demonstrate its understanding of scope and propose ideas for the Project.
2. Be certain to identify any proposed changes to the scope by adding or subtracting tasks.

C. Record of Past Performance & References - 30 Points

1. The District will evaluate the project team's record of performance and references on previous and/or ongoing projects with consideration given to quality of work, ability to meet schedules and budgets, cooperation, responsiveness, performance on other District projects and other managerial considerations.
2. The District will evaluate the project examples provided with respect to Key Personnel's experience with similar projects and the amount of involvement they had with the project examples. The project examples provided should demonstrate Key Personnel's experience in providing services similar in scope to this Project.

D. Cost – 10 points

The lowest responsible, responsive proposal will receive the maximum point total (10 points). The higher cost proposals will receive a score calculated as a percentage of the maximum points relative to the difference between that cost proposal and the low cost proposal. For example, if the low cost proposal is $8 and the subject cost proposal is $10, that proposal would receive 16 points (20 points x $8/$10)

APPENDIX A

SCOPE OF WORK

ATTACHMENT A

SCOPE OF WORK

The Scope of work for this project includes all site work, monitoring, research and documentation required to complete the annual monitoring and reporting requirements (Years 3, 4 and 5) required by the following permits and approvals obtained for the Euclid Sewer Pump Station Improvements project, which are included as appendices to this document:

Appendix A – Mitigation Plan

- Approved Mitigation Plan, detailed in the Existing Conditions Report and Mitigation Plan for the Lake Whatcom Water and Sewer District's Euclid Sewer Pump Station Improvements Project.

Appendix B – Permitting Documents

- Whatcom County Hearing Examiner Decision February 4, 2020.
- Shoreline Substantial Development (SHR2019-00012).
- Shoreline Variance (SHV2019-00002).

Annual report that has been completed to date is also included as an appendix to this document:

Appendix C – Reporting Documents

- Year 0 As-built Report
- Year 1 Annual Mitigation Monitoring Report
- Year 2 Annual Mitigation Monitoring Report

The selected Consultant will be responsible for determining the scope of services required to comply with the Years 3, 4 and 5 monitoring and reporting requirements based on the information provided herein.

APPENDIX B

PERSONAL SERVICES AGREEMENT

LAKE WHATCOM WATER AND SEWER DISTRICT
PERSONAL SERVICES AGREEMENT

THIS AGREEMENT is made on _____, 2026, between LAKE WHATCOM WATER AND SEWER DISTRICT ("District"), a Washington municipal corporation and _____ ("Consultant").

In consideration of the mutual benefit derived by the parties and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree and covenant as follows:

1. PROJECT

Consultant shall perform all services and furnish all labor, tools, materials, and equipment for the District's project known as **Euclid Lift Station Mitigation Site Annual Reporting (District Project #C1802)** ("Project") in accordance with and as more fully described in **Attachment A—Scope of Work**. No additional services shall be performed or deemed authorized without the written prior authorization from the District.

2. PROJECT COST

The District shall pay Consultant for actual services rendered per **Attachment B—Rates and Charges** not to exceed an amount of _____ ($_,_ _.__) ("Project Cost"). The Rates and Charges include all costs associated with the Project, including, but not limited to labor, materials, overhead, administrative, and permit and regulatory costs, unless otherwise agreed to by the parties in writing. Prior written approval from the District is required for any services not included in the Scope of Work (Attachment A). Consultant shall have no right or claim for payment for services provided which are not included in the Scope of Work (Attachment A) even if said services were performed in good faith. Any services performed in violation of this paragraph shall be at the sole cost and expense of Consultant.

3. AGREEMENT TERM/PERIOD OF PERFORMANCE

Consultant shall commence work under this Agreement upon receipt of notice to proceed from the District. The Scope of Work must be completed no later than **December 31, 2029**, unless extended or terminated earlier by the District pursuant to the terms and conditions of this Agreement.

4. PAYMENT TERMS

The Project Cost shall be payable in the following manner: On or before the 26th day of each month, Consultant shall submit a detailed monthly invoice for all services provided describing in reasonable and understandable detail the services invoiced, the progress of the Scope of Work, and the requested payment amount. The District shall issue a warrant for payment of approved services contained in the invoice within thirty (30) days after approval.

5. CHANGE IN THE SCOPE OF WORK

Change in the Scope of Work, Project Cost, or Term shall require execution of a written amendment signed by the Consultant and District. The District may at any time order additions, deletions, revisions, or other written changes in the Scope of Work. The Consultant will prepare and submit a

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proposal to the District for consideration that details changes to the Scope of Work, Project Cost or Term, at the request of the District.

6. STANDARD OF CARE

The Consultant shall be responsible for the professional quality, technical adequacy and accuracy, timely completion and coordination of all tests, reports and other services prepared or performed pursuant to this Agreement. The Consultant shall perform its work to conform to generally accepted professional standards applicable to the types of services and work provided hereunder. The Consultant shall be responsible for the professional standards, performance and actions of all persons and firms performing work pursuant to this Agreement. The Consultant shall, without additional compensation, correct or revise any errors, omissions or specific breaches of a contractual obligation in such tests, reports and other services. The District's approval of plans, drawings and specifications shall not relieve Consultant of responsibility for the adequacy or accuracy thereof. Consultant shall remain liable for damages and costs incurred by the District arising from Consultant's errors, omissions or negligent performance of services furnished under this Agreement.

7. INDEMNIFICATION

Consultant and subcontractors of Consultant agree to defend, indemnify, and hold harmless the District, its commissioners, officers, managers, employees, engineers, agents, and volunteers from and against any and all demands, claims, losses, injuries, damages, liabilities, suits, judgment, reasonable attorneys' fees and costs, and other expenses of any kind on account of, relating to, or arising out of Consultant's performance of the Scope of Work under this Agreement, except to the extent such injuries or damages are caused by the negligence of the District. For the purposes of this indemnification, Consultant specifically and expressly waives any immunity granted under the Washington Industrial Insurance Act, Title 51 RCW. This waiver has been mutually negotiated and agreed to by the parties. If a court of competent jurisdiction determines that this agreement is subject to RCW 4.24.115, Consultant's obligation to defend, indemnify, and hold harmless the District, its officers, employees, agents and volunteers shall be limited to the extent of the District's negligence. Consultant shall include this indemnification obligation for the benefit of the District as a subcontractor requirement in any subcontractor agreement which includes performance of services under this Agreement; provided that, Consultant shall remain wholly responsible to the District for performance of the indemnification obligation set forth herein. The provisions of this paragraph shall survive the expiration or termination of this Agreement.

8. INSURANCE

Consultant shall obtain, and keep in force during the term of this Contract, insurance policies as follows:

a. **Commercial General Liability**. Limits no less than $1,000,000.00 combined single limit per occurrence and $2,000,000.00 aggregate for personal injury, bodily injury and property damage. Coverage shall be as broad as Insurance Services Office form number (CG 00 01) covering Commercial General Liability.

b. **Automobile Liability Insurance**. Limits no less than $1,000,000.00 combined single limit per accident for bodily injury and property damage. Coverage shall be as broad as Insurance Services Office form number (CA 00 01) covering Business Auto Coverage, symbol 1 "any auto"; or the combination of symbols 2, 8, and 9.

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c. **Workers' Compensation**. Coverage shall be at least as broad as Workers' Compensation coverage, as required by the Industrial Insurance Act of the State of Washington, as well as any similar coverage required for this work by applicable Federal Law.

d. **Professional Liability.** Professional Liability coverage may be required at the option of the District, in an amount of not less than $1,000,000 per claim and in the aggregate. Insurance shall have a retroactive date before the commencement of the Term and coverage shall remain in effect for the Term of this Agreement plus three years.

e. The insurance policies shall specifically name the District, its elected or appointed officials, officers, employees, and volunteers as insureds with regard to damages and defense of claims arising from (1) activities performed by or on behalf of the Consultant; or (2) products and completed operations of the Consultant; or (3) premises owned, leased, or used by the Consultant.

f. The insurance policies (1) shall state that coverage shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability; (2) shall be primary insurance with regard to the District; and (3) shall state that the District will be given at least 45 days' prior written notice of any cancellation, suspension or material change in coverage.

g. Before commencing work and services, Consultant shall provide to the District a Certificate of Insurance evidencing the required insurance accompanied by endorsements as are necessary to comply with the requirements of this section. The District reserves the right to request and receive a certified copy of all required insurance policies.

h. Any payment of deductible or self-insured retention shall be the sole responsibility of Consultant.

9. COMPLIANCE WITH CODES AND REGULATIONS

Consultant is expected to comply with all applicable statutes in performing the Scope of Work, including, but not limited to all state and local laws, regulations, codes and standards that are applicable at the time Consultant performs the services.

10. PERMITS, TAXES, TEMPORARY FUNCTIONS

Consultant shall secure and pay for all permits, fees and licenses necessary for the performance of this Agreement. Consultant shall pay any and all federal, state and municipal taxes, including sales taxes, if any, for which Consultant may be liable in carrying out this Agreement.

11. TERMINATION

This Agreement may be terminated by the District for cause when the District deems continuation to be detrimental to its interests or for failure of the Consultant to adequately perform the services specified in the Agreement. The District may terminate this Agreement for cause by sending a written notice to Consultant that specifies a termination date at least seven (7) days after the date of notice. This Agreement may also be terminated by the District without cause by sending written notice to Consultant that specifies a termination date at least thirty (30) days after the date of notice. Unless terminated for Consultant's material breach, Contractor shall be paid or reimbursed for all hours worked up to the termination date, less all payments previously made; provided that the work

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performed after the date of notice must be only that which is reasonably necessary to terminate the work in a professional manner, unless otherwise agreed.

12. GENERAL PROVISIONS

a. **Notices**. Any notice or demand desired or required to be given under this Agreement shall be in writing and deemed given when personally delivered, sent by facsimile machine, or deposited in the United States Mail (or with an express courier), postage prepaid, sent certified or registered mail, and addressed to the parties as set forth below or to such other address as either party shall have previously designated by such a notice:

District:	Consultant:
Attn: General Manager Lake Whatcom Water and Sewer District 1220 Lakeway Drive Bellingham, WA 98229	Attn: _____ _____ _____ _____
Phone: (360) 734-9224	Phone: _____

b. **Records and other Tangibles.** Until the expiration of six years after the term of this Agreement, Consultant agrees to maintain accurate records of providing the services specified by the Agreement and to deliver such records to the District as requested by the District.

c. **Ownership of Work**. The District has ownership rights to the plans, specifications, and other products prepared for the Project by the Consultant. Consultant shall not be responsible for changes made in the plans, specifications or other products by anyone other than the Consultant. Consultant shall have free right to retain, copy and use any tangible materials or information produced but only for its own internal purposes. Use of documents or other materials prepared under this Agreement for promotional purposes shall require the District's prior consent.

d. **Disclosure.** All information developed by Consultant and all information made available to the Consultant by the District, and all analyses or opinions reached by the Consultant shall be confidential and shall not be disclosed by Consultant without the written consent of the District, unless said information is made publicly available by the District.

e. **Non Discrimination**. During the term of this Agreement, the Consultant agrees that no person shall, on the grounds of race, creed, color, national origin, sex, marital status, age, religion, or on the presence of any sensory, mental or physical disability, be discriminated against by the Consultant.

f. **Relationship of the Parties**. Nothing contained herein or any document executed in connection herewith, shall be construed to create an employer-employee relationship or joint venture relationship between the District and Consultant, its employees or subcontractors. The Consultant is an independent contractor. The Consultant is responsible for its acts or omissions and acts or omissions of its agents, employees, servants, subcontractors, or otherwise during the performance of this Agreement.

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g. **Entire Agreement**. This Agreement and its attachments contain the entire understanding between the District and Consultant relating to the Project which is the subject of this Agreement. Subsequent modification or amendment of this Agreement shall be in writing and signed by the parties to this Agreement.

h. **Waiver**. Waiver of any breach or default hereunder shall not constitute a continuing waiver or a waiver of any subsequent breach either of the same or of another provision of this Agreement.

i. **Assignment**. The Consultant shall not assign, or transfer any interest in this Agreement in whole or in part to any individual, firm or corporation without the prior written consent of the District. Subject to the provisions of the preceding sentence, this Agreement shall be binding upon and inure to the benefit of the respective successors and assigns of the Consultant. This Agreement is made only for the benefit of the District and the Consultant and successors in interest and no third party or person shall have any rights hereunder whether by agency or as a third party beneficiary.

j. **Severability**. If any term, covenant or condition of this Agreement is held by a court of competent jurisdiction to be invalid, the remainder of this Agreement shall remain in effect.

k. **Dispute Resolution**. If any dispute, controversy, or claim (collectively "dispute") arises out of this Agreement, the parties agree to first try to settle the dispute in non-binding mediation with the assistance of a recognized professional mediation service. The parties shall each designate a representative with full settlement authority who will participate in the mediation. The parties shall bear all expenses associated with the mediation equally, except for attorneys' fees. Any dispute subject to, but not resolved by, mediation shall be subject to a private arbitration which, unless the parties mutually agree otherwise, shall be held in accordance with RCW 7.04A.

l. **Jurisdiction/Law**. This Agreement shall be governed by and construed in accordance with the laws of the State of Washington. Any suit to enforce or relating to this Agreement, including the enforcement of any arbitration award, shall be brought in Whatcom County Superior Court, Whatcom County, Washington.

m. **Attorneys' Fees**. In the event that any party commences litigation against the other party relating to the performance, enforcement or breach of this Agreement, the prevailing party in such action shall be entitled to all costs, including attorneys' fees, expert witness fees and costs and any such fees or costs incurred on appeal.

n. **Counterparts**. This Agreement may be executed in counterparts and each shall be deemed an original, but all of which together shall constitute a single instrument.

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In Witness Whereof, the parties enter into this Agreement, mutually agree on above terms, are authorized to execute this Agreement and the parties have executed this Agreement on the day and year indicated.

_____
(Company)

_____
(Signature)

_____
(Printed Name and Title)

Dated: _____

Lake Whatcom Water and Sewer District
("DISTRICT")

_____
Justin Clary, General Manager

Dated: _____

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ATTACHMENT A – SCOPE OF WORK

ATTACHMENT B – RATES AND CHARGES

APPENDIX C

PERMITS AND APPROVALS

WHATCOM COUNTY HEARING EXAMINER

RE:	SHORELINE SUBSTANTIAL DEVELOPMENT SHORELINE VARIANCE Application for ***Lake Whatcom Water & Sewer District*** *"Euclid Sewer Pump Station"*	)))))))	SHR2019-0012 SHV2019-0002 FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION

SUMMARY OF APPLICATION AND DECISION

Application: The Lake Whatcom Water & Sewer District seeks a Shoreline Substantial Development Permit to replace the existing electrical components for powering and controlling the pumps with new components and construction of a new shelter to protect workers and electrical items. The project will also add a permanent stationary generator to the site, adjacent to Euclid Avenue.

Decision: The requested permits are granted, subject to conditions.

INTRODUCTION

The following Findings of Fact and Conclusions of Law are based upon consideration of the exhibits admitted herein and evidence presented at the public hearing.

FINDINGS OF FACT

I.

PRELIMINARY INFORMATION

Applicant:	Lake Whatcom Water & Sewer District
Property Location:	In the Right-of-Way adjacent to and south of 1602 Euclid Avenue, Bellingham, Washington 98229
Legal Description:	Within Section 27, Township 38 North, Range 03 East, W.M.

Parcel Number:	380327 260120	
Adjacent Water Body:	Lake Whatcom	
Shoreline Designation:	Shoreline Residential	
Statewide Significance:	Yes	
Authorizing Ordinances:	SMP 23.50	Applicability
	SMP 23.70.010	Administration
	SMP 23.70.030	Hearing Examiner

Applicable Shoreline Program Provisions

SMP 23.20	Goals and Objectives
SMP 23.30.020	Official Shoreline Map
SMP 23.30	Shoreline Designations
SMP 23.40	Shoreline of Statewide Significance
SMP 23.60.010	Substantial Development Permit Criteria
SMP 23.60.030	Variance Permit Criteria
SMP 23.60.130	Public Hearings
SMP 23.90	General Policies & Regulations
SMP 23.100	Shoreline Use Policies & Regulations

SEPA Review: Categorically Exempt pursuant to WAC 197-11-800(23) - Utilities

Legal Notices: Published – Notice of Public Hearing, January 16, 2020
Posted – Notice of Public Hearing, January 14, 2020
Mailed – Notice of Public Hearing, January 7, 2020

Hearing Date: January 29, 2020

Parties of Record
Justin Clary, General Manager
Lake Whatcom Water & Sewer District
1220 Lakeway Drive
Bellingham, WA 98229

Dan Burwell, P.E.
RH2 Engineering, Inc.
4164 Meridian Street, Suite 302
Bellingham, WA 98226

Andrew Hicks, Shoreline Administrator
Planning and Development Services
Whatcom County

Exhibits:

1. Master Land Use Application with attachments
   - 1-1 Shoreline Substantial Supplemental Application
   - 1-2 PDS Guidelines for Finding Property Owners for Hearing Notices
   - 1-3 Fee Responsibility
   - 1-4 Agent Authorization
   - 1-5 Project Narrative
   - 1-6 Determination of Completeness, dated August 12, 2019
   - 1-7 PDS Comment Letter, with Project Description, August 12, 2019
   - 1-8 Legal Notice of Application, October 8, 2019
   - 1-9 Certificate of Mailing, Notice of Application, October 8, 2019
2. Staff Report, January 17, 2020
3. Agency Comments:
   - Environmental Health Memo, October 1, 2019
   - Engineering Technician Memo, September 13, 2019
4. Wetland Determination Data Form: Euclid Pump Station for Lake Whatcom Water & Sewer District
5. RH2 Engineering, Inc. Report dated July 1, 2019 to Thomas Brissenden, Planner re: Existing Conditions Report and Mitigation Plan for the Lake Whatcom Water and Sewer District's Euclid Sewer Pump Station Improvements Project
6. RH2 Engineering, Inc. Stormwater Pollution Prevention Plan: Euclid Sewer Pump Station Improvements, prepared Summer 2019, dated June 21, 2019
7. Google Earth LWWSD Euclid Pump Station Environmental Site Investigation Field Map, January 9, 2019
8. Proposed Site Plan, RH2 Engineering, Inc., dated July 2019
9. RH2 Engineering, Inc. Existing Site, TESC & Demolition Plan: Euclid Sewer Pump Station: Whatcom County Critical Areas Review Complete, dated Dec. 06, 2019
10. Certificate of Mailing Notice of Public Hearing, dated January 7, 2020
11. Bellingham Herald Legal Notice Public Hearing, January 16, 2020
12. Certificate of Posting: Notice of Public Hearing, January 14, 2020

II.

Lake Whatcom Water & Sewer District proposes to replace existing electrical components for powering and controlling the pumps at the Euclid Lift Station with new components and a shelter to protect workers and electrical items. The project will also

add a permanent stationary generator [with sound attenuated housing] to the site adjacent to Euclid Avenue.

III.

The Whatcom County Shoreline Administrator has recommended approval of the requested Shoreline Substantial Development Permit and Shoreline Variance for the proposed replacement of the existing electrical components for powering and controlling the pumps with new components and construction of a new shelter to protect workers and electrical items and also add a permanent stationary generator to the site in a Staff Report entitled "Findings, Conclusions, and Recommendations," Exhibit No. 2, dated January 17, 2020, a copy of which is attached hereto. The Applicant has indicated that the Staff Report is factually correct. The Applicant stated no objection to the Conditions of Approval recommended by Staff. There was no public comment on this matter at the hearing. The Findings of Fact contained in the Staff Report are adopted and incorporated herein by this reference.

IV.

Any Conclusion of Law which is deemed a Finding of Fact is hereby adopted as such. Based on the foregoing Findings of Fact, now are entered the following:

CONCLUSIONS OF LAW

I.

The Conclusions of Law are set forth in the Staff Report, Exhibit No. 2 in the Hearing Examiner file, dated January 17, 2020, are adopted and incorporated herein by this reference as Conclusions of Law. Subject to the Conditions of Approval recommended by Staff, the Hearing Examiner also concludes that the proposal is consistent with the Goals, Policies, and Purpose of the Shoreline Management Act, RCW 90.58, and with the Goals and Policies of the Whatcom County Shoreline Management Program.

II.

Any Finding of Fact deemed to be a Conclusion of Law is hereby adopted as such. Based on the foregoing Findings of Fact and Conclusions of Law, now is entered the following:

DECISION

A Shoreline Substantial Development Permit is hereby granted to Lake Whatcom Water & Sewer District to replace the existing electrical components for powering and controlling the pumps with new components and construction of a new shelter to protect workers and electrical items and to add a permanent stationary generator located on Assessor's Parcel Number 380327 260120 located in ROW adjacent to and south of 1602 Euclid Avenue, Bellingham, Washington. The Permit is granted subject to the following Conditions of Approval:

1. *The proposed shoreline developments shall be consistent with the scope and site plans stamped "shoreline approved" on January 17, 2020. Any changes to the proposed development may require additional review and approval by the Whatcom County Shoreline Administrator and/or Whatcom County Hearing Examiner.*

2. *The project must be constructed in accordance with the submitted plans/drawings and supporting documentation and comply with all agency permit conditions.*

3. *Issuance of this shoreline permit does not release the applicant from any other Local, State, regional or Federal statutes or regulations applicable to the proposed development.*

4. *Washington State Department of Ecology Water Quality Standards shall be maintained.*

5. *The project shall not result in significant degradation of ground or surface waters and shall be completed during periods of dry weather.*

6. *The project shall be designed to minimize or eliminate infiltration of flood waters into the system and discharge from the system into flood waters.*

7. *Structures must be anchored to resist flotation, collapse, and lateral movement.*

8. *All electrical and mechanical equipment, and fuel tanks, must be anchored and designed to be water resistant or elevated above the BFE so as to prevent water from entering or accumulating within the components.*

9. *A Revocable Encroachment Permit is required for work within the County ROW.*

10. *If any road closures are anticipated, approved traffic plans, coupled with proper notification procedures are necessary.*

11. *An ESC inspection shall be performed during construction. Contact watershed staff at (360) 778-5948 or (360) 778-5946 to schedule the ESC inspection. Please call 24 hours in advance of your desired inspection date.*

12. *Activities which expose more than 500 sq. ft. of soil are prohibited from October 1 through May 31.*

13. *Stormwater from the proposed development shall be controlled in a manner which does not degrade any critical areas or surface waters or direct water onto neighboring properties.*

14. *Impact posts shall be placed around any structure/equipment placed within 10 ft. of the road.*

15. *NFPA placards and labeling shall be required to meet the International Fire Code 2015 edition and current applicable adopted NFPA standards.*

16. *All construction debris shall be removed from the shoreline environment upon completion of the project and disposed of in accordance to all applicable regulations.*

17. *All construction and work practices shall follow programmatic instructions and best management practices in the REDLINED stamped approved site plans (stamp dated 1/17/2020) and approved REDLINED RH2 reports*

18. *A mitigation as-built report authored by a qualified biologist is required for submittal within 180 days after the project has been constructed. For WCPDS submittal, please refer to mitigation case number MIT2020-00003. The applicant shall include documentation of how the plantings were installed in all areas, any changes that occurred during construction, and 100% completion drawings of the project.*

19. *One year after the approval of the as-built, a yearly monitoring report is due to Whatcom County under case number MIT2020-00003. A report shall be submitted for a minimum of 5 successful monitoring years, and authored by a qualified biologist.*

20. *If any part of the restoration is not working, and performance standards are not being met, a contingency plan shall be authored by the applicant which tailors a different approach to offsetting critical areas losses from the construction of the project.*

21. *Any mulch used on site shall be to County standards for low phosphorous, and have no chemically treated components.*

22. *No clearing of vegetation is permitted outside of the designated work area shown on the approved site plans.*

23. *Applicant shall conform to all practices described within the approved revised Mitigation Plan, titled, "Habitat Conservation Areas Assessment Report HCA Buffer Mitigation Plan, cover dated REVISED 4/29/2019, and approved by CA staff on 6/14/2019.*

24. *Work areas shall be clearly identified and marked PRIOR to any land disturbance or vegetation clearing and according to submitted SWPPP.*

25. *If the applicant does not fully conform to terms and conditions of this permit, then violations to critical areas are enforceable under Whatcom County Code.*

26. *Prior to construction, an "Agreement to Maintain Mitigation" shall be completed by the applicant (LWWSD) and submitted under case number MIT2020-00003. This form can be found online at: http://whatcomcounty.us/DocumentCenter/View/2170/Agreement-to-Maintain-Mitigation-Site-PDF*

27. *Payment of the following fees are required prior to construction:*
    a. *SHR2019-000012 – Payment in the total amount of **$896.10** for Wetland Delineation review, Mitigation Plan review, Mitigation As-built inspection, plus 3% technology fee*
    b. *MIT2020-00003- Payment in the total amount of **$695.20** for 3 – 5 years monitoring plus 3% technology fee.*

28. *Should archaeological resources (e.g. shell midden, faunal remains, stone tools) be observed during project activities, all work in the immediate vicinity should stop, and the area should be secured. The Washington State Department of Archaeology and Historic Preservation (Gretchen Kaehler, Local Government Archaeologist 360-586-3088) and the Lummi Nation Tribal Historic Preservation Office (Lena Tso, THPO 360-312-2257; Tamela Smart, Deputy THPO 360-312-2253) should be contacted immediately in order to help assess the situation and to determine how to preserve the resource(s). Compliance with all applicable laws pertaining to archaeological resources is required.*

29. *If ground disturbing activities encounter human skeletal remains during the course of construction, then all activity will cease that may cause further disturbance to those remains. The area of the find will be secured and protected from further disturbance. The finding of human skeletal remains will be reported to the county medical examiner/coroner and local law enforcement in the most expeditious manner possible. The remains will not be touched, moved, or further disturbed. The county medical examiner/coroner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or non-forensic. If the county medical examiner/coroner determines the remains are non-forensic, then they will report that finding to the Department of Archaeology and Historic Preservation (DAHP) who will then take jurisdiction over the remains. The DAHP will notify any appropriate cemeteries and all affected tribes of the find. The State Physical Anthropologist will make a determination of whether the remains are Indian or Non-Indian and report that finding to any appropriate cemeteries and the affected tribes. The DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.*

30. *Construction shall be commenced within two (2) years of the effective date of this shoreline permit, as defined by 23.60.190(A)(3), and shall be completed in five (5) years. The Shoreline Administrator may grant a single extension for a period of not more than one (1) year based on a showing of good cause. Such request must be filed with the Shoreline Administrator before the expiration date described above.*

NOTICE OF POTENTIAL REVOCATION AND PENALTIES UNDER SHORELINE MANAGEMENT PROGRAM

Pursuant to WCC 23.60.180, this Approval is subject to all of the above-stated conditions. Failure to comply with them may be cause for its revocation. Complaints regarding a violation of the conditions of this permit should be filed with Whatcom County Planning and Development Services. The Hearing Examiner may not take any action to revoke this approval without further public hearing.

In addition to incurring civil liability under Shoreline Management Program Section 23.80.20 and RCW 90.58.210, pursuant to RCW 90.58.220 any person found to have willfully engaged in activities on shorelines of the state in violation of the provisions of the act or the Shoreline Management Program or other regulations adopted pursuant thereto shall be guilty of a gross misdemeanor and shall be punished by a fine of not less than $25 or more than $1,000 or by imprisonment in the county jail for not more than 90 days, or by both such fine and imprisonment; provided that the fine for the third and all subsequent violations in any five year period shall not be less than $500 nor more than $10,000. Any person who willfully violates any court order, regulatory order or injunction issued pursuant to the Shoreline Management Program shall be subject to

a fine of not more than $5,000, imprisonment in the county jail for not more than 90 days, or both.

NOTICE OF APPEAL PROCEDURES FROM FINAL DECISIONS OF THE WHATCOM COUNTY HEARING EXAMINER ON SHORELINE DECISIONS

This action of the Hearing Examiner is final. The following review procedure is available from this decision and may be taken by the Applicant, any opponent of record, or any County department.

Appeals to the shoreline hearings board of a decision on a shoreline substantial development permit, shoreline variance or shoreline conditional use permit may be filed by the applicant/proponent or any aggrieved party pursuant to RCW 90.58.180 within 21 days of filing the Final Decision by Whatcom County with the Department of Ecology.

Whatcom County Council shall consider an appeal of a decision on a shoreline substantial development permit, shoreline variance or shoreline conditional use only when the applicant/proponent waives his/her right to a single appeal to the shoreline hearings board. Such waivers shall be filed with the County in writing concurrent with a notice of appeal within 10 days of a final action. When an applicant/proponent has waived his/her right to a single appeal, such appeals shall be processed in accordance with the appeal procedures of WCC 23.60.150.H and shall be an open record hearing before the Hearing Examiner.

More detailed information about appeal procedures is contained in the Shoreline Management Program at WCC 23.60.150. Whatcom County Code can be viewed online at http://www.codepublishing.com/WA/WhatcomCounty.

DATED this day 4th of February 2020.

Michael Bobbink

Michael Bobbink, Hearing Examiner

WHATCOM COUNTY
Planning & Development Services
5280 Northwest Drive
Bellingham, WA 98226-9097
360-778-5900, TTY 800-833-6384
360-778-5901 Fax

Mark Personius, AICP
Director

EXHIBIT

#2

January 17, 2020

WHATCOM COUNTY PLANNING AND DEVELOPMENT SERVICES

STAFF REPORT

The application of **Lake Whatcom Water and Sewer District** for Shoreline Substantial Development and Shoreline Variance	SHR2019-00012 SHV2019-00002 FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

I. SUMMARY OF APPLICATION AND RECOMMENDATIONS

Proposal: Replacement of existing electrical components for powering and controlling the pumps with new components and construction of a new shelter to protect workers and electrical items. In addition to replacement of existing electrical, the project will add a permanent stationary generator to the site, adjacent to Euclid Ave.

Recommendation: Staff recommends approval of the requested developments, subject to the conditions of approval.

II. PRELIMINARY INFORMATION

Applicant: Lake Whatcom Water & Sewer District
c/o Dan Burwell, RH2 Engineering, Inc.
4164 Meridian St., Ste. 302
Bellingham, WA 98226

Property Location: In Right-of-Way adjacent to and south of 1602 Euclid Ave., Bellingham 98229

Parcel Number: N/A

Legal Description: Within Section 27, Township 38 North, Range 03 East, W.M.

Adjacent Water Body: Lake Whatcom

Shoreline Designation: Shoreline Residential

Statewide Significance: Yes

Application Submitted: July 29, 2019

Notice of Completeness: August 12, 2019

Notice of Application: October 8, 2019

End of Comment Period: November 7, 2019

Authorizing Ordinances:

WCC 23.50	Applicability
WCC 23.70.010	Administration
WCC 23.70.030	Hearing Examiner

Applicable Shoreline Program Provisions:

WCC 23.20	Goals and Objectives
WCC 23.30.020	Official Shoreline Map
WCC 23.30	Shoreline Designations
WCC 23.40	Shorelines of Statewide Significance
WCC 23.60.010	Substantial Development Permit
WCC 23.60.030	Variance Permit Criteria
WCC 23.60.130	Public Hearings
WCC 23.90	General Policies & Regulations
WCC 23.100	Shoreline Use Policies & Regulations

SEPA Review: Categorically Exempt pursuant to WAC 197-11-800(23) - Utilities

III. PROJECT DESCRIPTION

Proposal: The Lake Whatcom Water and Sewer District (LWWSD) proposes to replace existing electrical components for powering and controlling the pumps at the Euclid Lift Station with new components and a shelter to protect workers and electrical items. In conjunction with replacing the existing electrical, the project will add a permanent stationary generator (with sound attenuated housing) to the site adjacent to Euclid Ave.

The proposed building footprint for the shelter is 76 SF. The proposed footprint of the generator is approximately 135 SF. The total area of proposed new impacts is 590 SF. The project includes approximately 31 CY of excavation and 27 CY of fill. All excavated materials are to be disposed of at a waste site facility provided by the contractor and approved by Lake Whatcom Water and Sewer District.

This application follows a pre-application which the applicant submitted on October 4, 2018 under permit number PRE2018-00052.

Project Area Description: The existing sewer lift station is located within Whatcom County right-of-way, which is bordered by Euclid Park on the southern side and a

single family residence to the north. The existing lift station consists of a wet well with submersible pumps, a check valve and bypass pumping vault as well as associated electrical components. The site is accessed via an access road off the east side of Euclid Ave. The pump station was rehabilitated in summer of 1998.

The project area is located on a slope that initially drops steeply from Euclid Ave. and gradually flattens out approaching the lake to the northwest. Existing conditions include a gravel driveway with an approximate 20% slope leading down to LWWSD's sewer lift station and valve vault at the toe of the slope. A wetland area (named Wetland 1 in the RH2 reports) is located adjacent to the project site to the east. Euclid Creek, a fish bearing stream, flows through Euclid Park into Lake Whatcom and is located approximately 100 feet from the project site.

Several conifer trees line the boundary of the adjacent parcel and will be preserved according to the applicant.

IV. PUBLIC NOTICE AND COMMENT

Requirements for public notice for shoreline permits are set forth in WCC 23.60.080.

Notice of Application: Formal legal notice for this project was published on October 8, 2019 in the Bellingham Herald and mailed to all property owners within 300-feet of the project site. The formal public comment period ran from October 8, 2019 through November 7, 2019.

Public Input: No public comments were received during the public comment period.

V. ANALYSIS AND CONSISTENCY WITH REGULATIONS

Shoreline Jurisdiction: According to the Official Shoreline Map as outlined in WCC 23.30.020.A, the subject site is located within the Shoreline Residential shoreline designation. Pursuant to WCC 23.30.020.B, the map does not necessarily identify or depict the lateral extent of shoreline jurisdiction nor does it identify associated wetlands. The lateral extent of the shoreline jurisdiction shall be determined on a case-by-case basis based on the location of the OHWM, floodway and presence of associated wetlands. As proposed, a portion of the project is located within Shoreline Jurisdiction.

Shorelines of Statewide Significance: Lake Whatcom is considered a shoreline of statewide significance, and therefore subject to the regulations of WCC 23.40. In accordance with RCW 90.58.020, the following management and administrative policies apply to all shorelines of statewide significance in unincorporated Whatcom County, as defined in RCW 90.58.030(2)(e) and identified in WCC 23.40.020. Consistent with the policy contained in RCW 90.58.020, preference shall be given to the uses that are consistent with the statewide interest in such shorelines. These are uses that:

A. Recognize and protect the statewide interest over local interest.
B. Preserve the natural character of the shoreline.

C. Result in long-term over short-term benefit.
D. Protect the resources and ecology of the shoreline.
E. Increase public access to publicly owned areas of the shoreline.
F. Increase recreational opportunities for the public in the shoreline.
G. Provide for any other element as defined in RCW 90.58.100 deemed appropriate or necessary.

Staff has concluded that the proposed utility improvement project is consistent with the policies for shorelines of statewide significance. This project will not significantly alter the natural character of the shoreline and the proposed location is necessary due to substantial existing infrastructure. The utility improvement project is intended to provide long-term benefit to the community by preserving essential utility service to the immediate area in which it is located.

Shoreline Variance Permit Requirement: The existing sewer pump station meets SMP's definition of *Non-conforming Structure*. Pursuant to 23.50.070.E, Non-conforming structures that are expanded or enlarged must obtain a variance or be brought into conformance with this Program and the Act. For a Shoreline Variance to be approved, the proposal must satisfy the criteria of section 23.60.030.D of the Program.

The proposal requires approval of a Shoreline Variance permit because a portion of the project includes an expansion of a non-conforming structure within the Habitat Conservation Area (HCA) buffer associated with Lake Whatcom per WCC 23.50.070.E. Additionally, the entire property is encumbered by a buffers associated with adjacent wetlands and Euclid Creek.

Lake Whatcom is a shoreline of the state and thus subject to the provisions of the SMP. According to 23.90.130, shore setbacks within jurisdiction of the SMP are determined based on the buffering standards outlined within the Whatcom County Critical Areas Ordinance (CAO) incorporated by reference within the SMP pursuant to 23.10.060.A. Lake Whatcom is classified as a Habitat Conservation Area (HCA) pursuant to 16.16.700 and according to 16.16.740, has a prescribed buffer/setback of 100-feet as measured landward on a horizontal plane from the OHWM.

Pursuant to WCC 16.16.600, WCC 16.16.710(C)(1), and WCC 16.16.740(B)(3)(b), Euclid Creek and its associated wetland have a 100' protective HCA buffer. These buffers extend across the entire subject property and encumber the locations of the proposed electric component shelter and standby generator.

Pursuant to WCC 23.60.030.D, variances may be authorized, provided the applicant can demonstrate all of the following:

1. That the strict application of the bulk or dimensional criteria set forth in this program precludes or significantly interferes with reasonable permitted use of the property;

2. That the hardship described in subsection A of this section is specifically related to the property, and is the result of conditions such as irregular lot shape, size, or natural features and the application of this program, and

not, for example, from deed restrictions or the applicant's/proponent's own actions;

3. That the design of the project will be compatible with other permitted activities in the area and will not cause adverse effects on adjacent properties or the shoreline environment;

4. That the variance authorized does not constitute a grant of special privilege not enjoyed by the other properties in the area, and will be the minimum necessary to afford relief;

5. That the public interest will suffer no substantial detrimental effect;

6. That the public rights of navigation and use of the shorelines will not be materially interfered with by the granting of the variance; and

7. Mitigation is provided to offset unavoidable adverse impacts caused by the proposed development or use.

Staff concludes that the proposal, as conditioned, meets all of the criteria for variance approval listed above. The majority of the lift station components (including the junction box, valve vault, wet well, and electrical components) have existed in their current location for several decades. The only addition being proposed within the HCA buffer is a protective shelter intended to protect the electrical components. The proposed shelter will not substantially extend beyond the area that is already occupied by the lift station components. Therefore, the strict application of the buffer standards would significantly interfere with a reasonable use that has been in place since before the adoption of the current buffer standards.

The standby generator is proposed to be located as close to Euclid Ave. and as far away from the regulated wetland/stream as possible. There is no other location on the property were the generator could be located and result in less overall disturbance to the wetland/stream features.

The hardship is not due to actions or conditions created by the landowner, but to an increase in the buffer sizes after the establishment of the utility location. The proposed shelter is the minimum size (approx. 76 SF) to adequately cover the lift station components and is compatible with other outbuildings in the vicinity. The proposed generator has been sited to minimize impacts to the adjacent wetland/stream to the extent feasible.

Granting of this variance would not constitute a grant of special privilege not enjoyed by other properties in this area, as multiple similar variance requests in the vicinity have been granted since the adoption of the current Shoreline Management Plan. Additionally, the proposed shelter will not cause the public interest to suffer any substantial detrimental effect. The shelter and generator are to be located in the upland environment and will not interfere with the public rights of navigation or use of the shorelines.

Staff has assessed the project for unavoidable adverse impacts and discusses that assessment in the attached memorandum from Erin Page, dated January 17, 2020. Staff has concluded that, as conditioned, the project will result in zero net loss of ecological function.

Public Hearing Requirement: Pursuant to WCC 23.60.130, a public hearing shall be required when the project meets one of the eight criteria enumerated in that section. One criterion for requiring a public hearing is for any proposal that requires a variance. Therefore, a public hearing is required and has been scheduled for January 29, 2020.

Substantial Development Permit Requirements: The proposal requires approval of a shoreline substantial development permit pursuant to WCC 23.60.010.A, as it does not strictly meet one of the exemptions listed in WCC 23.60.022.

For shoreline substantial developments to be approved, the proposals must satisfy the criteria of WCC 23.60.010, as addressed below.

According to 23.60.010.B, in order to be approved, the decision maker must find that the proposal is consistent with the following criteria:

1. All regulations of the SMP appropriate to the shoreline designation and the type of use or development proposed shall be met, except those bulk and dimensional standards that have been modified by approval of a shoreline variance under SMP 23.60.030;

2. All policies of the SMP appropriate to the shoreline area designation and the type of use or development activity proposed shall be considered and substantial compliance demonstrated;

3. For projects located on shorelines of statewide significance, the policies of WCC 23.40 shall also be adhered to.

General and use-specific policies and regulations are found within Sections 23.90 and 23.100 respectively. Applicable policies and regulations associated with the proposed development are listed in italics and discussed below.

The policies and regulations that are applicable to the drainage improvement project are contained in the following sections of the SMP:

WCC 23.90.030 – Ecological protection and critical areas
WCC 23.90.040 – Water quality and quantity
WCC 23.90.050 – Views and aesthetics
WCC 23.90.060 – Vegetation Conservation
WCC 23.90.070 – Archaeological, historic and cultural resources
WCC 23.90.070 – Public access
WCC 23.90.090 – Site Planning
WCC 23.90.100 – Landfill and excavation
WCC 23.100.150 - Transportation

Staff has reviewed this proposal against all pertinent regulations and finds that, with the recommended conditions enumerated below in Section VIII of this report, the project is consistent with all SMP policies and regulations.

VI. CUMULATIVE IMPACT ANALYSIS

In the granting of all shoreline substantial development permits, shoreline conditional use permits, and shoreline variance permits, consideration shall be given to the cumulative environmental impact of additional requests for like actions in the area. For example, if shoreline permits were granted for other developments in the area where similar circumstances exist, the sum of the permitted actions should also remain consistent with the policy of RCW 90.58.020 and should not produce significant adverse effects to the shoreline ecological functions and processes or other users.

Pursuant to WCC 23.60.010.C, WCC 23.60.030.G and WCC 23.60.040.D the project was reviewed for consideration of potential cumulative impacts that would result if similar developments were permitted under similar circumstances. The proposal as conditioned appears to comply with the development standards, bulk and dimensional setbacks, vegetation conservation standards, and critical area requirements. As such, additional approvals for additional developments where similar circumstances exist are not likely to represent a cumulative environmental impact to the shoreline. It is the opinion of staff that this project as proposed and conditioned meets the ecological protection polices of the Whatcom County Shoreline Management Program resulting in no net loss of ecological functions and process and that the sum of similar permitted actions appears to comply with the policy of RCW 90.58.020.

VII. AGENCY COMMENTS

Erin Page, Critical Areas Planner – Planning & Development Services: Submitted a memorandum on January 17, 2020 signing off on project approval with conditions.

Sarah Cierebiej, Environmental Health Specialist – Health Department: Submitted a memorandum on June 11, 2018 signing off on project approval with no additional conditions.

Jim Deasy, Engineering Technician – Public Works: Submitted a memorandum dated September 13, 2019 signing off on project approval conditions.

VIII. RECOMMENDATION

Based on the above findings, Staff recommends approval of the Shoreline Substantial Development Permit and Shoreline Variance subject to the following conditions:

1. *The proposed shoreline developments shall be consistent with the scope and site plans stamped "shoreline approved" on January 17, 2020. Any changes to*

the proposed development may require additional review and approval by the Whatcom County Shoreline Administrator and/or Whatcom County Hearing Examiner.

2. *The project must be constructed in accordance with the submitted plans/drawings and supporting documentation and comply with all agency permit conditions.*

3. *Issuance of this shoreline permit does not release the applicant from any other Local, State, regional or Federal statutes or regulations applicable to the proposed development.*

4. *Washington State Department of Ecology Water Quality Standards shall be maintained.*

5. *The project shall not result in significant degradation of ground or surface waters and shall be completed during periods of dry weather.*

6. *The project shall be designed to minimize or eliminate infiltration of flood waters into the system and discharge from the system into flood waters.*

7. *Structures must be anchored to resist flotation, collapse, and lateral movement.*

8. *All electrical and mechanical equipment, and fuel tanks, must be anchored and designed to be water resistant or elevated above the BFE so as to prevent water from entering or accumulating within the components.*

9. *A Revocable Encroachment Permit is required for work within the County ROW.*

10. *If any road closures are anticipated, approved traffic plans, coupled with proper notification procedures are necessary.*

11. *An ESC inspection shall be performed during construction. Contact watershed staff at (360) 778-5948 or (360) 778-5946 to schedule the ESC inspection. Please call 24 hours in advance of your desired inspection date.*

12. *Activities which expose more than 500 sq. ft. of soil are prohibited from October 1 through May 31.*

13. *Stormwater from the proposed development shall be controlled in a manner which does not degrade any critical areas or surface waters or direct water onto neighboring properties.*

14. *Impact posts shall be placed around any structure/equipment placed within 10 ft. of the road.*

15. *NFPA placards and labeling shall be required to meet the International Fire Code 2015 edition and current applicable adopted NFPA standards.*

16. *All construction debris shall be removed from the shoreline environment upon completion of the project and disposed of in accordance to all applicable regulations.*

17. *All construction and work practices shall follow programmatic instructions and best management practices in the REDLINED stamped approved site plans (stamp dated 1/17/2020) and approved REDLINED RH2 reports*

18. *A mitigation as-built report authored by a qualified biologist is required for submittal within 180 days after the project has been constructed. For WCPDS submittal, please refer to mitigation case number MIT2020-00003. The applicant shall include documentation of how the plantings were installed in all areas, any changes that occurred during construction, and 100% completion drawings of the project.*

19. *One year after the approval of the as-built, a yearly monitoring report is due to Whatcom County under case number MIT2020-00003. A report shall be submitted for a minimum of 5 successful monitoring years, and authored by a qualified biologist.*

20. *If any part of the restoration is not working, and performance standards are not being met, a contingency plan shall be authored by the applicant which tailors a different approach to offsetting critical areas losses from the construction of the project.*

21. *Any mulch used on site shall be to County standards for low phosphorous, and have no chemically treated components.*

22. *No clearing of vegetation is permitted outside of the designated work area shown on the approved site plans.*

23. *Applicant shall conform to all practices described within the approved revised Mitigation Plan, titled, "Habitat Conservation Areas Assessment Report HCA Buffer Mitigation Plan, cover dated REVISED 4/29/2019, and approved by CA staff on 6/14/2019.*

24. *Work areas shall be clearly identified and marked PRIOR to any land disturbance or vegetation clearing and according to submitted SWPPP.*

25. *If the applicant does not fully conform to terms and conditions of this permit, then violations to critical areas are enforceable under Whatcom County Code.*

26. *Prior to construction, an "Agreement to Maintain Mitigation" shall be completed by the applicant (LWWSD) and submitted under case number MIT2020-00003. This form can be found online at: http://whatcomcounty.us/DocumentCenter/View/2170/Agreement-to-Maintain-Mitigation-Site-PDF*

27. *Payment of the following fees are required prior to construction:*

a. *SHR2019-000012 – Payment in the total amount of **$896.10** for Wetland Delineation review, Mitigation Plan review, Mitigation As-built inspection, plus 3% technology fee*
b. *MIT2020-00003- Payment in the total amount of **$695.20** for 3 – 5 years monitoring plus 3% technology fee.*

28. *Should archaeological resources (e.g. shell midden, faunal remains, stone tools) be observed during project activities, all work in the immediate vicinity should stop, and the area should be secured. The Washington State Department of Archaeology and Historic Preservation (Gretchen Kaehler, Local Government Archaeologist 360-586-3088) and the Lummi Nation Tribal Historic Preservation Office (Lena Tso, THPO 360-312-2257; Tamela Smart, Deputy THPO 360-312-2253) should be contacted immediately in order to help assess the situation and to determine how to preserve the resource(s). Compliance with all applicable laws pertaining to archaeological resources is required.*

29. *If ground disturbing activities encounter human skeletal remains during the course of construction, then all activity will cease that may cause further disturbance to those remains. The area of the find will be secured and protected from further disturbance. The finding of human skeletal remains will be reported to the county medical examiner/coroner and local law enforcement in the most expeditious manner possible. The remains will not be touched, moved, or further disturbed. The county medical examiner/coroner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or non-forensic. If the county medical examiner/coroner determines the remains are non-forensic, then they will report that finding to the Department of Archaeology and Historic Preservation (DAHP) who will then take jurisdiction over the remains. The DAHP will notify any appropriate cemeteries and all affected tribes of the find. The State Physical Anthropologist will make a determination of whether the remains are Indian or Non-Indian and report that finding to any appropriate cemeteries and the affected tribes. The DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.*

30. *Construction shall be commenced within two (2) years of the effective date of this shoreline permit, as defined by 23.60.190(A)(3), and shall be completed in five (5) years. The Shoreline Administrator may grant a single extension for a period of not more than one (1) year based on a showing of good cause. Such request must be filed with the Shoreline Administrator before the expiration date described above.*

Report prepared by:

Andrew Hicks
Whatcom County Shoreline Administrator
Planning and Development Services

WHATCOM COUNTY HEARING EXAMINER

Shoreline Substantial Development	)	SHR2019-0012
Shoreline Variance	)	SHV2019-0002
Permit for	)	
	)	Lead Agency: Whatcom County
Lake Whatcom Water & Sewer District	)	
"Euclid Sewer Pump Station"	)	Date Received: August 12, 2019
	)	Date Approved: February 4, 2020

Pursuant to WCC Chapter 90.58, a permit is hereby granted to
Lake Whatcom Water & Sewer District

to undertake the following development: to replace existing electrical components for powering and controlling pumps with new components and construction of new shelter to protect workers and electrical items and to add a permanent stationary generator to the site.

Property Description: In the ROW adjacent to and south of 1602 Euclid Avenue Bellingham, Washington

Assessor's Parcel No. 380327 260120

Legal Description: Within Section 27, Township 38 North, Range 03 East, W.M.

within the shoreline area of Lake Whatcom

The project will be located within a Shoreline of Statewide Significance.

The following Shoreline Master Program provisions are applicable to the development:

SMP 23.20	Goals and Objectives
SMP 23.30.020	Official Shoreline Map
SMP 23.30	Shoreline Designations
SMP 23.40	Shoreline of Statewide Significance
SMP 23.60.010	Substantial Development Permit Criteria
SMP 23.60.130	Variance Permit Criteria
SMP 23.60.130	Public Hearings
SMP 23.90	General Policies & Regulations
SMP 23.100	Shoreline Use Policies & Regulations

Development undertaken through this permit shall be subject to the following conditions:

1. *The proposed shoreline developments shall be consistent with the scope and site plans stamped "shoreline approved" on January 17, 2020. Any changes to the proposed development may require additional review and approval by the Whatcom County Shoreline Administrator and/or Whatcom County Hearing Examiner.*

2. *The project must be constructed in accordance with the submitted plans/drawings and supporting documentation and comply with all agency permit conditions.*

3. *Issuance of this shoreline permit does not release the applicant from any other Local, State, regional or Federal statutes or regulations applicable to the proposed development.*

4. *Washington State Department of Ecology Water Quality Standards shall be maintained.*

5. *The project shall not result in significant degradation of ground or surface waters and shall be completed during periods of dry weather.*

6. *The project shall be designed to minimize or eliminate infiltration of flood waters into the system and discharge from the system into flood waters.*

7. *Structures must be anchored to resist flotation, collapse, and lateral movement.*

8. *All electrical and mechanical equipment, and fuel tanks, must be anchored and designed to be water resistant or elevated above the BFE so as to prevent water from entering or accumulating within the components.*

9. *A Revocable Encroachment Permit is required for work within the County ROW.*

10. *If any road closures are anticipated, approved traffic plans, coupled with proper notification procedures are necessary.*

11. *An ESC inspection shall be performed during construction. Contact watershed staff at (360) 778-5948 or (360) 778-5946 to schedule the ESC inspection. Please call 24 hours in advance of your desired inspection date.*

12. *Activities which expose more than 500 sq. ft. of soil are prohibited from October 1 through May 31.*

13. *Stormwater from the proposed development shall be controlled in a manner which does not degrade any critical areas or surface waters or direct water onto neighboring properties.*

14. *Impact posts shall be placed around any structure/equipment placed within 10 ft. of the road.*

15. *NFPA placards and labeling shall be required to meet the International Fire Code 2015 edition and current applicable adopted NFPA standards.*

16. *All construction debris shall be removed from the shoreline environment upon completion of the project and disposed of in accordance to all applicable regulations.*

17. *All construction and work practices shall follow programmatic instructions and best management practices in the REDLINED stamped approved site plans (stamp dated 1/17/2020) and approved REDLINED RH2 reports*

18. *A mitigation as-built report authored by a qualified biologist is required for submittal within 180 days after the project has been constructed. For WCPDS submittal, please refer to mitigation case number MIT2020-00003. The applicant shall include documentation of how the plantings were installed in all areas, any changes that occurred during construction, and 100% completion drawings of the project.*

19. *One year after the approval of the as-built, a yearly monitoring report is due to Whatcom County under case number MIT2020-00003. A report shall be submitted for a minimum of 5 successful monitoring years, and authored by a qualified biologist.*

20. *If any part of the restoration is not working, and performance standards are not being met, a contingency plan shall be authored by the applicant which tailors a different approach to offsetting critical areas losses from the construction of the project.*

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    a. *SHR2019-000012 – Payment in the total amount of **$896.10** for Wetland Delineation review, Mitigation Plan review, Mitigation As-built inspection, plus 3% technology fee*
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30. *Construction shall be commenced within two (2) years of the effective date of this shoreline permit, as defined by 23.60.190(A)(3), and shall be completed in five (5) years. The Shoreline Administrator may grant a single extension for a period of not*

more than one (1) year based on a showing of good cause. Such request must be filed with the Shoreline Administrator before the expiration date described above.

NOTICE

In addition to incurring civil liability under Shoreline Management Program Section 23.80.20 and RCW 90.58.210, pursuant to RCW 90.58.220 any person found to have willfully engaged in activities on shorelines of the state in violation of the provisions of the act or the Shoreline Management Program or other regulations adopted pursuant thereto shall be guilty of a gross misdemeanor and shall be punished by a fine of not less than $25 or more than $1,000 or by imprisonment in the county jail for not more than 90 days, or by both such fine and imprisonment; provided that the fine for the third and all subsequent violations in any five year period shall not be less than $500 nor more than $10,000.

Any person who willfully violates any court order, regulatory order or injunction issued pursuant to the Shoreline Management Program shall be subject to a fine of not more than $5,000, imprisonment in the county jail for not more than 90 days, or both. This approval does not release the applicant from any regulations and procedures required of any other public agency, or any County requirements other than the requirement to obtain a Shoreline Substantial Development Permit and Shoreline Conditional Use Permit. This permit may be rescinded pursuant to RCW 90.58.140(8) in the event the permittee fails to comply with the terms or conditions thereof. Pursuant to Whatcom County Shoreline Management Program Section 23.60.151 this permit shall expire within two years of the date of its approval and a new permit will be required, if the permittee fails to make substantial progress toward completion of the project for which it was approved. Pursuant to Section 23.60.152 it shall expire if the project is not completed within five years of the date of the approval, unless the permittee has requested a review, and upon good cause shown, been granted an extension of the permit.

THIS PERMIT IS NOT VALID (AND NO CONSTRUCTION NOR OPERATION AUTHORIZED BY THIS PERMIT SHALL BEGIN) UNTIL THIRTY (30) DAYS AFTER THE DATE OF FILING AS DEFINED BY RCW 90.58.140(6) AND WAC 197-14-090, OR UNTIL ALL REVIEW PROCEEDINGS INITIATED WITHIN THIRTY DAYS FROM THE DATE OF SUCH FILING HAVE TERMINATED; EXCEPT AS PROVIDED IN RCW 90.58.140(5)(A)(B)(C).

DATED this 4th day of February 2020.

Michael Bobbink

Michael Bobbink, Hearing Examiner

THIS SECTION FOR DEPARTMENT USE ONLY IN REGARD TO A SHORELINE CONDITIONAL USE AND/OR SHORELINE VARIANCE.

Date received by Department _____

Approved_____Denied_____

DATED_____

_____
Signature of Authorized Department Official

APPENDIX D

MITIGATION REPORTS

RH2 ENGINEERING
Bothell
22722 29th Drive SE, Suite 210
Bothell, WA 98021
1.800.720.8052 / rh2.com

July 2, 2024

Whatcom County
Planning and Development Services
5280 Northwest Drive
Bellingham, WA 98226

Sent via: *Email*

Subject: **Lake Whatcom Water and Sewer District – Euclid Sewer Pump Station Improvements, Wetland Mitigation Monitoring As-Built Report, Year 0 – Spring 2024**

Dear Planning and Development Services Staff:

This letter accompanies a *Wetland Mitigation Monitoring As-Built Report* (Report) for the Lake Whatcom Water and Sewer District's (District) Euclid Sewer Pump Station Improvements project. The Report summarizes the results of the Year 0 as-built inspections (Whatcom County Mitigation Reporting Case No. MIT2020-00003) and is intended to satisfy the conditions of the Whatcom County Planning and Development Services (County) Hearing Examiner decision. The District and its design and permitting consultant, RH2 Engineering, Inc. (RH2), obtained the following permits and approvals for the project in 2019/2020:

- Whatcom County Hearing Examiner Decision February 4, 2020
- Shoreline Substantial Development (SHR2019-00012)
- Shoreline Variance (SHV2019-00002)
- Approved Mitigation Plan, detailed in the *Existing Conditions Report and Mitigation Plan for the Lake Whatcom Water and Sewer District's Euclid Sewer Pump Station Improvements Project*, RH2, dated July 24, 2019, submitted July 29, 2019, and stamped "Natural Resources Approved" January 17, 2020.

With submission of this Report, the District intends to continue with monitoring the mitigation site in accordance with the approved Mitigation Plan and County permit conditions. Please review the enclosed Report and respond with questions, if necessary. Both myself and the District's Construction Engineer, Kristin

WASHINGTON LOCATIONS
Bellingham
Bellevue
Bothell (Corporate)
East Wenatchee
Richland
Tacoma

OREGON LOCATIONS
Medford
Portland

IDAHO LOCATIONS
Nampa

Hemenway, can discuss this Report. Kristin can be reached at (360) 389-1997 or kristin.hemenway@lwwsd.org and I can be contacted at (425) 466-6727 or apettibone@rh2.com.

Sincerely,



Alicia Pettibone
Environmental Project Manager

AP/NB/sp/bc

Enclosures: Whatcom County Mitigation Reporting Form, MIT2020-00003
Wetland Mitigation Monitoring As-Built Report, Year 0 – Spring 2024

cc: Kristin Hemenway, PE, Lake Whatcom Water and Sewer District
Justin Clary, PE, Lake Whatcom Water and Sewer District
Greg Nicoll, PE, Lake Whatcom Water and Sewer District
Dan Burwell, PE, RH2 Engineering, Inc.
Orin Paul, PE, RH2 Engineering, Inc.
Noah Bloxton, RH2 Engineering, Inc.

WHATCOM COUNTY
Planning & Development Services
5280 Northwest Drive
Bellingham, WA 98226-9097
360-778-5900, TTY 800-833-6384
360-778-5901 Fax

Mark Personius, AICP
Director

Received Date (Admin Use):

Mitigation Monitoring Report Form

**Please complete this form electronically and email to epermits@co.whatcom.wa.us*
You will need a PDF reader such as www.get.adobe.com/reader/

Case #: MIT 2020-00003

Year 0 *** Monitoring Report**
**Number of years since plant installation*

Applicant Name: Lake Whatcom Water & Sewer District

Mailing Address: 1220 Lakeway Dr.

Bellingham, WA 98229

Email: engineering@lwwsd.org

Property Address: Between Euclid Park & 1602

Euclid Ave. Bellingham, WA

Phone Number: 360-734-9224

1. Describe the current site conditions in reference to the performance standards in your mitigation plan. Mention the growth of installed plants, presence of any volunteer native vegetation and/or invasive species on site, and any significant events or replacement plantings that have occurred:

This is the Year 0 baseline report. Site mitigation was completed by a professional landscape contractor in accordance with the approved project plans and in consultation with project Biologist. Initial planting was performed in October 2023. Irrigation was installed in April 2024 and thus completes the mitigation requirements for submittal of the baseline report. Current site conditions meet the performance standards. Plants appear to have wintered well and are generally healthy with many emergent buds and new leafing. The Redstem Dogwoods (live stakes) and Beaked Hazelnut appear to have a slow start and will be monitored. Small amounts of invasive English Ivy was found within the mitigation zone and were hand-pulled. Site condition is currently damp to saturated and irrigation will be turned on when site conditions dry with warmer weather. Livestake plants that fail to meet the first year's 100% survival threshold will be replaced as needed Fall 2024.

2. List the number of plants in each category. If the number cannot be counted, try to estimate the number that have died or estimate what percentage of the site is covered by that category of plant (Groundcovers will most likely be estimated as percent cover, not a count).

Category	Installed*	Current
Number of Individual Trees	2	2
Number of Individual Shrubs	73	73
Number of Individual Groundcovers	N/A	N/A
Total Number of Plants	75	75

*The number installed is listed in your as-built report.

3. Attach photos taken from established photo points. If photo points have not been established, take photos from multiple points to give a good representation of the whole mitigation area.

Submit a digital copy of the Mitigation Monitoring Form to epermits@co.whatcom.wa.us with the subject line: Attn: Critical Areas Staff – Case# MIT2020-00003

Euclid Sewer Pump Station Improvements Wetland Mitigation Monitoring As-Built Report

Prepared for Lake Whatcom Water and Sewer District

Year 0 – Spring 2024

LWWSD 0418097.01

Date of Installation: October 19, 2023
Inspection Date: April 29, 2024
Report Date: June 24, 2024

Whatcom County Mitigation Reporting Case No. MIT2020-00003

Reporting Completed for:
Whatcom County Planning and Development Services
5280 Northwest Drive
Bellingham, WA 98226-9013

Prepared by:
RH2 Engineering, Inc.
22722 29th Drive SE, Suite 210
Bothell, WA 98021
1.800.720.8052 / rh2.com

Lake Whatcom Water and Sewer District
Euclid Sewer Pump Station Improvements
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Appendix B – District Field Inspection Report

Lake Whatcom Water and Sewer District
Euclid Sewer Pump Station Improvements
Wetland Mitigation Monitoring As-Built Report

Responsible Parties

Applicant

Lake Whatcom Water and Sewer District
Kristin Hemenway, P.E.
1220 Lakeway Drive
Bellingham, WA 98229
Phone: (360) 734-9224
Email: kristin.hemenway@lwwsd.org

Consulting Wetland Ecologist

RH2 Engineering, Inc.
Alicia Pettibone
22722 29th Drive SE, Suite 210
Bothell, WA 98021
Phone: (425) 951-5436
Email: apettibone@rh2.com

Project Overview

This Wetland Mitigation Monitoring As-Built Report (Report) summarizes the results of Year 0 as-built inspections (Whatcom County Mitigation Reporting Case No. MIT2020-00003) for the Lake Whatcom Water and Sewer District's (District) Euclid Sewer Pump Station Improvements project, for which the District and its design and permitting consultant, RH2 Engineering, Inc. (RH2), obtained permits from Whatcom County Planning and Development Services (County) in 2019/2020. The following permits and approvals were obtained for the project:

- Whatcom County Hearing Examiner Decision February 4, 2020
- Shoreline Substantial Development (SHR2019-00012)
- Shoreline Variance (SHV2019-00002)
- Approved Mitigation Plan, detailed in the *Existing Conditions Report and Mitigation Plan for the Lake Whatcom Water and Sewer District's Euclid Sewer Pump Station Improvements Project*, RH2, dated July 24, 2019, submitted July 29, 2019, and stamped "Natural Resources Approved" January 17, 2020.

RH2 has prepared this Report on behalf of the District to document as-built conditions for this mitigation site in accordance with the conditions of approval granted by the Whatcom County Hearing Examiner in February 2020. RH2 and District staff coordinated during the construction phase of the project to achieve successful mitigation installation. Resumes for RH2 staff involved in this work are included in **Appendix A**.

The Euclid Sewer Pump Station Improvements project was intended to upgrade and improve an aging sewer pump station located in Whatcom County right-of-way adjacent to Euclid Park on the 1000 Block of Euclid Avenue in Bellingham, Washington. The project replaced the electrical panels, added an electrical shelter, and installed a permanent standby generator with a new pad and retaining wall.

Improvements on the site resulted in permanent hard surfaces and the loss of approximately 590 square feet (sf) of wetland buffer habitat situated within 100 feet of the Lake Whatcom

shoreline. Consequently, mitigation was proposed to achieve a minimum 1:1 ratio of buffer enhancement adjacent to the Euclid Pump Station and within the Lake Whatcom shoreline. Approximately 720 sf of buffer was enhanced per the approved Mitigation Plan. Mitigation activities included the removal of non-native and invasive English ivy (*Hedera helix*) and Himalayan blackberry (*Rubus armeniacus*), application of topsoil and mulch, and replanting of the buffer mitigation area with native trees and shrubs.

Construction and Mitigation Installation Overview

Project construction started in fall 2022, with project clearing and grubbing in preparation for the retaining wall construction to support a stationary generator on a poured concrete slab. Construction stopped temporarily during the 2022-2023 closure of the Lake Whatcom In-Water Work Window (October 1, 2022 through May 31, 2023). The remainder of the pump station improvement project (retaining wall completion, electrical control shelter construction, fencing, and site restoration) followed in summer and fall 2023.

The mitigation site was planted October 19, 2023, by professional landscape contractor, Windwood Enterprises, with observation by District staff and support by RH2's consulting wetland ecologist. Mitigation was installed per the plans, specifications, and County-approved Mitigation Plan (**Appendix B**) prepared by RH2.

Table 1 summarizes the native tree and shrub vegetation planted in the mitigation area (color-coded to match The Mitigation Plan and Details (Sheet L01), included in **Appendix B**.

Table 1
Summary of Mitigation Plantings by Zone

Zone	Common Name of Plant Species	Quantity
Live Stake Zone (easterly zone of mitigation site, closest to the lake)	Redstem dogwood	20 each
	Sitka willow	
Wet Buffer Zone (middle zone of mitigation site)	Black twinberry	4 each
	Nootka rose	
	Pacific ninebark	
Dry Buffer Zone (westerly zone of mitigation area, closest to the retaining wall and pump station)	Beaked hazelnut	7 each
	Oceanspray	
	Tall Oregon grape	
	Cascara (tree)	2 total

Construction site observation before and during mitigation installation confirmed the sizing and boundaries of the mitigation planting area, sizing and boundaries of the plant zones within the mitigation area, removal of the non-native and invasive weeds, topsoil amendment, and the location, size, quality, quantity, and installation of the required plant material. Following the completion of the planting work, polypropylene boundary fencing was installed around the perimeter of the mitigation planting area to protect the plantings from wildlife browse.

The seasonal and temporary irrigation system was installed and confirmed to be operational on April 29, 2024. The irrigation system is ready for use; District staff will monitor and irrigate the mitigation area in the summer months, adjusting irrigation amounts as needed. Plant condition was assessed at this time and plant growth is excellent. Both the live stake material and container plantings are leafing out and exhibiting healthy growth patterns since the initial October planting. A few English ivy resprouts were observed and hand-pulled on the spot. No non-native blackberries or reed canarygrass (*Phalaris arundinacea*) were present. The District also ensured one in five mitigation plantings were labeled throughout the mitigation area, consistent with the Mitigation Plan. **Appendix C** provides the District's inspection report documenting final punch list work and site conditions. **Photos 1** through **3** depict the mitigation site.



Photo 1 – Mitigation Planting Area from Vantage Point 1 (Standing at Northerly End and Looking South Towards Euclid Avenue), Showing Mitigation Progress, April 29, 2024



Photo 2 – Mitigation Planting Area from Vantage Point 2 (Standing at Southerly End and Looking North Towards Lake Whatcom), Showing Mitigation Progress, April 29, 2024



Photo 3 – Mitigation Planting Area from Vantage Point 3 (Standing at Westerly Edge and Looking Southeasterly), Showing Live Stake Vegetative Growth, June 10, 2024

Mitigation Monitoring and Maintenance

Mitigation goals for this site are excerpted as follows from the *Existing Conditions Report and Mitigation Plan for the Lake Whatcom Water and Sewer District's Euclid Sewer Pump Station Improvements Project* (RH2, 2019), herein referred to as the Mitigation Plan:

- Compensate for the loss of 590 sf of low-functioning buffer areas through enhancement of approximately 720 sf of wetland and buffer (a greater than 1:1 ratio).
- Reduce cover of existing invasive and non-native English ivy and Himalayan blackberry within the mitigation area.
- Enhance the Lake Whatcom shoreline and overall buffer functions at the Euclid Sewer Pump Station project site by establishing native tree and shrub plantings.

RH2 anticipates the mitigation area will be monitored, maintained, and irrigated per the approved Mitigation Plan. **Table 2** summarizes the schedule, performance measures and standards, and anticipated mitigation monitoring reporting for this site.

Table 2
Summary of Mitigation Maintenance and Monitoring Schedule and Benchmarks

Report Year	Planned Monitoring Timing	Projected Report Date	Reporting Benchmark	Performance Measures	Target Performance Standards	Current Status
0	April 2024	June 2024	As-Built Report	None required; however, the District targeted the Year 1 benchmarks of: 100% survival of installed trees and shrubs. No non-native, invasive, blackberry, English ivy, or reed canarygrass present.	None	Achieved[1]
1	April 2025	June 2025	Year 1 Monitoring Report	100% survival of installed trees and shrubs. County-listed Class A and B noxious weeds, non-native blackberries, reed canarygrass, and English ivy will not exceed 25% aerial cover.[2]	None	-
2	April 2026	June 2026	Year 2 Monitoring Report	Aerial cover of native woody species (planted and volunteer) will be at least 30%. Same noxious, invasive, and non-native weed aerial cover target as Year 1.	None	-
3	April 2027	June 2027	Year 3 Monitoring Report	Same noxious, invasive, and non-native weed aerial cover target as Year 1. Fall 2027: The District targets removal of the temporary irrigation system and mitigation area fencing per the Maintenance Plan.	80% survival of installed trees and shrubs. Aerial cover of native woody species will be at least 60%. County-listed Class A, B, and C noxious weeds, non-native blackberries, reed canarygrass, and English ivy will not exceed 10% aerial cover.[3]	-
4	April 2028	June 2028	Year 4 Monitoring Report	Same noxious, invasive, and non-native weed aerial cover target as Year 1.	Carry-over Year 3 survival and aerial cover benchmarks.[3] [4]Same noxious, non-native weed standard as Year 3.	-
5	April 2029	June 2029	Year 5 Monitoring Report	Same noxious, invasive, and non-native weed aerial cover target as Year 1.	Carry-over Year 3 survival and aerial cover benchmarks.[3] [4]Same noxious, non-native weed standard as Year 4.	-

[1] Mitigation plantings are young and healthy. No noxious or invasive weeds present.

[2] This noxious, invasive, and non-native weed aerial coverage standard applies to all years of the monitoring efforts.

[3] The performance standard for noxious, invasive, and non-native weeds was changed from 25% aerial cover to 10% aerial cover by the County as redlined in the "Natural Resources Approved" stamped Mitigation Plan.

[4] Monitoring was recommended by RH2 for a total of 3 years; consequently, the target performance standards do not extend beyond Year 3. The County-approved Mitigation Plan requires 5 years of monitoring; therefore, RH2 recommends the Year 3 target performance standards be applied to subsequent monitoring years. If the benchmarks are achieved prior to year 5, the District shall coordinate possible early site release with the County.

Maintenance and monitoring of the mitigation area will occur biannually (typically in the spring and fall) and shall follow the maintenance, monitoring, and contingency recommendations in the approved Mitigation Plan. Maintenance is recommended to occur prior to monitoring activities, generally involving the following actions:

- Remove all non-native, invasive, and noxious vegetation, including non-native blackberry, English ivy, reed canarygrass, etc. Remove above-ground plant parts and root masses. Protect mitigation plants during weed removal.
- Remove litter, garbage, and unnecessary tree staking or temporary erosion and sediment control measures.
- Replace missing or damaged structures (e.g., tree staking or wildlife browse fencing).
- Augment mulch to keep a minimum 4-inch thickness and 3-foot diameter around plants.
- Replace or generally care for struggling plants.
- Replace dead plants to meet the performance criteria.
- Adjust the irrigation system as needed.

Monitoring activities were recommended by RH2 for a period of 3 years; however, the County adjusted the duration of monitoring to 5 years in the approved Mitigation Plan. Thus, the District plans 5 years of monitoring. If the performance standards are achieved prior to the end of Year 5, the District may consider requesting County release of the site in the year these standards are achieved. The following monitoring actions are planned:

- Record mitigation site progress through the establishment of two photopoint locations. Include photos and map of photopoint locations with monitoring reports.
- Report on plant survival, diversity, vigor, aerial coverage, etc.
- Establish and stake two 50-foot transects to assess percent cover in the mitigation area. Include mitigation plantings, volunteer species, and weed species in aerial cover calculations. Report percent cover calculations and include data forms in monitoring reports.
- Report on noxious and invasive species control activities and recommendations for continued control of these species, especially ivy and blackberry.
- Report on any dead or dying specimens and provide recommendations for replacement.

Per the approved Mitigation Plan, if the mitigation site displays any signs of failure or concerns in the course of monitoring efforts, the District will implement appropriate contingency actions, examples of which are included in the Mitigation Plan.

Conclusions

This Report has been supplied to the District and County to document the progress of wetland buffer mitigation efforts and planned monitoring and maintenance efforts for the Euclid Sewer Pump Station Improvements project. Submittal of this Year 0 As-Built Report is intended to satisfy the conditions of the County's Hearing Examiner decision. Subsequent monitoring efforts, per the approved permit conditions, shall be performed and reports authored by a

qualified biologist. The work completed in preparing this Report has conformed to the standard of care employed by professional ecologists.

If RH2 can assist further, please contact me at (425) 951-5436 or apettibone@rh2.com.

Sincerely,

RH2 ENGINEERING, INC.



Alicia Pettibone
Environmental Project Manager

Appendix A

RH2 Qualifications



Alicia Pettibone

Environmental Project Manager

Alicia manages all permitting work at RH2. She works closely with RH2's staff and clients, as well as regulatory agencies throughout the state, to navigate the regulatory environment. She is adept at facilitating project compliance for critical areas-related projects from start to finish and is often involved with RH2's projects from scoping through construction. In all her work, Alicia strives to deliver environmental services that are high-quality, thorough, and reliable.

Alicia has facilitated approvals through local, state, and federal agencies for the following permits: SEPA; NEPA; Hydraulic Project Approval (HPA); Shoreline Management Act compliance; Critical Areas Ordinance compliance; Endangered Species Act (ESA) compliance; Clean Water Act Section 401, Section 404, and Section 10; NPDES Construction Stormwater General Permit (CSGP); Floodplain Development; Land Use, Site Development, Building, and Construction Permits; and Cultural Resources compliance.

Alicia also leads wetland/stream ecology endeavors at RH2. Her project experience includes wetland and OHWM delineation, classification and functional assessment, regulatory compliance including permit applications and reports, restoration and compensatory mitigation design, construction document preparation, and mitigation monitoring.

Representative Project Experience

- Wetland and OHWM Delineations, Critical Areas Report, Wetland Mitigation Design for the Alger I-5 Water Main Replacement, PUD No. 1 of Skagit County
- Wetland and OHWM Delineation, Critical Areas Report, Wetland Mitigation Design, HPA and Section 404 Permit Support for Sub-basin 46.3a Watercourse Stabilization, City of Mercer Island
- Wetland and OHWM Delineation, Critical Areas Technical Memorandum, SEPA, Clearing and Grading, HPA for the C6 Water Main Connection, Covington Water District
- Wetland and OHWM Delineation, Critical Areas Report, SEPA, Shoreline Permitting, Floodplain Development Permit for Waterfront Park Force Main, City of Leavenworth
- OHWM Delineation, Critical Areas Report, SEPA, Shoreline Permitting, FEMA Habitat Assessment, and Special Use Permit for Old Port Lift Station, City of Olympia
- Wetland and OHWM Delineation, SEPA, Critical Areas Report, NEPA, BA, HPA, Cultural Resources facilitation, and Mitigation Design for Telegraph Road Multimodal Improvements, City of Bellingham
- Wetland and OHWM Delineations, SEPA, Critical Areas Report, Shoreline Exemption, Section 404, HPA, and Mitigation Design for Valencia Street Water Main, City of Bellingham
- Wetland Delineation, Critical Areas Compliance, Compensatory Mitigation Design, Wetland Resource Permitting, Project Management for Center Parkway Roadway Extension, City of Richland
- Wetland Delineation, SEPA, Critical Areas Report, Wetland Mitigation Design, Mitigation Monitoring for the Hawks Prairie Sister Standpipe, City of Lacey
- Wetland and OHWM Delineation, Critical Areas Report, and local permitting for Grainger Springs 2 Booster Pump Station, City of Bonney Lake

Education

BS Environmental Science
Minor, Chemistry
Huxley College of Environmental Studies
Western Washington University 2001

Training/Certifications

Wetland Status and Trends, Swamp School (2024, 2023, 2022)

Using the 2021 Interagency Wetland Mitigation Guidance, Ecology CTP (11/2023)

Western Washington Wetland Rating System, Ecology CTP (03/2023)

Know Your Grasses Workshop, WNPS (07/2021)

Plant Morphology Workshop, WNPS (11/2020)

Eastern Washington Wetland Rating System, Ecology CTP (10/2016)

Using the Credit-Debit Method for Estimating Mitigation Needs, Ecology CTP (05/2015)

Affiliations

Northwest Association of Environmental Professionals

Society of Wetland Scientists

Experience

23 years of experience
23 years at RH2



Noah Bloxton

Environmental Scientist

As a dedicated environmental scientist, Noah supports a variety of RH2's projects through conducting field investigations, preparing technical reports, and drafting permit applications. Having completed the University of Washington Wetland Science and Management Certificate, he has a background in wetland ecology and policy that makes him a great asset for projects requiring critical areas compliance. Prior to joining RH2, Noah conducted field work for local, state, and federal agencies, including restoration monitoring and wildlife surveys. His work at RH2 has included facilitating compliance with SEPA, NEPA, FEMA Floodplain Regulations, Critical Areas Ordinance, Shoreline Management Act, Washington Hydraulic Code, and more.

Representative Project Experience

- SEPA, Wetland Delineation, Wetland Rating, Critical Areas Study, and Public Participation and Communication Plan for Boulevard Park Sewer Extension and Drainage Improvements, Valley View Sewer District
- Wetland and OHWM Delineation, Wetland Rating, and Critical Areas Compliance Assistance for Water Pipeline Relocation at Alger I-5 Interchange, Public Utility District No. 1 of Skagit County
- Wetland and OHWM Delineation, Wetland Rating, and Critical Areas Compliance Assistance for Wellfield 440 Zone Booster Pump Station, City of Blaine
- Water System Locating and Inventory using Trimble GPS for Point Defiance Park Water System, Metropolitan Park District of Tacoma
- SEPA, Shoreline Permitting, FEMA Habitat Assessment, and Special Use Permit for Old Port Lift Station, City of Olympia
- Wetland and OHWM Delineation, Wetland Rating, and Critical Areas Technical Memorandum for Grainger Springs Pump House Replacement, City of Bonney Lake
- SEPA, Shoreline Permitting, OHWM Delineation of the Wenatchee River, and Critical Areas Report for Waterfront Restroom Force Main Relocation, City of Leavenworth
- Wetland Delineation, Wetland Rating, and Critical Areas Compliance Assistance for US 2 and Icicle Road Roundabout, LINK Transit
- SEPA, CUP, Biological Survey, Migratory Bird Treaty Act Compliance, and NEPA Support for Process Water Reuse Facility Improvements Winter Storage, City of Pasco
- SEPA, Wetland Delineation, Wetland Rating, HPA, and Sensitive Areas Compliance Assistance for State Route 169 Water Main Improvements, City of Black Diamond
- SEPA, HPA, Wetland Delineation, Wetland Rating, OHWM Delineation, and Critical Areas Report for Beacon Hill to Skyline View Terrace Water Main, Beacon Hill Water and Sewer District
- Floodplain and Shoreline Permitting Assistance for River Intake Pump Station Discharge Manifold Replacement, Badger Mountain Irrigation District
- Environmental Report for Mosier City Center NEPA Compliance, City of Mosier
- Land Use review and Landscaping Plan Assistance for Southeast Reservoir, City of Yelm
- Wetland Mitigation Monitoring and Report for Hawks Prairie Sister Standpipe, City of Lacey
- Wetland Mitigation Monitoring and Report for Bothell Way NE and NE 195th Circle Rockery Repair, City of Bothell

Education

BS Environmental Science and Natural Resource Management, School of Environmental and Forest Sciences, University of Washington 2021

Trainings/Certifications

Using Field Indicators for Hydric Soils, CTP (10/2023)

Using the Washington Wetland State Wetland Rating System (2014) in Western WA, CTP (03/2023)

Grass, Sedge, and Rush Identification for Western WA Puget Lowland Habitats, CTP (03/2023)

How to Determine the Ordinary High Water Mark, CTP (07/2022)

Wetland Science and Management Certificate, UW (06/2022)

Biological Assessment Author Training, WSDOT H&LP (Certified Junior Author 03/2022)

Affiliations

Society of Wetland Scientists

Experience

4 years of experience
2 years at RH2

Appendix B

Mitigation Plan Sheets and Mitigation Plan

Wetland reconnaissance + partial Mit plan (see approved site plans)

RH2 ENGINEERING
BOTHELL
22722 29th Drive SE, Suite 210
Bothell, WA 98021
1.800.720.8052 / rh2.com

Natural Resources Approved
☐ Watershed — Initials — Date
☒ Wetland/HCA — Initials: ae — Date: 1/17/20
☐ Geo-hazard — Initials — Date

July 1, 2019 ★ as redlined ★

Mr. Thomas Brissenden
Planner
Whatcom County Planning and Development Services
5280 Northwest Drive
Bellingham, WA 98226

Sent via: Hand Delivery

Subject: Existing Conditions Report and Mitigation Plan for the Lake Whatcom Water and Sewer District's Euclid Sewer Pump Station Improvements Project

Dear Mr. Brissenden:

This letter report is intended to address proposed expansions into the Lake Whatcom shoreline Habitat Conservation Area (HCA) buffer and regulated wetland buffer area associated with the Lake Whatcom Water and Sewer District's (LWWSD) Euclid Sewer Pump Station Improvements project. The project proposes to replace the electrical panels for powering and controlling the pumps, add an electrical shelter, and install a permanent standby generator with a new pad and retaining wall.

A pre-application meeting for the project was conducted by Whatcom County (County) staff on October 25, 2018, and attended by RH2 Engineering, Inc., (RH2) and LWWSD staff. Per RH2's correspondence with Mr. Tom Brissenden of the County, it is assumed that the project is entirely within wetland and/or HCA buffer. As such, if project impacts to these buffers are mitigated according to County standards, the requirement for an accompanying Critical Area Assessment Report is waived. This letter report follows Whatcom County Code (WCC) 16.16.260, General Mitigation Requirements, as well as WCC 16.16.760 and 16.16.680 specific to HCAs and wetlands, respectively.

PLANNING & DEVELOPMENT SERVICES
JUL 29 2019
RECEIVED

Existing Conditions

General

The project area is located on a slope that initially drops steeply from Euclid Avenue (up to 50 percent slope) and gradually flattens out approaching the lake to the northeast. The project is located within Whatcom County right-of-way. Existing conditions include an informal vegetated access roadway with an approximate 20 percent slope leading down to LWWSD's sewer pump

WASHINGTON LOCATIONS
Bellingham
Bothell (Corporate)
East Wenatchee
Issaquah
Richland
Tacoma

OREGON LOCATIONS
Medford
Portland

station and valve vault at the toe of slope. Much of the land adjacent to the project is developed as single-family homes; however, forested Euclid Park abuts the site to the southeast. A wetland area, hereafter referred to as Wetland 1, is located adjacent to the project site to the east.

Euclid Creek flows through Euclid Park into Lake Whatcom and is located approximately 100 feet from the project site.

Site Photographs are enclosed to provide site context and assistance during County review.

Vegetation

The access roadway is grass, and several conifer trees line the boundary of the adjacent parcel north of the site. To the south and east of the project site is Euclid Park, a relatively intact native forest dominated by black cottonwood (*Populus balsamifera*), Western red cedar (*Thuja plicata*), and sword fern (*Polystichum munitum*).

Wetland 1 is dominated by black twinberry (*Lonicera involucrata*), Pacific ninebark (*Physocarpus capitatus*), creeping buttercup (*Ranunculus repens*), and other native and non native plants.

Invasive English ivy (*Hedera helix*) is extremely prevalent in both Euclid Park and Wetland 1, covering existing vegetation and the forest floor. Himalayan Blackberry (*Rubus armeniacus*) is also present within and adjacent to the site.

Soils

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey, the primary soil map unit underlying the site and surrounding areas is Squalicum-Urban land complex, 5 to 20 percent slopes. The Squalicum soil unit is deep and moderately well-drained and is not considered a hydric soil. During RH2 site investigations, redoximorphic features (indicative of hydric soil) were present in the upper 12 inches of soil in Wetland 1.

Hydrology

The primary source of hydrology in Wetland 1 is a high groundwater table. Groundwater meets the surface at the toe of the slope and travels downgradient as subsurface flow to Lake Whatcom. The project area also receives runoff from Euclid Avenue and upslope areas. During RH2 site investigations in January 2019, soils in Wetland 1 were saturated to the surface, and the groundwater table was present within several inches of the soil surface.

Wildlife

During site investigations, deer were observed utilizing the forested area of Euclid Park adjacent to the project site. Common urban wildlife anticipated to be using the nearby shoreline and forested areas include squirrel, racoon, field mice, and songbirds. Although osprey, hawks, and eagles are common along Lake Whatcom, there was no indication of these bird species being present at the project site. Coastal cutthroat trout (*Oncorhynchus clarkii*) are present in Euclid Creek and kokanee (*O. nerka*) are present in Lake Whatcom. No threatened or endangered wildlife species are known to utilize the site or surroundings.

Wetland Functional Assessment

Wetland 1 is a depressional wetland composed of emergent and scrub-shrub Cowardin vegetation classes. A functional assessment of Wetland 1 was completed based on a wetland rating completed using Ecology's 2014 *Wetland Rating System for Western Washington* (Rating System). This system is designed to provide a rapid, qualitative rating of wetland functions. It does not replace a full assessment of wetland functions. Based on the Rating System, Wetland 1 is a Category III wetland based on functions, as shown in **Table 1. Wetland Rating Data Forms and Maps** are enclosed.

Table 1. Qualitative Rating of Wetland Functions, Scores, and Overall Category of Wetland 1

Function	Qualitative Rating of Function	Total Rating Score	Wetland Category
Water Quality Functions		19	III
Site Potential to Improve Water Quality	Moderate		
Landscape Potential to Support Water Quality Functions	High		
Value Rating for the Water Quality Improvement	High		
Hydrologic Functions			
Site Potential to Perform Hydrologic Functions	Low		
Landscape Potential to Support Hydrologic Functions	High		
Value Rating for the Hydrologic Functions	Low		
Habitat Functions			
Site Potential to Provide Habitat	Low		
Landscape Potential to Support Habitat Functions	Moderate		
Value Rating for Habitat Functions	High		

As outlined in WCC 16.16.630, regulated wetland buffer widths are determined by the habitat function of the wetland and the land use intensity of the proposed activity. Since the project is considered a moderate intensity land use and the habitat score of Wetland 1 is 6 points, a 100-foot buffer is anticipated to be required. The project activities are entirely within the regulated buffer of Wetland 1. Wetland impacts and mitigation sequencing are discussed in the sections that follow.

Euclid Creek

Euclid Creek is located approximately 100 feet southeast of the project site. Whatcom County Fish Conservation Areas data shows Euclid Creek as having a known fish distribution, and the creek is shown as a Type F stream on the Washington State Department of Natural Resource's Forest Practices Application Mapping Tool. Per Washington Department of Fish and Wildlife Priority Habitats and Species data, Euclid Creek provides habitat for coastal cutthroat trout. Type F streams require a 100-foot buffer (WCC 16.16.740(B)(3)). The project is outside of the

regulated stream buffer and is not anticipated to result in any impacts to Euclid Creek or its associated buffer areas.

Lake Whatcom

The project site is located entirely within the shoreline jurisdiction of Lake Whatcom, a designated Shoreline of the State. Additionally, a portion of the project is within the 100-foot HCA buffer of Lake Whatcom. Permanent project impacts within the HCA buffer will be mitigated at a 1:1 ratio.

Critical Area and Buffer Impacts

Stream Buffer Impacts

As discussed previously, the project will not result in any adverse impacts to the buffer of Euclid Creek. However, mitigation activities will occur within the creek buffer, which is expected to improve buffer functioning.

Wetland and HCA Buffer Impacts

The project proposes to create approximately 590 square feet (sf) of hard surface, which is assumed to be entirely within HCA and/or wetland buffer. The proposed electrical generator and pad (approximately 480 sf) are entirely within the Wetland 1 buffer, while the electrical shelter improvements (approximately 110 sf) are within both the HCA and wetland buffers. The areas proposed to be disturbed are primarily previously disturbed areas within right-of-way that are lacking in native vegetation cover and provide minimal habitat or other supportive buffer functions. However, some native shrubs will need to be removed for construction of the electrical generator and pad. Impacts to the buffer will be mitigated by enhancing approximately 720 sf (a greater than 1:1 ratio) adjacent to and within the existing wetland. Enhancement activities will focus on removal of non-native and invasive English ivy and Himalayan blackberry and replanting with native trees and shrubs. This approach will provide a functional uplift of the existing wetland and buffer, while protecting existing native vegetation from the adverse impacts of invasive species. This approach is consistent with best available science and compatible with Lake Whatcom Watershed and recovery planning goals.

Mitigation Sequencing

Complete avoidance of impacts to the HCA and wetland buffer areas is not feasible because the existing infrastructure is located within these buffers and improvements are location dependent. The project proposes to upgrade power and controls of the Euclid Pump Station, which was originally built in the 1970s and was rehabilitated approximately 20 years ago. If the aging pump station were to fail prior to project activities, the risk of polluting Lake Whatcom with raw sewage increases, seriously affecting the environment and the 90,000 plus residents that utilize Lake Whatcom as a drinking water source. Consequently, the risk of complete avoidance is environmentally and socially more detrimental than the project itself.

During project design, efforts have been taken to minimize adverse impacts to the shoreline HCA and wetland buffer to the maximum extent practicable while still accommodating the project activities. Minimization efforts include situating site improvements as far from lake

shoreline areas as possible; reducing the size and footprint of electrical and control equipment; locating improvements in areas that have been previously disturbed; and including a retaining wall in the engine generator pad design to minimize cut and fill impacts. The on-site emergency power generator will reduce the risk of a sewage overflow into the lake. The required control and power panel addition provides a reliable, minimal, and modern design that LWWSD has standardized over the last decade. Standardizing equipment also reduces the risk of sewage overflow, because maintenance crews know how the system operates, as it is consistent with other sewer pump stations in their system.

To provide compensatory mitigation for adverse impacts to the HCA and wetland buffers, RH2 proposes to enhance the upslope Lake Whatcom shoreline within Wetland 1 and its buffer adjacent to the proposed area of impact. Mitigation includes removal of existing invasive and non-native species, and replacement with native tree and shrub species. The existing mitigation area is dominated by English ivy, which provides minimal buffer functions as related to water quality, hydrology, or habitat. Removal of invasive species is intended to facilitate establishment of denser, more diverse (vertically and horizontally) native vegetation. By planting and establishing a variety of native shrubs and trees, the mitigation area will provide greater water quality, hydrologic, and habitat functions, and better protect the existing critical area functions on the site. Establishing dense woody vegetation in place of invasive vines will increase the sediment filtering capacity of the buffer and will help slow runoff velocity, especially from the existing roadway and proposed engine generator pad. Re-establishing native vegetation will increase both cover and forage sources for wildlife. Furthermore, this functional uplift will benefit Lake Whatcom and its habitat since Wetland 1 directly outlets to the lake. The mitigation area will be monitored and maintained in accordance with County requirements, allowing for permanent establishment, and facilitating functional uplift of this site.

Construction Overview

Construction will occur from June to September, accommodating the requirements of the Lake Whatcom construction window. Construction will require adherence to a project-specific **Stormwater Pollution Prevention Plan** (SWPPP) (enclosed). Stormwater best management practices (BMPs), identified in the SWPPP, will be installed prior to construction and maintained throughout construction. Adherence with the SWPPP will be ensured via weekly inspections by LWWSD and the general contractor, and corrective actions will be taken during and following precipitation events, as needed.

The enclosed **Existing Site, TESC and Demolition Plan** shows the proposed clearing, grading, and excavation activities, and temporary erosion and sediment control (TESC) measures.

The mitigation area will be clearly staked and flagged prior to and during any site clearing and construction to ensure protection during construction. Planting will occur simultaneously with installation of the temporary irrigation system, anticipated to be an above-ground drip hose system connected to the LWWSD water system.

Equipment will be selected by the contractor but likely will include a rubber tired or low-impact track backhoe for landscape clearing and grubbing, along with hand work for the physical planting of landscape soils and plants.

Verification of plant size, quality, and quantity will be completed prior to planting. This will include proper topsoil and amendment placement, root preparation, and staking support. LWWSD will work with the general contractor to modify any plant material or soils application, as needed, to facilitate site success.

The temporary irrigation system will be verified to drip into each root well and area to be planted to ensure adequate moisture is obtained. The temporary irrigation system will be checked twice monthly in the first 2 months of operation to verify plants are receiving adequate irrigation. Nighttime irrigation is encouraged to reduce evaporation loss.

The use of heavy mulch is recommended to reduce weed growth and maintain a moisture barrier to protect the new plants. No phosphorus fertilizers will be utilized in topsoil to help protect Lake Whatcom.

Mitigation Plan

The enclosed **Mitigation Plan and Details** show the 100-foot HCA buffer (from the Lake Whatcom shoreline edge) and wetland buffer (from the approximate boundary of Wetland 1), as well as the proposed mitigation components.

Mitigation Goals and Objectives

The following goals and objectives are guiding this mitigation plan:

1) Compensate for the loss of 590 sf of low-functioning buffer areas through enhancement of approximately 720 sf of wetland and buffer (a greater than 1:1 ratio).
2) Reduce cover of existing invasive and non-native English ivy and Himalayan blackberry within the mitigation area.
3) Enhance the Lake Whatcom shoreline and overall buffer functions at the Euclid Sewer Pump Station project site by establishing native tree and shrub plantings.

Performance Measures and Standards

Performance standards are used to quantify whether the mitigation objectives are being met. Monitoring of the site will occur for a period of 3 years, unless the site meets the standards of success sooner. Performance of the site, in accordance with the below measures, will be assessed in permanent monitoring plots for the entire monitoring period.

Survival of Installed Trees and Shrubs

- Performance Measure (Year 1): There will be 100-percent survival of installed trees and shrubs. If all dead tree and shrub plantings are replaced, this performance measure will be met.
- Performance Standard (Year 3): There will be 80-percent survival of installed trees and shrubs.

Percent Cover

- Performance Measure (Year 2): Aerial cover of native woody species (planted and volunteer) will be at least 30 percent in the mitigation area.
- Performance Standard (Year 3): Aerial cover of native woody species will be at least 60 percent in the mitigation area.

Non-Native and Invasive Species

- Performance Measure (all years): County-listed Class A and B noxious weeds (listed online at the Whatcom County Noxious Weed Control Board), non-native blackberries (e.g., *Rubus armeniacus* and *R. laciniatus*), reed canarygrass (*Phalaris arundinacea*), and English ivy (*Hedera helix*) will not exceed 25 percent aerial cover at the mitigation site.
- Performance Standard (Year 3): County-listed Class A and Class B noxious weeds and non-native blackberries, reed canary grass, and English ivy will not exceed 25 percent aerial cover at the mitigation site.

Maintenance and Monitoring Program

Post-construction maintenance and monitoring will be completed annually for a minimum of 3 years. Maintenance will be performed at least twice yearly, preferably in the spring and late summer/early fall.

Post-Construction Maintenance

Maintenance shall occur twice yearly in the April and October timeframe. During each maintenance site visit, the following activities shall be performed:

- Remove all non-native, invasive, and noxious vegetation, including ivy and blackberry. Remove above-ground plant parts and root masses. All removal of vegetation is to be completed manually or using light-duty mechanized equipment (i.e., mowing or a weed whacker) without the use of herbicides. Protect all mitigation plantings during invasive species removal. All removed plant parts shall be taken from the mitigation area and disposed offsite.
- Remove all litter and garbage from the mitigation area, including failed or no longer functioning TESC measures, tree staking, etc.
- Replace damaged or missing structures, such as tree staking, tree protectors, etc.
- Replace/augment mulch to maintain a minimum 4-inch height and 3-foot diameter around all plantings.
- Replant uprooted plants, right leaning plants, and generally care for struggling plants.
- Replace dead plant material. Replacement plantings shall be in-kind unless otherwise specified during monitoring efforts or by the County. Install replacement plantings within 30 days of discovery, but preferably during the dormant period.
- Inspect the operation of temporary irrigation and replace components, as needed. Temporary irrigation is anticipated to be removed after 3 years.

- Inspect protective polypropylene fencing and repair, as needed. Protective fencing is anticipated to be removed after 3 years. construction

Due to the proximity to sensitive areas, the following normal maintenance activities shall be carefully completed:

- Only approved organic fertilizers applied directly to planting wells (not aerially) are permissible, if necessary. Fertilizers, if used, shall be phosphorus free to comply with County protection guidance for Lake Whatcom.
- Only approved aquatic herbicides are permissible, if necessary. Aquatic herbicides may be necessary for the control of blackberry, ivy, or other invasive species on site; however, this method should be used only as a last resort following other methods and should be completed under the care and direction of a licensed herbicide applicator.
- No dumping is allowed in the mitigation area. All materials used or removed during maintenance activities shall be disposed offsite.
- Signage to be installed according to approved site plans

Mitigation Monitoring

Monitoring will begin the first growing season following installation approval and shall continue for a period of 3 5 years. Monitoring activities shall occur annually, preferably in the spring, to allow for reporting to occur in the summer, followed by fall maintenance activities. The results of the monitoring activities shall be communicated to the County via an annual report. Proposed monitoring methods will include the following activities:

- At the first monitoring site visit, flag mitigation plants for future identification and count plants to ensure consistency with the approved Mitigation Plan. Note plant conditions (i.e., alive/flourishing, damaged/sickly, dead/dying).
- Visually record mitigation site progress. Establish at least two photopoint locations to capture the entire mitigation area. Collect a minimum of two photos per photopoint during each monitoring site visit. Include photos with monitoring reports. Record photopoint locations on a monitoring plan map included with monitoring reports.
- Report on plant survival, diversity, vigor, aerial coverage, etc. Reporting shall be completed to detail the mitigation site's success in general, as well as to assess the site's success in meeting the performance measures and standards.
- Establish and stake for continued monitoring at least two 50-foot transects to assess percent cover of plants in the mitigation area. Include mitigation plantings, native and non-native recruitments, and invasive species in aerial cover calculations. Percent cover calculations will be reported, along with associated data forms, in monitoring reports.
- Report on noxious and invasive species control and provide recommendations for continued maintenance activities specific to such species, especially ivy and blackberry.
- Report on any dead or dying specimens and provide recommendations for replacement, as necessary. Replace all dead plant material within 30 days of discovery.
- Report on site hydrology, including extent of inundation and saturation in the mitigation area.

If any of the standards of success are not being met, LWWSD shall be notified within the monitoring reports and provided with a list of applicable activities to bring the site into compliance.

Contingencies

A contingency plan involves identifying areas of failure of the mitigation plan and outlining corrective actions that could be taken. If monitoring results indicate that any of the performance standards are not being met, it may be necessary to implement all or part of the contingency plan. Careful attention to maintenance and establishment of replacement plantings is essential to ensuring that problems do not arise. Should any part of the mitigation site fail to meet the criteria for success, a contingency plan will be developed on a case-by-case basis to address the problem at hand. Contingency plans shall be approved by and implemented with oversight from LWWSD and the County. Contingency activities may include, but are not limited to, the following:

- Replace plants lost to vandalism, drought, disease, or pest infestation, as necessary, to satisfy performance measures and standards.
- If percent cover standards are failing to be met, specifically with respect to invasive and non-native species, increase maintenance to monthly during the growing season (April to October) and every two months from November to March.
- If plantings show signs of damage from humans, temporary fencing will be installed to protect the area from trespass until the plants are established. This may include welded wire mesh fence fabric and steel fence post stakes driven into the ground.
- Should a particular plant species continue to fail on the site (15-percent mortality rate or greater), replace with a similar, native species that would be better suited to site conditions.
- Should a particular woody plant species become a nuisance on the site (i.e., establishing over 70 percent aerial cover in any one plant community), measures shall be taken to selectively trim or remove individual species.
- If monitoring determines that blackberry, ivy, or another non-native or invasive plant species continues to be or becomes a nuisance on the site (i.e., interfering with the establishment of mitigation plantings and/or exceeding the performance measures for invasive species), measures shall be taken to control and remove these species. Methods can include manual, mechanical, or chemical means, so long as they are pre-approved by the County and conducted using environmentally conscious and licensed methods.
- Adjust supplemental irrigation and timing as needed to suit mitigation plantings, (i.e., if plants appear dry in the supplemental watering phase despite prescribed watering, increase watering to accommodate plant needs).
- Seed or reseed areas with approved, native grass mixture, as necessary, if erosion/sedimentation occurs in one area.

Evaluation of Potential Adverse Impacts on Adjacent Property Owners

No adverse effects to adjacent property owners are anticipated as the result of the proposed mitigation project.

Other Permits

The Euclid Sewer Pump Station will require a County Revocable Encroachment Permit, Commercial Building Permit, and Shoreline Substantial Development Permit. Application for these permits is anticipated to be submitted concurrently with this letter report in July 2019.

Conclusion

This document is intended for review by the County to inform them of the existing conditions associated with HCA and wetland buffers at the Euclid Sewer Pump Station, anticipated project impacts, and proposed mitigation. This letter report has been prepared to comply with the current laws regulating critical areas and associated buffers. The work completed in preparing this letter report has conformed to the standard of care employed by 'qualified professionals' as described in Whatcom County Code Chapter 16.16, Critical Areas Regulations. No other representation or warranty is made or implied. RH2 appreciates the opportunity to assist LWWSD and the County on this project. Should you have any additional needs, please contact me at (425) 951-5436 or apettibone@rh2.com, or RH2's Project Manager, Dan Burwell, at (360) 684-1548 or dburwell@rh2.com.

Sincerely,

RH2 ENGINEERING, INC.

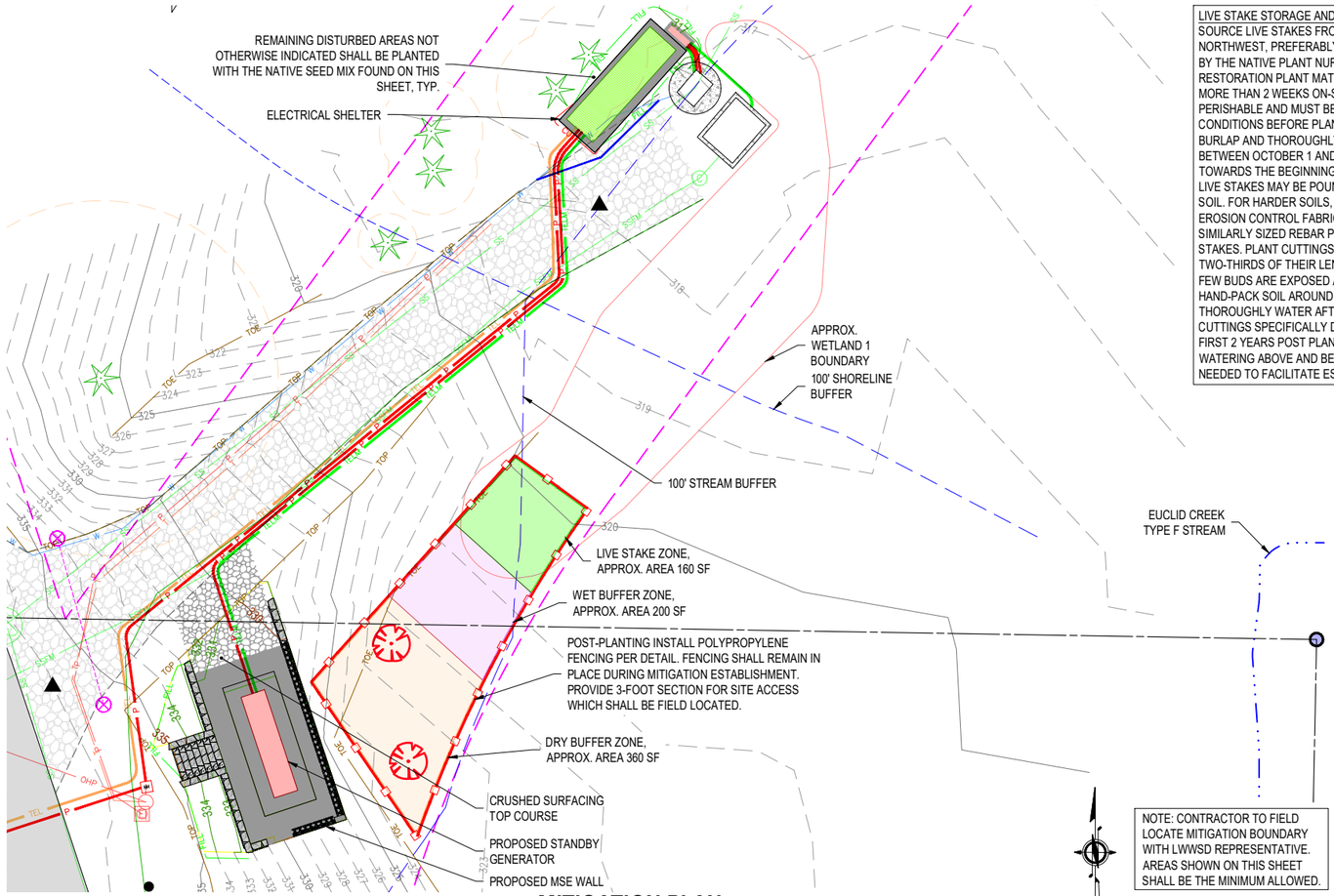


Alicia Pettibone

Environmental Scientist

EC/AP/JM/sp

Enclosures: Site Photographs
Euclid Mitigation Plan and Planting Details and Notes
Euclid Existing Site, Demolition, and TESC Plan
SWPPP
Rating Forms and Data
Qualified Professional Letter



MITIGATION PLAN

1" = 10'

NOTE: CONTRACTOR TO FIELD LOCATE MITIGATION BOUNDARY WITH LWWSD REPRESENTATIVE. AREAS SHOWN ON THIS SHEET SHALL BE THE MINIMUM ALLOWED.

MITIGATION AREA (~720 SF)

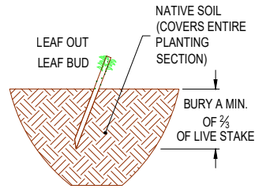
SYMBOL	COMMON NAME	SCIENTIFIC NAME	QTY	SIZE	SPACING DIAMETER	PLANT INDICATOR	HEIGHT AT MATURITY	PLANTING NOTES
SHRUBS								
LIVE STAKE ZONE	REDSTEM DOGWOOD	*CORNUS SERICEA*	20	LIVE STAKE (3/4-1 ½ INCH DIAMETER, 3-5 FEET LONG)	2 FT O.C.	FACW	UP TO 20'	PLANT IN LIVE STAKE ZONE SHOWN (~160 SF) PER THE PLANTING NOTES AND DETAILS ON DWG NO. L01 AND L02.
	SITKA WILLOW	*SALIX SITCHENSIS*	20			FACW	UP TO 24'	
WET BUFFER ZONE	BLACK TWINBERRY	*LONICERA INVOLUCRATA*	4	1 GALLON CONTAINER (10" MIN. HEIGHT)	4 FT O.C.	FAC	UP TO 10'	PLANT IN CLUSTERS OF 3-5 IN WET BUFFER ZONE (~200 SF), PER THE PLANTING NOTES AND THE DETAILS ON DWG NO. L01 AND L02.
	NOOTKA ROSE	*ROSA NUTKANA*	4			FAC	6-10'	
	PACIFIC NINEBARK	*PHYSOCARPUS CAPITATUS*	4			FAC	UP TO 12'	
DRY BUFFER ZONE	BEAKED HAZLENUT	*CORYLUS CORNUTA*	7			FACU	4-12'	PLANT IN CLUSTERS OF 3-5 IN DRY BUFFER ZONE (~360 SF), PER THE PLANTING NOTES AND THE DETAILS ON DWG NO. L01 AND L02.
	OCEANSPRAY	*HOLODISCUS DISCOLOR*	7			FACU	12-15'	
	TALL OREGON GRAPE	*MAHONIA AQUIFOLIUM*	7			FACU	4-8'	
TREES								
	CASCARA	*FRANGULA PURSHIANA*	2	24" MIN. HEIGHT (1 GALLON CONTAINER OR EQUIV.)	15 FT O.C.	FAC	25-30'	PLANT IN LOCATIONS SHOWN PER THE PLANTING NOTES AND DETAILS ON DWG NO. L01 AND L02

NATIVE SEED MIX (~426 SF)

COMMON NAME	SCIENTIFIC NAME	PLANT INDICATOR	PERCENT BY WEIGHT	PERCENT PURITY	PERCENT GERMINATION	PLANTING NOTES
BLUE WILDRYE	*ELYMUS GLAUCUS*	FACU	30%	90%	85%	INERT/OTHER CROP: 2.5% MAX WEED SEED: 0.50% MAX NO NOXIOUS WEEDS ALLOWED IN SEED NO FERTILIZER ALLOWED IN SEED SEED AT 30 PLS LBS/ACRE ADD NATURAL WOOD FIBER MULCH TO SEED MIX AT 35 LBS/ACRE
TUFTED HAIRGRASS	*DESCHAMPSIA CAESPITOSA*	FACW	30%	90%	85%	
NATIVE RED FESCUE	*FESTUCA RUBRA*	FAC	30%	90%	85%	
REDTOP BENTGRASS	*AGROSTIS GIGANTEA*	FAC	10%	90%	85%	

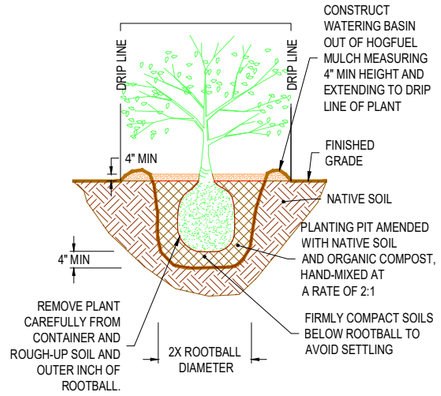
SEED MIX SPECIFIED IS THE NATIVE EROSION CONTROL MIX FROM DIRECT SEED SALES. CONTRACTOR TO USE THIS MIX OR EQUIVALENT. ALL AREAS DISTURBED BY CONSTRUCTION NOT SPECIFICALLY SHOWN TO BE PLANTED SHALL BE SEEDED PER THE ABOVE MIX AND PLANTING DETAILS ON DWG. NO. L01.

LIVE STAKE STORAGE AND PLANTING NOTES:
SOURCE LIVE STAKES FROM SITES NATIVE TO THE PACIFIC NORTHWEST, PREFERABLY FROM ESTABLISHED SITES IN USE BY THE NATIVE PLANT NURSERY SUPPLYING SPECIFIED RESTORATION PLANT MATERIAL. STORE LIVE STAKES FOR NO MORE THAN 2 WEEKS ON-SITE. LIVE STAKES ARE HIGHLY PERISHABLE AND MUST BE STORED IN SHADED, COOL, MOIST CONDITIONS BEFORE PLANTING. STORE STAKES WRAPPED IN BURLAP AND THOROUGHLY WET DAILY. PLANT LIVE STAKES BETWEEN OCTOBER 1 AND MARCH 15, PREFERABLY TOWARDS THE BEGINNING OF THIS WINDOW.
LIVE STAKES MAY BE POUNDED DIRECTLY INTO VERY SOFT SOIL. FOR HARDER SOILS, OR INSTALLATION THROUGH EROSION CONTROL FABRIC, DIG A PILOT HOLE WITH SIMILARLY SIZED REBAR PRIOR TO POUNDING IN LIVE STAKES. PLANT CUTTINGS SO AT LEAST HALF TO TWO-THIRDS OF THEIR LENGTH IS BURIED IN SOIL; ENSURE A FEW BUDS ARE EXPOSED ABOVE THE SOIL SURFACE. HAND-PACK SOIL AROUND CUTTINGS AFTER PLANTING. THOROUGHLY WATER AFTER INSTALLATION, AND MONITOR CUTTINGS SPECIFICALLY DURING SUMMER MONTHS IN THE FIRST 2 YEARS POST PLANTING. PROVIDE SUPPLEMENTAL WATERING ABOVE AND BEYOND IRRIGATION SPECIFIED, AS NEEDED TO FACILITATE ESTABLISHMENT OF LIVE STAKES.



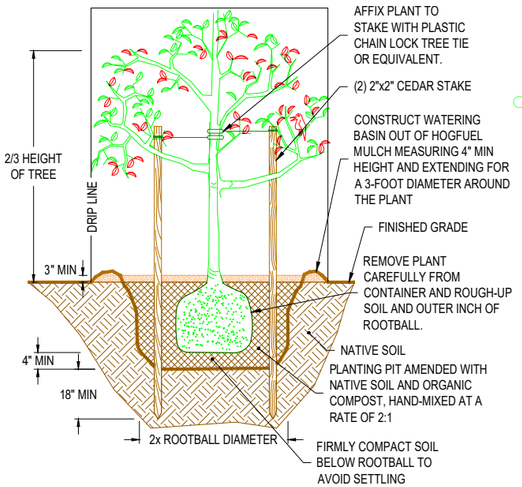
LIVE STAKE OR POLE PLANTING DETAIL

NOT TO SCALE



SHRUB PLANTING DETAIL

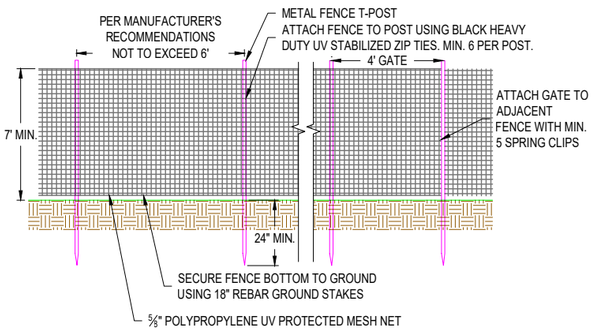
NOT TO SCALE



DECIDUOUS TREE PLANTING DETAIL

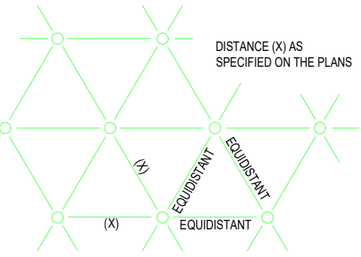
NOT TO SCALE

POLYPROPYLENE FENCE CONSTRUCTION NOTES:
1. DO NOT NAIL OR STAPLE FENCE TO TREES.
2. INSTALL TO RESTRICT WILDLIFE FROM MITIGATION AREA.
3. FIELD LOCATE SINGLE GATE WITH LWWSD REPRESENTATIVE.



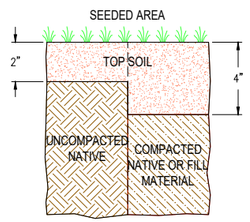
POLYPROPYLENE FENCING

NOT TO SCALE



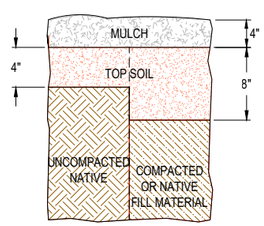
PLANTING PATTERN FOR SHRUBS

NOT TO SCALE



TOPSOIL REQUIREMENTS FOR SEEDED AREA

NOT TO SCALE



TOPSOIL REQUIREMENTS FOR MITIGATION AREA

NOT TO SCALE

RH2

RICHARD L. BALLARD — STATE OF WASHINGTON — 52878 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 01/03/2022

DANIEL W. BURWELL — STATE OF WASHINGTON — 38306 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 01/03/2022

LAKE WHATCOM WATER AND SEWER DISTRICT
EUCLID SEWER PUMP STATION

MITIGATION PLAN & DETAILS

NO.	DATE	DESCRIPTION	BY	REVIEW
	12/06/19	WHATCOM COUNTY CRITICAL AREAS REVIEW COMPLETE	OMP	DWB

REVISIONS

JOB NO.: 418.097
CLIENT: LWWSD
FILENAME: EUCL-D-PLANT.DWG
DATE: Jan 3, 2022
PLOT DATE: Jan 3, 2022
ENGINEER: OMP
REVIEWED: DWB

SCALE: SHOWN
2" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: L01
SHEET NO.: 9 of 27

PLANTING NOTES

GENERAL PLANTING NOTES:

ALL AREAS DISTURBED BY CONSTRUCTION, INCLUDING THE DISTURBED EUCLID PUMP STATION IMPROVEMENTS AREAS AND THE MITIGATION AREA, SHALL BE REVEGETATED. DISTURBED AREAS OF THE SITE (BOTH SHOWN AND THOSE INADVERTENTLY DISTURBED VIA CONSTRUCTION THAT ARE NOT SPECIFICALLY SHOWN) SHALL BE SEEDED WITH THE SPECIFIED NATIVE SEED MIX. THE MITIGATION AREA SHALL BE PLANTED PER THE PLANTING LEGEND, AND MEDIUM BARK MULCH APPLIED OVER THE ENTIRE AREA FOR GROUNDCOVER AS DETAILED.

PLANTING AND INVASIVE SPECIES REMOVAL SHALL BE COMPLETED BY A LANDSCAPE CONTRACTOR WITH AT LEAST 5 YEARS OF EXPERIENCE IN NATIVE PLANT AND SENSITIVE AREAS RESTORATION. INVASIVE SPECIES REMOVAL AND TREATMENT SHALL ALSO BE COMPLETED BY A LANDSCAPE CONTRACTOR LICENSED AND EXPERIENCED IN THE LATEST TREATMENT METHODOLOGY. PLANTING SHALL OCCUR BETWEEN SEPTEMBER 15 AND SEPTEMBER 30.

THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING A PRE-PLANTING MEETING, SUCCESSFUL PLANT AND IRRIGATION SYSTEM INSTALLATION, LWWSD ACCEPTANCE POST-PLANTING, AND CARE OF THE SITE FOR A ONE-YEAR PLANT ESTABLISHMENT PERIOD TO START AT PROJECT FINAL COMPLETION. FOLLOWING THE PLANT ESTABLISHMENT PERIOD, LWWSD WILL ASSUME CARE OF THE SITE FROM THE BEGINNING OF YEAR 2 TO THE END OF YEAR 3 (AS REQUIRED BY WHATCOM COUNTY).

MITIGATION SEQUENCING:

MITIGATION SHALL BE COMPLETED IN THE FOLLOWING SEQUENCE:

1. THE CONTRACTOR SHALL SECURE ALL PLANT MATERIAL AND SOILS PRIOR TO BEGINNING WORK ON THE MITIGATION PLAN. SUBMIT BID NURSERY SHEET AND SOIL SPECIFICATION SHEETS TO LWWSD FOR APPROVAL.

2. THE CONTRACTOR SHALL NOTIFY LWWSD 48 HOURS IN ADVANCE OF ANTICIPATED MITIGATION ACTIVITIES. A MEETING SHALL BE HELD ON-SITE PRIOR TO COMMENCEMENT OF MITIGATION ACTIVITIES AND WILL INCLUDE THE CONSULTING ENGINEER, CONTRACTOR, AND LWWSD INSPECTOR. THE APPROVED PLANS, SPECIFICATIONS, AND PERMIT CONDITIONS WILL BE REVIEWED TO ENSURE THAT ALL PARTIES INVOLVED UNDERSTAND THE INTENT OF THE CONSTRUCTION DOCUMENTS, SPECIFICATIONS, SITE ENVIRONMENTAL CONSTRAINTS, SEQUENCES, AND INSPECTION REQUIREMENTS.

3. RETAIN ALL HEALTHY, NATIVE TREES AND SHRUBS AS SHOWN ON DWG NO. C01. VEGETATION TO BE RETAINED SHALL BE PROTECTED FROM REMOVAL, TRAMPLING, OR OTHER IMPACTS DURING CONSTRUCTION. CLEAR ENGLISH IVY, HIMALAYAN BLACKBERRYAND OTHER INVASIVE PLANT SPECIES IN THE MITIGATION AREA. REMOVE ABOVEGROUND PLANT PARTS AND ROOT MASS AND DISPOSE OFFSITE. CONTRACTOR SHALL NOT USE MECHANIZED EQUIPMENT IN THE WETLAND AREA AND SHALL AVOID THE USE OF MECHANIZED EQUIPMENT WITHIN THE WETLAND BUFFER TO THE EXTENT PRACTICABLE.

4. FOLLOWING CLEARING AND GRUBBING, AUGMENT SOILS WITH TOPSOIL TO RESTORE THE ELEVATION TO PRE-EXISTING GRADE. VERIFY GRADE IS ADEQUATE WITH THE LWWSD INSPECTOR PRIOR TO IRRIGATION SYSTEM INSTALLATION OR PLANTING.

5. INSTALL TOPSOIL IN AREAS TO BE PLANTED ACCORDING TO THE PLANTING DETAIL, TILLING TOPSOIL INTO THE UPPER 4 INCHES OF NATIVE SOILS.

6. INSTALL ABOVEGROUND IRRIGATION SYSTEM AND ENSURE IT IS FULLY FUNCTIONAL PRIOR TO PLANT INSTALLATION.

7. CONTRACTOR SHALL INSTALL PLANT MATERIAL USING THE SPECIFIED PLANTS AND PLANTING DETAILS. PLANTING SHALL BE COMPLETED BY HAND, PER THE ONSITE DIRECTION OF THE CONSULTING ENGINEER OR LWWSD INSPECTOR. ANY DEVIATIONS FROM THE PLANTING PLAN MUST BE APPROVED BY LWWSD PRIOR TO INSTALLATION.

   ALL PLANTINGS SHALL BE THOROUGHLY WATERED FOLLOWING INSTALLATION. WATER PLANTS NO LESS THAN TWICE A WEEK FOR 15 MINUTES DURING THE FIRST WEEK OF INSTALLATION. WATERING SHALL CONTINUE AT A RATE SUFFICIENT TO ENSURE PLANTINGS BECOME ESTABLISHED UNTIL FALL RAINS CAN PROVIDE SUFFICIENT WATER FOR NEW PLANTINGS.

   INSTALL BARK MULCH OVER ENTIRE WETLAND BUFFER MITIGATION AREA, MEASURING 4 INCHES TALL FOLLOWING PLANT INSTALLATION. FORM MULCH WATERING BASINS AROUND PLANTED VEGETATION AS SHOWN IN PLANTING DETAILS.

   ONLY STAKE THOSE PLANTS THAT CANNOT STAND ALONE IN MODERATE WIND CONDITIONS. AFFIX PLANTS TO STAKES AS LOW AS POSSIBLE ON TRUNKS TO PREVENT TRUNK DAMAGE AND ENCOURAGE PLANTS TO SUPPORT THEMSELVES. DO NOT BRACE PLANTS TOO TIGHTLY. CONTRACTOR SHALL REMOVE ALL STAKING WITHIN 1 YEAR OF INSTALLATION.

   THE CONTRACTOR SHALL LABEL INSTALLED PLANTINGS WITH METAL IDENTIFICATION TAGS, OR THE EQUIVALENT. ONE IN FOUR OF EACH PLANT SPECIES SHALL BE LABELED THROUGHOUT THE MITIGATION AREA.

8. SEED ALL AREAS DISTURBED BY CONSTRUCTION, AND NOT SPECIFICALLY SHOWN TO BE PLANTED, USING THE SPECIFIED SEED MIX.

9. THE CONTRACTOR SHALL INSTALL POLYPROPYLENE FENCING TO PROTECT MITIGATION PLANTINGS FROM DAMAGE BY WILDLIFE, AS SHOWN ON DWG NO. L01.

10. THE CONTRACTOR SHALL NOTIFY LWWSD UPON COMPLETION OF PLANT INSTALLATION TO ARRANGE FOR AN INSPECTION OF THE MITIGATION AREA. ANY CORRECTIONS, SUBSTITUTIONS OR MISSING ITEMS WILL BE ADDRESSED IN WRITING TO THE CONTRACTOR ALONG WITH A SCHEDULE TO ADDRESS THOSE ITEMS.

11. THE CONTRACTOR SHALL WARRANT ALL PLANT MATERIAL TO REMAIN HEALTHY AND ALIVE AND SHALL MAINTAIN THE SITE IN ACCORDANCE WITH THE APPROVED PLANS, SPECIFICATIONS, AND PERMIT CONDITIONS FOR THE 1 YEAR PLANT ESTABLISHMENT PERIOD. DURING THIS PERIOD, THE CONTRACTOR SHALL ENSURE MAINTENANCE ACTIVITIES ARE CARRIED OUT PER THE MAINTENANCE PLAN. FOLLOWING THE INITIAL 1 YEAR PLANT ESTABLISHMENT PERIOD, LWWSD WILL ASSUME RESPONSIBILITY FOR SITE MAINTENANCE.

IRRIGATION:

THE CONTRACTOR SHALL IRRIGATE LANDSCAPED AREAS. IRRIGATION SYSTEM SHALL BE A SERIES OF ABOVEGROUND DRIP HOSES SPREAD THROUGHOUT THE MITIGATION AREA CONNECTED TO THE LWWSD SERVICE LINE. CONTRACTOR SHALL DESIGN IRRIGATION SYSTEM TO INCLUDE AUTOMATIC CONTROLLER. PROVIDE AND INSTALL A METER AND BOX PER OWNER STANDARD DETAILS AHEAD OF THE IRRIGATION CONNECTION. LWWSD WILL PAY FOR WATER USE. AFTER INSTALLATION THE CONTRACTOR SHALL TEST IRRIGATION SYSTEM OVER A PERIOD OF TWO (2) DAYS TO ENSURE IT IS PROPERLY FUNCTIONING, TO BE APPROVED BY LWWSD. THE IRRIGATION SYSTEM WILL PROVIDE SUPPLEMENTAL WATERING REQUIREMENTS FOR NEWLY INSTALLED VEGETATION AND DURING THE DRY SEASON (JULY 1ST THROUGH OCTOBER 15TH) FOR A MINIMUM OF 2 YEARS FOLLOWING INSTALLATION. TREES SHALL RECEIVE A MINIMUM OF 2 INCHES OF WATER PER WEEK AND SHRUBS SHALL RECEIVE A MINIMUM OF 1 INCH OF WATER PER WEEK. AT A MINIMUM, WATER SHALL BE SUPPLIED TO NEW PLANTINGS IN THE DRY SEASON, BUT MAY ALSO BE SUPPLIED THROUGHOUT THE YEAR AS NEEDED BASED ON WEATHER CONDITIONS. APPLICATION RATES MAY NEED TO BE ADJUSTED TO MATCH ON-SITE PLANTING NEEDS AND THE CONTRACTOR SHALL WORK WITH LWWSDTO MODIFY RATES AS NEEDED. LWWSD WILL ASSUME OPERATION OF THE IRRIGATION SYSTEM FOLLOWING THE FIRST YEAR OF THE PLANT ESTABLISHMENT PERIOD.

MITIGATION GOALS AND PERFORMANCE STANDARDS:

THE MITIGATION AREAS HAVE BEEN DESIGNED TO FULFILL WHATCOM COUNTY SHORELINE PERMITTING REQUIREMENTS AS RELATED TO CRITICAL AREAS FOR PROJECT IMPROVEMENTS AT THIS SITE. CONSEQUENTLY, SEVERAL MITIGATION GOALS ARE GUIDING THESE EFFORTS. SUCCESS OF THE SITE IN MEETING THESE GOALS SHALL BE COMPLETED VIA MONITORING EFFORTS, AND MEASUREMENT AGAINST THE APPROVED PERFORMANCE MEASURES AND STANDARDS. TO ENSURE SUCCESS OF THE SITE, MITIGATION MONITORING AND SITE MAINTENANCE IS REQUIRED FOR A PERIOD OF 3 YEARS FOLLOWING SITE ACCEPTANCE. THESE EFFORTS HAVE BEEN DETAILED IN THE EXISTING CONDITIONS REPORT AND MITIGATION PLAN, DATED JULY 2019. THE LANDSCAPE CONTRACTOR WILL COMPLETE MAINTENANCE AS OUTLINED IN THE MAINTENANCE PROGRAM FOR THE FIRST YEAR AFTER FINAL COMPLETION, AFTER WHICH TIME, LWWSD OR ITS ASSIGNS WILL ASSUME MAINTENANCE ACTIVITIES, MONITORING EFFORTS AND REPORTING.

MAINTENANCE:

MAINTENANCE WILL BE PERFORMED AT LEAST TWO TIMES PER YEAR, PREFERABLY IN THE SPRING AND LATE SUMMER/EARLY FALL. THE CONTRACTOR WILL BE RESPONSIBLE FOR PERFORMING TWO MAINTENANCE PERIODS WITHIN THE FIRST YEAR, AFTER WHICH TIME, LWWSD OR ITS ASSIGNS WILL ASSUME MAINTENANCE ACTIVITIES.

MAINTENANCE SHALL OCCUR TWICE YEARLY IN THE APRIL AND OCTOBER TIMEFRAME. DURING EACH MAINTENANCE SITE VISIT, THE FOLLOWING ACTIVITIES SHALL BE PERFORMED.

- REMOVE ALL NON-NATIVE, INVASIVE, AND NOXIOUS VEGETATION, ESPECIALLY ENGLISH IVY AND HIMALAYAN BLACKBERRY. REMOVE ABOVEGROUND PLANT PARTS AND ROOT MASSES. ALL REMOVAL OF VEGETATION IS TO BE COMPLETED MANUALLY OR USING LIGHT-DUTY MECHANIZED EQUIPMENT (I.E., MOWING OR A WEED WHACKER) WITHOUT THE USE OF HERBICIDES. PROTECT ALL MITIGATION PLANTINGS DURING INVASIVE SPECIES REMOVAL. ALL REMOVED PLANT PARTS SHALL BE TAKEN FROM THE MITIGATION AREA AND DISPOSED OFFSITE.
- REMOVE ALL LITTER AND GARBAGE FROM THE MITIGATION AREA, INCLUDING FAILED OR NO-LONGER-FUNCTIONING TESC MEASURES, TREE STAKING, ETC.
- REPLACE DAMAGED OR MISSING STRUCTURES, SUCH AS TREE STAKING, TREE PROTECTORS, ETC.
- REPLACE/AUGMENT MULCH TO MAINTAIN A MINIMUM 4-INCH HEIGHT AND 3-FOOT DIAMETER AROUND ALL PLANTINGS.
- REPLANT UPROOTED PLANTS, RIGHT LEANING PLANTS, AND GENERALLY CARE FOR STRUGGLING PLANTS.
- REPLACE DEAD PLANT MATERIAL. REPLACEMENT PLANTINGS SHALL BE IN-KIND UNLESS OTHERWISE SPECIFIED DURING MONITORING EFFORTS OR BY THE COUNTY. INSTALL REPLACEMENT PLANTINGS WITHIN 30 DAYS OF DISCOVERY, BUT PREFERABLY DURING THE DORMANT PERIOD.
- INSPECT THE OPERATION OF TEMPORARY IRRIGATION AND REPLACE COMPONENTS, AS NEEDED. TEMPORARY IRRIGATION IS ANTICIPATED TO BE REMOVED AFTER 3 YEARS BY LWWSD.
- INSPECT PROTECTIVE POLYPROPYLENE FENCING AND REPAIR, AS NEEDED. PROTECTIVE FENCING IS ANTICIPATED TO BE REMOVED AFTER 3 YEARS.

DUE TO THE PROXIMITY TO SENSITIVE AREAS, THE FOLLOWING NORMAL MAINTENANCE ACTIVITIES SHALL BE CAREFULLY COMPLETED.

- ONLY APPROVED ORGANIC FERTILIZERS APPLIED DIRECTLY TO PLANTING WELLS (NOT AERIALLY) ARE PERMISSIBLE, IF NECESSARY.
- ONLY APPROVED AQUATIC HERBICIDES ARE PERMISSIBLE, IF NECESSARY. AQUATIC HERBICIDES MAY BE NECESSARY FOR THE CONTROL OF BLACKBERRY, IVY, OR OTHER INVASIVE SPECIES ONSITE; HOWEVER, THIS METHOD SHOULD BE USED ONLY AS A LAST RESORT FOLLOWING OTHER METHODS, AND SHOULD BE COMPLETED UNDER THE CARE AND DIRECTION OF A LICENSED HERBICIDE APPLICATOR.
- NO DUMPING IS ALLOWED IN THE MITIGATION AREA. ALL MATERIALS USED OR REMOVED DURING MAINTENANCE ACTIVITIES SHALL BE DISPOSED OFFSITE.

MONITORING:

MONITORING WILL BE COMPLETED BY LWWSD OR ITS ASSIGNS. MONITORING WILL BEGIN THE FIRST GROWING SEASON FOLLOWING INSTALLATION APPROVAL AND SHALL CONTINUE FOR A PERIOD OF 3 YEARS. MONITORING ACTIVITIES SHALL OCCUR ANNUALLY, PREFERABLY IN THE SPRING, TO ALLOW FOR REPORTING AND MAINTENANCE ACTIVITIES TO OCCUR IN THE SUMMER. THE RESULTS OF THE MONITORING ACTIVITIES SHALL BE COMMUNICATED TO THE COUNTY VIA AN ANNUAL REPORT. PROPOSED MONITORING METHODS WILL INCLUDE THE FOLLOWING ACTIVITIES.

- AT THE FIRST MONITORING SITE VISIT, FLAG MITIGATION PLANTS FOR FUTURE IDENTIFICATION AND COUNT PLANTS TO ENSURE CONSISTENCY WITH THE APPROVED MITIGATION PLAN. NOTE PLANT CONDITIONS (I.E., ALIVE/FLOURISHING, DAMAGED/SICKLY, DEAD/DYING).
- VISUALLY RECORD MITIGATION SITE PROGRESS. ESTABLISH TWO PHOTOPOINT LOCATIONS TO CAPTURE THE ENTIRE MITIGATION AREA. COLLECT A MINIMUM OF TWO PHOTOS PER PHOTOPOINT DURING EACH MONITORING SITE VISIT. INCLUDE PHOTOS WITH MONITORING REPORTS. RECORD PHOTOPOINT LOCATIONS ON A MONITORING PLAN MAP INCLUDED WITH MONITORING REPORTS.
- REPORT ON PLANT SURVIVAL, DIVERSITY, VIGOR, AERIAL COVERAGE, ETC. REPORTING SHALL BE COMPLETED TO DETAIL THE MITIGATION SITE'S SUCCESS IN GENERAL, AS WELL AS TO ASSESS THE SITE'S SUCCESS IN MEETING THE PERFORMANCE MEASURES AND STANDARDS.
- ESTABLISH AND STAKE FOR CONTINUED MONITORING AT LEAST TWO 50-FOOT TRANSECTS TO ASSESS PERCENT COVER OF PLANTS IN THE MITIGATION AREA. INCLUDE MITIGATION PLANTINGS, NATIVE AND NON-NATIVE RECRUITMENTS, AND INVASIVE SPECIES IN AERIAL COVER CALCULATIONS. PERCENT COVER CALCULATIONS WILL BE REPORTED, ALONG WITH ASSOCIATED DATA FORMS, IN MONITORING REPORTS.
- REPORT ON NOXIOUS AND INVASIVE SPECIES CONTROL AND PROVIDE RECOMMENDATIONS FOR CONTINUED MAINTENANCE ACTIVITIES SPECIFIC TO SUCH SPECIES, ESPECIALLY IVY.
- REPORT ON ANY DEAD OR DYING SPECIMENS AND PROVIDE RECOMMENDATIONS FOR REPLACEMENT, AS NECESSARY. REPLACE ALL DEAD PLANT MATERIAL WITHIN 30 DAYS OF DISCOVERY.
- REPORT ON SITE HYDROLOGY, INCLUDING EXTENT OF INUNDATION AND SATURATION IN THE MITIGATION AREA.

IF ANY OF THE STANDARDS OF SUCCESS ARE NOT BEING MET, LWWSD SHALL BE NOTIFIED WITHIN THE MONITORING REPORTS AND PROVIDED WITH A LIST OF APPLICABLE ACTIVITIES TO BRING THE SITE INTO COMPLIANCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE REQUIREMENTS FROM THE FIRST YEAR MONITORING REPORT ONLY. LWWSD WILL COMPLETE SUBSEQUENT MAINTENANCE.

CONTINGENCIES

A CONTINGENCY PLAN INVOLVES IDENTIFYING AREAS OF FAILURE OF THE MITIGATION PLAN AND OUTLINING CORRECTIVE ACTIONS THAT COULD BE TAKEN. IF MONITORING RESULTS INDICATE THAT ANY OF THE PERFORMANCE STANDARDS ARE NOT BEING MET, IT MAY BE NECESSARY TO IMPLEMENT ALL OR PART OF THE CONTINGENCY PLAN. REFER TO THE EXISTING CONDITIONS REPORT AND MITIGATION PLAN, DATED JULY 2019, FOR CONTINGENCY PLAN INSTRUCTIONS, AS NEEDED.

RH2

RICHARD L. BALLARD — STATE OF WASHINGTON — 52878 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 01/03/2022

DANIEL W. BROWN — STATE OF WASHINGTON — 38306 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 01/03/2022

LAKE WHATCOM WATER AND SEWER DISTRICT

EUCLID SEWER PUMP STATION

MITIGATION PLAN NOTES

NO.	DATE	DESCRIPTION
1	12/06/19	WHATCOM COUNTY CRICITAL AREAS REVIEW COMPLETE

REVISIONS

ENGINEER: OMP
REVIEWED: DWB
SAVE DATE: Jan 3, 2022
PLOT DATE: Jan 3, 2022
CLIENT: LWWSD
FILENAME: EUCL-D-PLANT.DWG
JOB NO.: 418.097

BY	REVIEW
OMP	DWB

SCALE: SHOWN

2" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: L02

SHEET NO.: 10 27

Appendix C

District Field Inspection Report

FIELD INSPECTION REPORT

Lake Whatcom Water & Sewer District

Report No: 63

Contract	Day	Date:	Sheets:
C1802-EUC Euclid Sewer Pump Station Improvement Project	Monday	4/29/2024	Page 1 of 7

Inspector: Greg Nicoll	
Weather Snow Rain (Clouds) Clear Sunny	**Location** 1602 Euclid Avenue Bellingham, WA
Temp < 32° 33°-45° (46°-65°) 66-80° 81-95° >95°	**Site Conditions** Frozen (Wet) Dry Dusty Other _____
Contractor **A.** Colacurcio Brothers, Inc.	**Representatives Onsite** Owner
B. **C.**	**Photos Taken (Yes/No)?:** Yes

Contractor's Equipment

Make	ID No.	Description / Use
Kubota Excavator		

Contractor's Workforce: Number / Total Hours

	Laborer / Carpenter	Operator	Supervisor	Electrician	Teamster	Testing	Flagger
A.	1	1	1				
B.							

Work Activity Summary

Bid Item #	Bid Item Description	Quantity
4	Mitigation Preparation & Planting	LS

Test(s) Performed

Test	Location	Outcome

Onsite Work

Work Description
8:00 am – K. Hemenway on site to meet contractor and to inspect remaining work associated with the mitigation area planting. Contractor had been sent an e-mail on April 17, 2024 requesting completion of remaining punch list items (installation of irrigation system per Section 2.92, identification of plants per sheet L-02 and installing an entry gate within the fencing). **Site observations:** Overall the site weathered well over the winter. Mulch remains in place. Roughly 50% of the live stakes are budding and most potted plants have new growth. There is no garbage and minimal invasive species growth within the mitigation area. Site conditions are very wet with standing water along the east edge of the mitigation site. Wet area is

Prepared by: Kristin Hemenway

soggy enough to fully sink boots when walking. The wet area extends into the dry buffer zone. The corner of the NE fence has a 2-ft x 2-ft hole in the fence from presumably animal intrusion. There are not any visible signs of animals eating any plants.

8:30 am. Contactor arrived on site with a mini excavator. Scooby described the work plan to K. Hemenway which is acceptable to the District. Contractor will rake back an area of spalls to dig a 1-ft wide trench across the access road between the RPBA box and the mitigation area. Contractor plans to lay a 2-inch PVC pipe to serve as a conduit for a ¾-inch pipe feeding an irrigation system. The ¾-inch pipe will be use as a manifold for 4 runs of soaker hose. A. Butcher arrived on site and began placing the required plant identifiers.

Contractor hand-picked a small amount of emergent English Ivy within the mitigation area. There was a small clump of an unknown plant species emerging amongst a cluster of ivy that was also removed.

A. Butcher identified each plant species and placed 2 EA identifying markers throughout the mitigation site.

Plant count and growth observations:
Live stake planting consists of Sitka Willow and Redstem Dogwood. The following chart depicts current growth in the live stake zone.

Live Stake Zone:

Lake	W	W	D	D	W	W
	D	D	W	W	D	D
	W	W	D	D	D	W
	D	D	W	W	D	W
	W	W	D	D	W	W
	W	W	D	D	W	W
	W	D	W	W	W	W
Street	D	D	D	D	D	D

* D - Redstem Dogwood
*W - Sitka Willow
Light green - emergent buds and/or leafing
Dark green - emergent budgs and/or leafing

All but one of the Sitka Willow live stakes has emergent buds or is leafing. The Redstem Dogwood has very few stakes that are budding. K. Hemenway will check with the biologist to determine if this is expected for the dogwood at this time of year. There are 42 live stake plantings and 40 were required.

Prepared by: Kristin Hemenway

FIELD INSPECTION REPORT

Lake Whatcom Water & Sewer District

Report No: 63

Contract	Day	Date:	Sheets:
C1802-EUC Euclid Sewer Pump Station Improvement Project	Monday	4/29/2024	Page 3 of 7

Wet and Dry Buffers:
Plans require 35 plants throughout the wet and dry buffer zones. 37 plants were counted. All plants survived the winter. Plants within the wet and dry buffer zones generally have new leafing and appear to be thriving. Exception is the beaked hazelnut, Corylus Cornuta, (7 EA) which are smaller in size and appear to be surviving but not thriving. K. Hemenway will continue to monitor into the summer.

11:00 am – Irrigation system piping and soaker hose installation complete. Contractor staked soaker hoses in place with landscape pins. Contractor installed a Nelson Single Outlet Electronic Water Timer (Model #856674) at the RPBA and tested the system. The water meter was off in the street valve box. Water meter turned on and system performed well. No leaks were detected in piping. All soaker hose was functioning and actively dripping.

Due to current wet weather conditions and saturated site conditions, K. Hemenway instructed contractor to turn off the irrigation system and to also close the service meter valve (located to the left of the access road to the station, along the shoulder of Euclid Ave). System will be activated by LWWSD staff when weather conditions change and site irrigation is needed.

11:15 am – K. Hemenway left the project site. Contractor to complete backfill around the pipe at each side of the access road.

Site Photos:



Live Stake Zone – Looking Towards Euclid Ave.



Live Stake Zone – Standing Water Along Easterly Edge

Prepared by: Kristin Hemenway

FIELD INSPECTION REPORT

Lake Whatcom Water & Sewer District

Report No: 63

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C1802-EUC Euclid Sewer Pump Station Improvement Project	Monday	4/29/2024	Page 4 of 7



Live Stake Zone – Budding on Sitka Willow



Live Stake Zone – Typical Redstem Dogwood (No Emergent Buds)



Wet Buffer Zone – Looking Towards Euclid Ave.



Dry Buffer Zone

Prepared by: Kristin Hemenway

FIELD INSPECTION REPORT

Lake Whatcom Water & Sewer District

Report No: 63

Contract	**Day**	**Date:**	**Sheets:**
C1802-EUC Euclid Sewer Pump Station Improvement Project	Monday	4/29/2024	Page 5 of 7



Dry Buffer Zone – Cascara



Dry Buffer Zone – Oceanspray



Dry Buffer Zone – Beaked Hazelnut (Not Thriving)



Dry Buffer Zone – Tall Oregon Grape

Prepared by: Kristin Hemenway

FIELD INSPECTION REPORT

Lake Whatcom Water & Sewer District

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Wet Buffer Zone – Black Twinberry



Wet Buffer Zone – Nootka Rose



Wet Buffer Zone – Pacific Ninebark



Irrigation Sleeve Crossing Access Road

Prepared by: Kristin Hemenway

FIELD INSPECTION REPORT

Lake Whatcom Water & Sewer District

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Dry Buffer Zone – Irrigation Pipe to Soaker Hose Manifold



Mitigation Site – Irrigation System in Place

Progress Photos:
See project folder on the X-drive for additional photos.

**** END OF INSPECTION REPORT ****

Prepared by: Kristin Hemenway

WHATCOM COUNTY
Planning & Development Services
5280 Northwest Drive
Bellingham, WA 98226-9097
360-778-5900, TTY 800-833-6384
360-778-5901 Fax

Mark Personius, AICP
Director

Received Date (Admin Use):

Mitigation Monitoring Report Form

**Please complete this form electronically and email to epermits@co.whatcom.wa.us*
You will need a PDF reader such as www.get.adobe.com/reader/

Case #: MIT 2020-00003

Year 1 *** Monitoring Report**
**Number of years since plant installation*

Applicant Name: Lake Whatcom Water & Sewer District

Mailing Address: 1220 Lakeway Dr.

Bellingham, WA 98229

Email: engineering@lwwsd.org

Property Address: Between Euclid Park & 1602

Euclid Ave. Bellingham, WA

Phone Number: 360-734-9224

1. Describe the current site conditions in reference to the performance standards in your mitigation plan. Mention the growth of installed plants, presence of any volunteer native vegetation and/or invasive species on site, and any significant events or replacement plantings that have occurred:

The project has successfully met Year 1 mitigation performance measures. The wet and dry buffer zone plantings are exhibiting healthy leafing and promising growth. In the live stake zone, plant replacement was completed per the project biologist's recommendations, with professional landscaper Windwood Enterprises installing 7 Snowberry, 7 Pacific Ninebark, and 7 Black Twinberry to replace 17 Redstem Dogwoods and 4 Sitka Willows that did not establish. Native Horsetail is naturally colonizing within the live stake zone. Routine maintenance is performed for site cleanup and to hand-pull English ivy and non-native blackberry. Shaded, damp conditions reduce irrigation needs and minor fencing damage from wildlife is scheduled for repair. The site is establishing well and is progressing toward long-term mitigation success.

2. List the number of plants in each category. If the number cannot be counted, try to estimate the number that have died or estimate what percentage of the site is covered by that category of plant (Groundcovers will most likely be estimated as percent cover, not a count).

Category	Installed*	Current
Number of Individual Trees	2	2
Number of Individual Shrubs	73	73
Number of Individual Groundcovers	N/A	N/A
Total Number of Plants	75	75

*The number installed is listed in your as-built report.

3. Attach photos taken from established photo points. If photo points have not been established, take photos from multiple points to give a good representation of the whole mitigation area.

Submit a digital copy of the Mitigation Monitoring Form to epermits@co.whatcom.wa.us with the subject line: Attn: Critical Areas Staff – Case# MIT2020-00003

Vantage Point 1 - Standing at Live Stake Zone and Looking Towards Euclid Ave



Vantage Point 2 - Standing at Southerly End and Looking North Towards Lake Whatcom



WHATCOM COUNTY
Planning & Development Services
5280 Northwest Drive
Bellingham, WA 98226-9097
360-778-5900, TTY 800-833-6384
360-778-5901 Fax

Mark Personius, AICP
Director

Received Date (Admin Use):

Mitigation Monitoring Report Form

**Please complete this form electronically and email to epermits@co.whatcom.wa.us*
You will need a PDF reader such as www.get.adobe.com/reader/

Case #: MIT 2020-00003

Year 2 *** Monitoring Report**
**Number of years since plant installation*

Applicant Name: Lake Whatcom Water & Sewer District

Mailing Address: 1220 Lakeway Dr.

Bellingham, WA 98229

Email: engineering@lwwsd.org

Property Address: Between Euclid Park & 1602

Euclid Ave. Bellingham, WA

Phone Number: 360-734-9224

1. Describe the current site conditions in reference to the performance standards in your mitigation plan. Mention the growth of installed plants, presence of any volunteer native vegetation and/or invasive species on site, and any significant events or replacement plantings that have occurred:

The mitigation site is generally healthy and establishing well. Several shrub species are thriving, with robust growth and high survival rates. Live stakes have continued to struggle and some mortality and stunted growth are visible in the Live Stake and Wet Buffer zones. Plant replacement will be completed per the project biologist's recommendations to achieve 100% survival and facilitate site success in accordance with the mitigation benchmarks. The District and professional landscaper, Windwood Enterprises, will install 18 additional plantings in all zones of the site, as well as performing maintenance per the recommendations in the Year 2 Monitoring Report (attached). Native horsetail is naturally colonizing in the Live Stake and Wet Buffer zones. Routine maintenance will be performed, including cleanup of debris, control of noxious species, and clearing horsetail within a two-foot radius around each plant to prevent overcrowding and competition, application of mulch, fence damage repair, etc. With the planned replanting and maintenance, the site is expected to progress toward long-term mitigation success.

2. List the number of plants in each category. If the number cannot be counted, try to estimate the number that have died or estimate what percentage of the site is covered by that category of plant (Groundcovers will most likely be estimated as percent cover, not a count).

Category	Installed*	Current
Number of Individual Trees	2	2
Number of Individual Shrubs	73	73
Number of Individual Groundcovers	N/A	N/A
Total Number of Plants	75	75

*The number installed is listed in your as-built report. Current numbers reflect planned plant replacements. See attached Monitoring Report for more information.

3. Attach photos taken from established photo points. If photo points have not been established, take photos from multiple points to give a good representation of the whole mitigation area. See Site Photos attachment in the *Year 2 Mitigation Monitoring Report*, RH2, 10-07-2026

Submit a digital copy of the Mitigation Monitoring Form to epermits@co.whatcom.wa.us with the subject line: Attn: Critical Areas Staff – Case# MIT2020-00003

Wetland Mitigation Monitoring Report

Lake Whatcom Water and Sewer District – Euclid Sewer Pump Station Improvements

Year 2 Monitoring – Fall 2026

Date of Installation: October 19, 2023
Monitoring Date: September 9, 2026
Report Date: October 7, 2026

Whatcom County Mitigation Reporting Case No. MIT2020-00003

Monitoring Completed for:
Whatcom County Planning and Development Services
5280 Northwest Drive
Bellingham, WA 98226-9013

Prepared by:
RH2 Engineering, Inc.
22722 29th Drive SE, Suite 210
Bothell, WA 98021
1.800.720.8052 / rh2.com

Lake Whatcom Water and Sewer District
Wetland Mitigation Monitoring Report
Euclid Sewer Pump Station Improvements
Year 2 Monitoring – Fall 2026
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Lake Whatcom Water and Sewer District
Wetland Mitigation Monitoring Report
Euclid Sewer Pump Station Improvements
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Lake Whatcom Water and Sewer District
Wetland Mitigation Monitoring Report
Euclid Sewer Pump Station Improvements
Year 2 Monitoring – Fall 2026

Responsible Parties

Applicant

Lake Whatcom Water and Sewer District
Greg Nicoll, PE
1220 Lakeway Drive
Bellingham, WA 98229
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Consulting Wetland Ecologist

RH2 Engineering, Inc.
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22722 29th Drive SE, Suite 210
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Project Overview

This Wetland Mitigation Monitoring Report (Report) summarizes the results of the Year 2 wetland buffer mitigation monitoring for the Lake Whatcom Water and Sewer District's (District) Euclid Sewer Pump Station Improvements project. The District and its design consultant, RH2 Engineering, Inc. (RH2), obtained permits from Whatcom County (County) Planning and Development Services in 2019/2020 (Whatcom County Mitigation Reporting Case No. MIT2020-00003). The following permits and approvals were obtained for the project:

- Whatcom County Hearing Examiner Decision February 4, 2020.
- Shoreline Substantial Development (SHR2019-00012).
- Shoreline Variance (SHV2019-00002).
- Approved Mitigation Plan, detailed in the *Existing Conditions Report and Mitigation Plan for the Lake Whatcom Water and Sewer District's Euclid Sewer Pump Station Improvements Project*, RH2, dated July 24, 2019, submitted July 29, 2019, and stamped "Natural Resources Approved" January 17, 2020.

RH2 has prepared this Report on behalf of the District to document Year 2 conditions for this mitigation site in accordance with the conditions of approval granted by the County in February 2020. Resumes for RH2 staff involved in this work are included in **Appendix A**.

The Euclid Sewer Pump Station Improvements project upgraded and improved an aging sewer pump station located in County right-of-way (ROW) adjacent to Euclid Park in the 1000 Block of Euclid Avenue in Bellingham, Washington. The project replaced the electrical panels, added an electrical shelter, and installed a permanent standby generator with a new pad and retaining wall.

Improvements on the site resulted in permanent hard surfaces and impacts to approximately 590 square feet (sf) of wetland buffer habitat situated within 100 feet of the Lake Whatcom shoreline. Consequently, mitigation was proposed to achieve a minimum 1:1 ratio of buffer enhancement adjacent to the Euclid Pump Station and within the shoreline management area. Approximately 720 sf of buffer was enhanced per the approved Mitigation Plan (**Appendix B**). Mitigation activities included the removal of non-native and invasive English ivy (*Hedera helix*) and Himalayan blackberry (*Rubus armeniacus*), application of topsoil and mulch, and replanting with native trees and shrubs.

Mitigation components were installed in October 2023 and May 2024. The As-Built Report was submitted to the County on July 2, 2024, and approved on July 9, 2024. The Year 1 Monitoring Report was submitted to the County on August 8, 2025, and approved on September 11, 2025. On September 9, 2026, monitoring was completed for the District by Ms. Alicia Pettibone and Ms. Astoria Tershy of RH2. This report summarizes the Year 2 monitoring activities and provides recommendations for site success.

Monitoring Requirements

Mitigation Plan Objectives

Mitigation goals for this site are excerpted as follows from the *Existing Conditions Report and Mitigation Plan for the Lake Whatcom Water and Sewer District's Euclid Sewer Pump Station Improvements Project* (RH2, 2019), herein referred to as the Mitigation Plan:

- Compensate for the loss of 590 sf of low-functioning buffer areas through enhancement of approximately 720 sf of buffer (a greater than 1:1 ratio).
- Reduce cover of existing invasive and non-native English ivy and Himalayan blackberry within the mitigation area.
- Enhance the Lake Whatcom shoreline and overall buffer functions at the Euclid Sewer Pump Station project site by establishing native tree and shrub plantings.

Monitoring Methods

Monitoring activities were recommended by RH2 for a period of 3 years; however, the County adjusted the duration of monitoring to 5 years in the approved Mitigation Plan. Thus, the District plans 5 years of monitoring. If the performance standards are achieved prior to the end of Year 5, the District may request County release of the site. The following activities were performed during Year 2 monitoring:

- Record mitigation site progress through the establishment of two photo point locations. Collect photos from each photo point and record photo point locations on a map for reporting.
- Report on plant survival, diversity, vigor, and aerial coverage.
- Establish and stake two linear transects to assess percent cover in the mitigation area. Record all plantings in aerial cover calculations and report on results. Include percent

cover data forms in monitoring reports.
- Report on noxious and invasive species control activities and recommendations for continued control of these species, especially ivy and blackberry.
- Report on any dead or dying specimens and provide recommendations for replacement.
- Report on the site hydrology, including the extent of inundation and saturation in the mitigation area.

Performance Benchmarks and Monitoring Schedule

For Year 2, the approved Mitigation Plan established the following performance measures:

- Aerial cover of native woody species (planted and volunteer) will be at least 30 percent.
- County-listed Class A and B noxious weeds, non-native blackberries, reed canarygrass, and English ivy will not exceed 25 percent aerial cover.

A summary of the mitigation site's performance for Year 2 and prior monitoring years, as well as a summary of the established monitoring schedule and site success benchmarks, is in **Table 1**.

Table 1 – Summary of Mitigation Site Performance, Schedule, and Benchmarks

Monitoring Year	Completed or Planned Monitoring Timing	Completed or Projected Report Date	Reporting Benchmark	Required Performance Measures	Target Performance Standards	Current Status
0	May 2024	July 2024	As-Built Report	None required; however, the District targeted the Year 1 benchmarks of: 100% survival of installed trees and shrubs; and No non-native, invasive, blackberry, English ivy, or reed canarygrass present.	None	Achieved[1]
1	May 2025	August 2025	Year 1 Monitoring Report	100% survival of installed trees and shrubs. County-listed Class A and B noxious weeds, non-native blackberries, reed canarygrass, and English ivy will not exceed 25% aerial cover.[1]	None	Achieved
2	September 2026	October 2026	Year 2 Monitoring Report	Aerial cover of native woody species (planted and volunteer) will be at least 30%. Same noxious, invasive, and non-native weed aerial cover target as Year 1.	None	Not Achieved[2]
3	July 2027	September 2027	Year 3 Monitoring Report	Same noxious, invasive, and non-native weed aerial cover target as Year 1. Fall 2027: The District targets removal of the temporary irrigation system and mitigation area fencing per the Maintenance Plan.	80% survival of installed trees and shrubs. Aerial cover of native woody species will be at least 60%. County-listed Class A, B, and C noxious weeds, non-native blackberries, reed canarygrass, and English ivy will not exceed 10% aerial cover.[3]	-
4	July 2028	September 2028	Year 4 Monitoring Report	Same noxious, invasive, and non-native weed aerial cover target as Year 1.	Carry-over Year 3 survival and aerial cover benchmarks.[4] Same noxious, non-native weed standard as Year 3.	-
5	July 2029	September 2029	Year 5 Monitoring Report	Same noxious, invasive, and non-native weed aerial cover target as Year 1.	Carry-over Year 3 survival and aerial cover benchmarks. Same noxious, non-native weed standard as Year 4.	-

[1] This noxious, invasive, and non-native weed aerial coverage standard applies to all years of the monitoring efforts.

[2] This Report details Year 2 site success and provides recommendations to bring the site into compliance and achieve performance benchmarks for Year 2 and subsequent years.

[3] The performance standard for noxious, invasive, and non-native weeds was changed from 25% aerial cover to 10% aerial cover by the County as redlined in the "Natural Resources Approved" stamped Mitigation Plan.

[4] Monitoring was recommended by RH2 for a total of 3 years; consequently, the target performance standards do not extend beyond Year 3. The County-approved Mitigation Plan requires 5 years of monitoring; therefore, RH2 recommends the Year 3 target performance standards be applied to subsequent monitoring years. If the benchmarks are achieved prior to Year 5, the District shall coordinate site release with the County.

Monitoring Results

Consistency with Mitigation Design and Goals

In October 2023, plantings were installed, and the irrigation system was installed in May 2024. The *Euclid Sewer Pump Station Improvements Wetland Mitigation Monitoring As-Built Report* (RH2, June 2024) documented as-built conditions and confirmed the site was installed per the County-approved Mitigation Plan. **Table 2** summarizes the native tree and shrub vegetation planted in the mitigation area (color-coded to match the Mitigation Plan).

Table 2 – Summary of Mitigation As-Built Plantings by Zone

Zone	Common Name of Plant Species	Quantity
Live Stake Zone (easterly zone of mitigation site, closest to the lake)	Redstem dogwood	20 each
	Sitka willow	
Wet Buffer Zone (middle zone of mitigation site)	Black twinberry	4 each
	Nootka rose	
	Pacific ninebark	
Dry Buffer Zone (westerly zone of mitigation area, closest to the retaining wall and pump station)	Beaked hazelnut	7 each
	Oceanspray	
	Tall Oregon grape	
	Cascara (tree)	2
	Total Plants Installed	**75**

During Year 1 monitoring, the District noted some mortality in the Live Stake Zone and consulted with RH2 biologists for replacement of dead/dying specimens to meet Year 1 performance benchmarks. The District contracted with Windwood Enterprises, Inc., (Windwood) to replace 4 Sitka willows and 17 redstem dogwoods in the Live Stake Zone, which was completed in fall 2025. Windwood planted 1-gallon containerized shrubs with 7 of each of the following species: snowberry, black twinberry, and Pacific ninebark. **Table 3** summarizes the plantings on the mitigation site following these Year 1 plant replacements.

Table 3 – Summary of Mitigation Year 1 Plantings by Zone

Zone	Common Name of Plant Species	Quantity
Live Stake Zone (easterly zone of mitigation site, closest to the lake)	Redstem dogwood	3
	Sitka willow	16
	Snowberry[1]	7 each
	Pacific ninebark	
	Black twinberry	
Wet Buffer Zone (middle zone of mitigation site)	Black twinberry	4 each
	Nootka rose	
	Pacific ninebark	
Dry Buffer Zone (westerly zone of mitigation area, closest to the retaining wall and pump station)	Beaked hazelnut	7 each
	Oceanspray	
	Tall Oregon grape	
	Cascara (tree)	2
	Total Plants Installed	**75**

[1]Replacement plantings during the Year 1 monitoring effort are shown in *italicized* text.

During the Year 2 monitoring effort, RH2 noted the locations of some of the replacement plantings occurred outside of the Live Stake Zone. Live stakes that were struggling or dead were left in the ground and replacement plantings were planted outside of the designated rows, making it difficult to identify the replacements. A few additional plantings were counted, namely a total of 8 black twinberry (*Lonicera involucrata*) and 9 Pacific ninebark (*Physocarpus capitatus*), and RH2 anticipates these were planted by Windwood in fall 2025. These additional replacement plantings influenced plant survival estimates counted during Year 2.

RH2 observed additional plant mortality on the site, which is summarized in the **Plant Survival and Vigor** section. In general, shrub plantings in the Wet and Dry Buffer Zones are thriving, whereas the Sitka willow stakes in the Live Stake Zone and the cascara in the Dry Buffer Zone have struggled to establish. RH2 provides recommendations for plant replacements in this Report and the District has already contracted with Windwood to install replacement plantings.

Volunteer species observed in the mitigation area were red alder (*Alnus rubra*), black cottonwood (*Populus trichocarpa*), Salmonberry (*Rubus spectabilis*), Great horsetail (*Equisetum telmateia*), fireweed (*Chamaenerion angustifolium*), and lady fern (*Athyrium filix-femina*). RH2 observed recruitment of rose and oceanspray from the propagation of mitigation plantings.

Table 4 summarizes the Year 2 plantings on the mitigation site following anticipated plant replacements.

Table 4 – Summary of Mitigation Year 2 Plantings by Zone

Zone	Common Name of Plant Species	Quantity
Live Stake Zone (easterly zone of mitigation site, closest to the lake)	Redstem dogwood	0
	Sitka willow	5
	Snowberry	7
	Pacific ninebark	7
	Black twinberry	8
	Salmonberry	5
	Stink currant	5
Wet Buffer Zone (middle zone of mitigation site)	Black twinberry	2
	Nootka rose	4
	Pacific ninebark	7
	Vine maple	1
Dry Buffer Zone (westerly zone of mitigation area, closest to the retaining wall and pump station)	Beaked hazelnut	5
	Oceanspray	3
	Tall Oregon grape	7
	Red flowering currant	4
	Snowberry	4
	Cascara (tree)	0
	Vine maple	1
	Total Plants Installed	**75**

[1]Replacement plantings during the Year 2 monitoring effort are shown in *italicized* text.

Photo Points

Two photo points were established in the mitigation area to monitor the development of the site. Refer to the Mitigation Monitoring Map for photo point locations (**Appendix C**) and Site Photographs (**Appendix D**) for site photographs collected.

Plant Survival and Vigor

Plant survival in the mitigation area was visually assessed, confirmed, and recorded by RH2. Plant survival is a performance metric for Year 3, so RH2 collected data for a benchmark during Year 2. Plantings that appeared stressed were also recorded. The overall plant survival rate is 68 percent; however, if missing or dead plants are replaced per RH2's recommendations (further in this Report), 100-percent survival will be achieved. The Live Stake Zone experienced the lowest percent survival (57 percent), followed by the Dry Buffer Zone (63 percent). The Wet Buffer Zone achieved 108 percent survivability due to replacement plantings and recruitment of natives. Refer to **Appendix C** for the plant survival monitoring data collected by RH2.

Of all species, cascara suffered the greatest mortality rate (100 percent). Both cascara trees have died. Tall Oregon grape, Nootka rose, oceanspray, Pacific ninebark, and black twinberry

are thriving, with robust planting and survival rates of 70 percent or greater. While plants are generally healthy, some species showed signs of poor or stunted growth. Sitka willow showed strong indications of poor aboveground growth, with all individuals showing only basal growth and dead tissue on the erect stake. In Years 1 and 2, it is typical to see plantings establish root systems first before aboveground growth; therefore, RH2 anticipates the remaining willows on the site will persist into Year 2. Nootka rose showed signs of a fungus or powdery mildew growth and yellowing leaves, for which RH2 recommends the District address with Windwood.

Cover of Native Woody Species

Absolute aerial cover of native woody species in the mitigation area was determined using the line intercept method. Two permanent 45-foot transects spanning the mitigation area were established. Transect lengths were modified from the targeted 50 feet to 45 feet due to site limitations.

The Year 2 performance measure for this site is at least 30 percent aerial cover of native woody species (planted and volunteer). The absolute cover of native woody species for Year 2 is 20 percent, summarized in **Table 5**.

Table 5 – Quantitative Estimates of Native Woody Species Cover

Native Woody Percent Cover Performance Standard: None				
Species	Plant cover (in) over 45 ft Transect		Total Cover (in) All Transects	Total Percent Cover (%)
	Transect 1	Transect 2		
Redstem dogwood	-	-	0	0
Sitka willow	-	-	0	0
Snowberry	-	19	19	1.76
Black twinberry	-	-	0	0
Pacific ninebark	8	42	50	4.63
Nootka rosa	110	24	134	12.41
Cascara	-	-	0	0
Beaked hazelnut	-	-	0	0
Oceanspray	-	-	0	0
Tall Oregon grape	13	-	13	1.20
Total	131	85	216	20.00
Estimated Absolute Cover of Native Woody Species	**24%**	**16%**	**20%**	

The species with the greatest aerial cover observed includes Nootka rose and Pacific ninebark. Black twinberry, Sitka willow, beaked hazelnut, oceanspray, and cascara were not recorded along any transects; however, these species were observed to be growing well, except for cascara. Although percent cover of native woody species did not reach the targeted performance measure of 30 percent, plant replacements in Year 1 affected this metric because replacement plants have not had significant time to establish and grow. RH2 also completed a

visual estimate of percent cover over the entire site, estimating approximately 25 percent cover of native woody species. RH2 anticipates additional planting is needed for the site to meet the Year 3 performance standard of 60 percent aerial cover of native woody species. Even with plant replacements, percent cover of planted native woody species may lag behind these metrics due to the replacements needed.

Cover of Invasive and Non-Native Species

The performance measure for invasive species (all years) is County-listed Class A and B noxious weeds occurring onsite (i.e., Himalayan blackberry, English ivy, and reed canarygrass) do not exceed 25 percent aerial cover at the mitigation site. Invasive species observed onsite during Year 2 monitoring were Himalayan blackberry and English Ivy. Other non-native species observed at the mitigation site were herb Robert (*Geranium robertianum*), hairy cat's ear (*Hypochaeris radicata*), and pepperweed (*Lepidium latifolium*). Invasive and non-native species were mostly concentrated along the edges of the buffer enhancement area. Visually, RH2 estimated less than 10 percent cover of invasive, noxious, weedy species on the mitigation site.

Quantitative sampling for percent cover of invasive species was recorded using the line intercept method. Only Himalayan blackberry was recorded along Transect 1, at 2 percent aerial cover. Therefore, the performance measure for invasive species has been met for Year 2. The results for percent cover of invasive species are summarized in **Table 6**.

Table 6 – Quantitative Estimates of Invasive Species Cover

Invasive Cover Performance Standard: Less than 25%		
	Plant Cover (in) over 45 foot Transect	
Species	**Transect 1**	**Transect 2**
Himalayan Blackberry	12	0
English Ivy	0	0
Reed Canary Grass	0	0
Percent Cover of Invasive Species	**2%**	**0%**
Estimated Absolute Cover of Invasive and Non-Native Species Over Entire Site	**1%**	

Hydrology and Habitat Usage

The wetland mitigation site is watered by a temporary above-ground irrigation system consisting of a drip line operated by a timer. The primary sources of water for the mitigation site are irrigation during the dry months and precipitation, along with surface runoff from Euclid Avenue and the gravel path adjacent to the mitigation site during the wet months. At the time of the Year 2 mitigation monitoring site visit, some saturation to the soil surface was observed in the Live Stake Zone. In prior monitoring years, shallow surface water has been observed collecting along the mitigation site's eastern and northern fence lines.

Some wildlife usage of the mitigation site and surrounding area was recorded during monitoring. Pacific tree frogs (*Pseudacris regilla*) were heard near the site. Songbirds were seen using mature cottonwoods adjacent to the mitigation site to the northeast. Insects, including wasps and bees, were also observed.

Site Disturbance

Minimal debris or trash was observed at the site. There were no signs of dumping, vandalism, or other site disturbance. RH2 completed some removal of dead live stakes, pruning of plantings, etc., and placed these materials in a pile along the site's eastern fence boundary for the District or Windwood to remove and dispose of offsite (refer to the photograph in **Appendix D**).

RH2 observed locations in the site fence that have come loose from the T-posts and need to be reaffixed following maintenance and replanting efforts by Windwood.

Recommendations

The mitigation site is establishing well and in a typical manner for mitigation sites in general. Similarly, most of the mitigation plantings are performing well and exhibiting normal growth for Year 2. Apart from dead live stakes and cascara trees, plantings are generally healthy. A very small proportion of invasive species are present on the site, and the estimated aerial cover of invasive species meets the performance measure. The site is not quite meeting the aerial cover performance measures for native woody species. Consequently, to replace dead plantings and infill the site to meet performance benchmarks, RH2 recommends the District complete planting this fall at the site, as follows.

- In the Live Stake Zone, a deficit of approximately 10 plants is anticipated based on Year 2 monitoring data. Some willow species may persist into Year 3 and RH2 recommends replacement plants utilize containerized plants instead of live stakes because of the mortality observed. Consequently, in or near the locations where live willow stakes or containerized Pacific ninebark plants have died, remove dead plants and plant 1-gallon or larger containerized plants, including 5 each of the following species:
    - Salmonberry (*Rubus spectabilis*)
    - Stink currant (*Ribes bracteosum*)
- In the Wet Buffer Zone, no plant deficit exists; however, there is room on the east side of this zone to infill and plant replacements for the dead cascara tree. Along the east side of this zone, plant a 2- or 5-gallon containerized plant of the following species:
    - Vine maple (*Acer circinatum*) – 1 plant
- In the Dry Buffer Zone, a deficit of 10 plants is anticipated based on Year 2 monitoring data, including the cascara trees. However, there are extra plants from Year 1 plant replacements, so RH2 recommends replacement of 8 total plants (including the vine

maple in the Wet Buffer Zone). Remove dead plants in this zone and install the replacement plants in bare spaces of the zone, as follows:

- Amongst existing plantings, 1-gallon or larger containers of the following:
  - Red flowering currant (*Ribes sanguineum*) – 4 plants
  - Tall Oregon grape (*Mahonia aquifolium*) – 2 plants
- In the eastern side of the zone, a 2- or 5-gallon container of 1 vine maple (*Cascara tree replacement proposed in the Wet and Dry Buffer Zones*).

In addition to plant replacements, RH2 recommends the following maintenance activities be completed this fall to ensure continued success of the mitigation site:

- Clear and mulch a 2-foot-diameter area around the mitigation plantings. Remove horsetail by cutting it at the base of the plant; pulling out the rhizomes can cause the plant to spread more quickly. Install a 4-inch-deep layer of mulch (arborist woodchips) in the cleared diameter around each plant. Horesetail is an early succession species and is a beneficial native; however, keeping it under control for plantings to establish is recommended using this method.
- Secure fencing to stakes after replanting to prevent deer access and ensure the site is entirely enclosed.
- Remove organic and trash debris pile collected by RH2. Also, remove and dispose of offsite any additional dead plants or trash removed during maintenance activities.
- Remove all non-native and invasive vegetation, including Himalayan blackberry, English ivy, herb Robert, etc. Remove above-ground foliage, seeds, and root mass and dispose of plant material offsite.

The District plans to contract with Windwood to complete plant replacements and maintenance activities per these recommendations. With this work, it is anticipated the mitigation site will be positioned to achieve the Year 3 performance benchmarks.

To encourage plantings success, RH2 also recommends the following additional maintenance be performed in spring 2026 prior to Year 3 monitoring:

- Treat fungus-affected roses in spring 2027 with organic fungicide spray, which will require a course of neem oil or milk-and-water solution (1 part milk to 5 parts water) every 7 to 10 days until the fungus clears.

Year 3 monitoring is recommended to occur between June and August of 2027 to evaluate progress most effectively at the site, allow for fall reporting, and facilitate maintenance activities to occur in the fall.

Conclusions

This Report has been supplied to the District to document the progress of mitigation efforts for the Euclid Sewer Pump Station project site as required in accordance with Chapter 16.16.680 Whatcom County Code. RH2 understands the District will submit this Report to the County's Planning Department and intends to complete recommended maintenance activities to facilitate site performance for the Years 2 and 3 performance benchmarks. The work completed in preparing this Report has conformed to the standard of care employed by professional ecologists. No other representation or warranty is made or implied.

Thank you for the opportunity to support compliance monitoring for this mitigation site. If RH2 can assist further, please contact me at (425) 951-5436 or apettibone@rh2.com.

Sincerely,

RH2 ENGINEERING, INC.



Alicia Pettibone, PWS
Senior Ecologist



Astoria Tershy
Staff Environmental Scientist

References

Caratti, J. F. (2006). Line Intercept (LI). In: D.C. Lutes, R.E. Keane, J.F. Caratti, C.H. Key, N.C. Benson, S. Sutherland &, L.J. Gangi (Eds.), *FIREMON: Fire effects monitoring and inventory system* (Gen. Tech. Rep. RMRS-GTR-164-CD, p. LI-1-13). U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.

Whatcom County. (2026). *Chapter 16.16.1680: Wetlands - Mitigation Standards. Whatcom County Code.* https://ecode360.com/47932072#47932237.

Appendices

Appendix A

RH2 Staff Resumes



Education

BS Environmental Science
Minor, Chemistry
Huxley College of
Environmental Studies
Western Washington
University, 2001

Training/Certifications

Professional Wetland
Scientist, No. 4026, SWS
(5/2025)

Wetland Status and
Trends, Swamp School
(2025; 2024; 2023; 2022)

Using the 2021
Interagency Wetland
Mitigation Guidance,
Ecology CTP (11/2023)

Western Washington
Wetland Rating System,
Ecology CTP (03/2023)

Eastern Washington
Wetland Rating System,
Ecology CTP (10/2016)

Affiliations

Washington Native
Plant Society

Northwest Association
of Wetland Managers

Society of Wetland
Scientists

Experience

25 years of experience
25 years at RH2

Alicia Pettibone PWS

Senior Ecologist

Alicia manages RH2's environmental group. She works closely with RH2 staff and clients, as well as regulatory agencies throughout the state, to navigate the regulatory environment. She is adept at facilitating project compliance for critical areas-related projects from start to finish and is often involved with RH2's projects from scoping through construction. In all her work, Alicia delivers environmental services that are high-quality, thorough, and reliable.

Alicia has facilitated approvals through local, state, and federal agencies for the following permits: SEPA; NEPA; Hydraulic Project Approval (HPA); Shoreline Management Act compliance; Critical Areas Ordinance compliance; Endangered Species Act (ESA) compliance; Clean Water Act Section 401, Section 404, and Section 10; NPDES Construction Stormwater General Permit (CSGP); Floodplain Development; Land Use, Site Development, Building, and Construction Permits; and Cultural Resources compliance.

Alicia leads wetland/stream ecology endeavors at RH2. Her project experience includes wetland and OHWM delineation, classification and functional assessment, regulatory compliance including permit applications and reports, restoration and compensatory mitigation design, construction document preparation, and mitigation monitoring.

Representative Project Experience

- Wetland Delineation, Rating, and Permitting for the I-82 Sewer Extension, City of Yakima
- Wetland Reconnaissance and Preliminary Permitting for the Landcastle Flow Control and Water Quality, City of Newcastle
- Wetland Reconnaissance, Agency Consultation and Coordination, and Critical Areas Report for the Sunrise Place to Sycamore Emergency Access Stabilization and Culvert Replacement, City of Issaquah
- Wetland and OHWM Delineation, SEPA, Critical Areas Report, Mitigation Design for the Tremont Lift Station, City of Bellingham
- Wetland and OHWM Delineations, Critical Areas Report, Wetland Mitigation Design for the Alger I-5 Water Main Replacement, PUD No. 1 of Skagit County
- Wetland and OHWM Delineation, Critical Areas Report, Wetland Mitigation Design, HPA and Section 404 Permit Support for Sub-Basin 46.3a Watercourse Stabilization, City of Mercer Island
- Wetland and OHWM Delineation, Critical Areas Technical Memorandum, SEPA, Clearing and Grading, HPA for the C6 Water Main Connection, Covington Water District
- Wetland and OHWM Delineation, Critical Areas Report, SEPA, Shoreline Permitting, Floodplain Development Permit for Waterfront Park Force Main, City of Leavenworth
- OHWM Delineation, Critical Areas Report, SEPA, Shoreline Permitting, FEMA Habitat Assessment, and Special Use Permit for Old Port Lift Station, City of Olympia
- Wetland and OHWM Delineation, SEPA, Critical Areas Report, NEPA, BA, HPA, Cultural Resources Facilitation, and Mitigation Design for Telegraph Road Multimodal Improvements, City of Bellingham
- Wetland and OHWM Delineations, SEPA, Critical Areas Report, Shoreline Exemption, Section 404, HPA, and Mitigation Design for Valencia Street Water Main, City of Bellingham



Astoria Tershy

Environmental Staff Scientist

Astoria is an environmental scientist with a strong foundation in geospatial analysis and statistical research. She brings experience using GIS and data-driven methods to support a wide range of environmental projects. Known for her collaborative approach, Astoria thrives in team settings and is motivated by seeing her contributions lead to meaningful outcomes.

Astoria brings strengths in technical writing and attention to detail. She is skilled in native plant identification and is actively expanding her expertise in mitigation design. Astoria is also dedicated to increasing her knowledge and application of Washington State and federal permit processes. She was drawn to RH2 by its supportive culture and the opportunity to work alongside passionate professionals who bring projects to life through thoughtful analysis and teamwork.

Representative Project Experience

- Mitigation Plan and Critical Areas Report for the Tremont Lift Station, City of Bellingham
- Conditional Use Permit Application for the 440 Zone Wellfield Booster Pump Station, City of Blaine
- Critical Areas Reconnaissance and Critical Areas Map for the New Water Supply Pipeline, City of Mercer Island
- Planting Plan for the Subbasin 46a.3 Watercourse Stabilization, City of Mercer Island and Northwest Hydraulic Consultants, Inc.
- Special Use Permit Application for the Webster Stormwater Predesign and Design, Washington State Department of Natural Resources
- BNSF Utility Crossing Permits and Pre-Application Meeting for the I-82 Sewer Main Extension, City of Yakima
- Critical Areas Reconnaissance and Wetland Rating for the Wastewater Treatment Plant Improvements, City of Sedro-Woolley
- SEPA, Tree Removal Permit, and Height Exceedance Justification for the Lakeridge Reservoirs Replacement, City of Bonney Lake
- Shoreline Substantial Development Permit and Documented Categorical Exclusion Form for the Tanner Trail Extension, City of North Bend

Education

MS Biology
Western Washington University, 2024

BS Ecology and Evolutionary Biology
University of California, Santa Cruz, 2017

Certifications

Western WA Wetland Rating System, Ecology CTP (2025)

Riparian and Wetland Plant Identification in Eastern WA, Ecology CTP (2025)

Basic Wetland Delineation, Wetland Training Institute (2025)

How to Determine the Ordinary High Water Mark, Ecology CTP (2025)

Affiliations

National Association of Wetland Managers

Society of Wetland Scientists

Washington Native Plant Society

Experience

9 years of experience
1 year at RH2

Appendix B

County Approved Mitigation Plan and Drawings

Wetland reconnaissance + partial Mit plan (see approved site plans)

RH2 ENGINEERING
BOTHELL
22722 29th Drive SE, Suite 210
Bothell, WA 98021
1.800.720.8052 / rh2.com

Natural Resources Approved
☐ Watershed — Initials — Date
☒ Wetland/HCA — Initials: ae — Date: 1/17/20
☐ Geo-hazard — Initials — Date

July 1, 2019 ★ as redlined ★

Mr. Thomas Brissenden
Planner
Whatcom County Planning and Development Services
5280 Northwest Drive
Bellingham, WA 98226

Sent via: Hand Delivery

Subject: Existing Conditions Report and Mitigation Plan for the Lake Whatcom Water and Sewer District's Euclid Sewer Pump Station Improvements Project

Dear Mr. Brissenden:

This letter report is intended to address proposed expansions into the Lake Whatcom shoreline Habitat Conservation Area (HCA) buffer and regulated wetland buffer area associated with the Lake Whatcom Water and Sewer District's (LWWSD) Euclid Sewer Pump Station Improvements project. The project proposes to replace the electrical panels for powering and controlling the pumps, add an electrical shelter, and install a permanent standby generator with a new pad and retaining wall.

A pre-application meeting for the project was conducted by Whatcom County (County) staff on October 25, 2018, and attended by RH2 Engineering, Inc., (RH2) and LWWSD staff. Per RH2's correspondence with Mr. Tom Brissenden of the County, it is assumed that the project is entirely within wetland and/or HCA buffer. As such, if project impacts to these buffers are mitigated according to County standards, the requirement for an accompanying Critical Area Assessment Report is waived. This letter report follows Whatcom County Code (WCC) 16.16.260, General Mitigation Requirements, as well as WCC 16.16.760 and 16.16.680 specific to HCAs and wetlands, respectively.

PLANNING & DEVELOPMENT SERVICES
JUL 29 2019
RECEIVED

Existing Conditions

General

The project area is located on a slope that initially drops steeply from Euclid Avenue (up to 50 percent slope) and gradually flattens out approaching the lake to the northeast. The project is located within Whatcom County right-of-way. Existing conditions include an informal vegetated access roadway with an approximate 20 percent slope leading down to LWWSD's sewer pump

WASHINGTON LOCATIONS
Bellingham
Bothell (Corporate)
East Wenatchee
Issaquah
Richland
Tacoma

OREGON LOCATIONS
Medford
Portland

station and valve vault at the toe of slope. Much of the land adjacent to the project is developed as single-family homes; however, forested Euclid Park abuts the site to the southeast. A wetland area, hereafter referred to as Wetland 1, is located adjacent to the project site to the east.

Euclid Creek flows through Euclid Park into Lake Whatcom and is located approximately 100 feet from the project site.

Site Photographs are enclosed to provide site context and assistance during County review.

Vegetation

The access roadway is grass, and several conifer trees line the boundary of the adjacent parcel north of the site. To the south and east of the project site is Euclid Park, a relatively intact native forest dominated by black cottonwood (*Populus balsamifera*), Western red cedar (*Thuja plicata*), and sword fern (*Polystichum munitum*).

Wetland 1 is dominated by black twinberry (*Lonicera involucrata*), Pacific ninebark (*Physocarpus capitatus*), creeping buttercup (*Ranunculus repens*), and other native and non native plants.

Invasive English ivy (*Hedera helix*) is extremely prevalent in both Euclid Park and Wetland 1, covering existing vegetation and the forest floor. Himalayan Blackberry (*Rubus armeniacus*) is also present within and adjacent to the site.

Soils

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey, the primary soil map unit underlying the site and surrounding areas is Squalicum-Urban land complex, 5 to 20 percent slopes. The Squalicum soil unit is deep and moderately well-drained and is not considered a hydric soil. During RH2 site investigations, redoximorphic features (indicative of hydric soil) were present in the upper 12 inches of soil in Wetland 1.

Hydrology

The primary source of hydrology in Wetland 1 is a high groundwater table. Groundwater meets the surface at the toe of the slope and travels downgradient as subsurface flow to Lake Whatcom. The project area also receives runoff from Euclid Avenue and upslope areas. During RH2 site investigations in January 2019, soils in Wetland 1 were saturated to the surface, and the groundwater table was present within several inches of the soil surface.

Wildlife

During site investigations, deer were observed utilizing the forested area of Euclid Park adjacent to the project site. Common urban wildlife anticipated to be using the nearby shoreline and forested areas include squirrel, racoon, field mice, and songbirds. Although osprey, hawks, and eagles are common along Lake Whatcom, there was no indication of these bird species being present at the project site. Coastal cutthroat trout (*Oncorhynchus clarkii*) are present in Euclid Creek and kokanee (*O. nerka*) are present in Lake Whatcom. No threatened or endangered wildlife species are known to utilize the site or surroundings.

Wetland Functional Assessment

Wetland 1 is a depressional wetland composed of emergent and scrub-shrub Cowardin vegetation classes. A functional assessment of Wetland 1 was completed based on a wetland rating completed using Ecology's 2014 *Wetland Rating System for Western Washington* (Rating System). This system is designed to provide a rapid, qualitative rating of wetland functions. It does not replace a full assessment of wetland functions. Based on the Rating System, Wetland 1 is a Category III wetland based on functions, as shown in **Table 1. Wetland Rating Data Forms and Maps** are enclosed.

Table 1. Qualitative Rating of Wetland Functions, Scores, and Overall Category of Wetland 1

Function	Qualitative Rating of Function	Total Rating Score	Wetland Category
Water Quality Functions		19	III
Site Potential to Improve Water Quality	Moderate		
Landscape Potential to Support Water Quality Functions	High		
Value Rating for the Water Quality Improvement	High		
Hydrologic Functions			
Site Potential to Perform Hydrologic Functions	Low		
Landscape Potential to Support Hydrologic Functions	High		
Value Rating for the Hydrologic Functions	Low		
Habitat Functions			
Site Potential to Provide Habitat	Low		
Landscape Potential to Support Habitat Functions	Moderate		
Value Rating for Habitat Functions	High		

As outlined in WCC 16.16.630, regulated wetland buffer widths are determined by the habitat function of the wetland and the land use intensity of the proposed activity. Since the project is considered a moderate intensity land use and the habitat score of Wetland 1 is 6 points, a 100-foot buffer is anticipated to be required. The project activities are entirely within the regulated buffer of Wetland 1. Wetland impacts and mitigation sequencing are discussed in the sections that follow.

Euclid Creek

Euclid Creek is located approximately 100 feet southeast of the project site. Whatcom County Fish Conservation Areas data shows Euclid Creek as having a known fish distribution, and the creek is shown as a Type F stream on the Washington State Department of Natural Resource's Forest Practices Application Mapping Tool. Per Washington Department of Fish and Wildlife Priority Habitats and Species data, Euclid Creek provides habitat for coastal cutthroat trout. Type F streams require a 100-foot buffer (WCC 16.16.740(B)(3)). The project is outside of the

regulated stream buffer and is not anticipated to result in any impacts to Euclid Creek or its associated buffer areas.

Lake Whatcom

The project site is located entirely within the shoreline jurisdiction of Lake Whatcom, a designated Shoreline of the State. Additionally, a portion of the project is within the 100-foot HCA buffer of Lake Whatcom. Permanent project impacts within the HCA buffer will be mitigated at a 1:1 ratio.

Critical Area and Buffer Impacts

Stream Buffer Impacts

As discussed previously, the project will not result in any adverse impacts to the buffer of Euclid Creek. However, mitigation activities will occur within the creek buffer, which is expected to improve buffer functioning.

Wetland and HCA Buffer Impacts

The project proposes to create approximately 590 square feet (sf) of hard surface, which is assumed to be entirely within HCA and/or wetland buffer. The proposed electrical generator and pad (approximately 480 sf) are entirely within the Wetland 1 buffer, while the electrical shelter improvements (approximately 110 sf) are within both the HCA and wetland buffers. The areas proposed to be disturbed are primarily previously disturbed areas within right-of-way that are lacking in native vegetation cover and provide minimal habitat or other supportive buffer functions. However, some native shrubs will need to be removed for construction of the electrical generator and pad. Impacts to the buffer will be mitigated by enhancing approximately 720 sf (a greater than 1:1 ratio) adjacent to and within the existing wetland. Enhancement activities will focus on removal of non-native and invasive English ivy and Himalayan blackberry and replanting with native trees and shrubs. This approach will provide a functional uplift of the existing wetland and buffer, while protecting existing native vegetation from the adverse impacts of invasive species. This approach is consistent with best available science and compatible with Lake Whatcom Watershed and recovery planning goals.

Mitigation Sequencing

Complete avoidance of impacts to the HCA and wetland buffer areas is not feasible because the existing infrastructure is located within these buffers and improvements are location dependent. The project proposes to upgrade power and controls of the Euclid Pump Station, which was originally built in the 1970s and was rehabilitated approximately 20 years ago. If the aging pump station were to fail prior to project activities, the risk of polluting Lake Whatcom with raw sewage increases, seriously affecting the environment and the 90,000 plus residents that utilize Lake Whatcom as a drinking water source. Consequently, the risk of complete avoidance is environmentally and socially more detrimental than the project itself.

During project design, efforts have been taken to minimize adverse impacts to the shoreline HCA and wetland buffer to the maximum extent practicable while still accommodating the project activities. Minimization efforts include situating site improvements as far from lake

shoreline areas as possible; reducing the size and footprint of electrical and control equipment; locating improvements in areas that have been previously disturbed; and including a retaining wall in the engine generator pad design to minimize cut and fill impacts. The on-site emergency power generator will reduce the risk of a sewage overflow into the lake. The required control and power panel addition provides a reliable, minimal, and modern design that LWWSD has standardized over the last decade. Standardizing equipment also reduces the risk of sewage overflow, because maintenance crews know how the system operates, as it is consistent with other sewer pump stations in their system.

To provide compensatory mitigation for adverse impacts to the HCA and wetland buffers, RH2 proposes to enhance the upslope Lake Whatcom shoreline within Wetland 1 and its buffer adjacent to the proposed area of impact. Mitigation includes removal of existing invasive and non-native species, and replacement with native tree and shrub species. The existing mitigation area is dominated by English ivy, which provides minimal buffer functions as related to water quality, hydrology, or habitat. Removal of invasive species is intended to facilitate establishment of denser, more diverse (vertically and horizontally) native vegetation. By planting and establishing a variety of native shrubs and trees, the mitigation area will provide greater water quality, hydrologic, and habitat functions, and better protect the existing critical area functions on the site. Establishing dense woody vegetation in place of invasive vines will increase the sediment filtering capacity of the buffer and will help slow runoff velocity, especially from the existing roadway and proposed engine generator pad. Re-establishing native vegetation will increase both cover and forage sources for wildlife. Furthermore, this functional uplift will benefit Lake Whatcom and its habitat since Wetland 1 directly outlets to the lake. The mitigation area will be monitored and maintained in accordance with County requirements, allowing for permanent establishment, and facilitating functional uplift of this site.

Construction Overview

Construction will occur from June to September, accommodating the requirements of the Lake Whatcom construction window. Construction will require adherence to a project-specific **Stormwater Pollution Prevention Plan** (SWPPP) (enclosed). Stormwater best management practices (BMPs), identified in the SWPPP, will be installed prior to construction and maintained throughout construction. Adherence with the SWPPP will be ensured via weekly inspections by LWWSD and the general contractor, and corrective actions will be taken during and following precipitation events, as needed.

The enclosed **Existing Site, TESC and Demolition Plan** shows the proposed clearing, grading, and excavation activities, and temporary erosion and sediment control (TESC) measures.

The mitigation area will be clearly staked and flagged prior to and during any site clearing and construction to ensure protection during construction. Planting will occur simultaneously with installation of the temporary irrigation system, anticipated to be an above-ground drip hose system connected to the LWWSD water system.

Equipment will be selected by the contractor but likely will include a rubber tired or low-impact track backhoe for landscape clearing and grubbing, along with hand work for the physical planting of landscape soils and plants.

Verification of plant size, quality, and quantity will be completed prior to planting. This will include proper topsoil and amendment placement, root preparation, and staking support. LWWSD will work with the general contractor to modify any plant material or soils application, as needed, to facilitate site success.

The temporary irrigation system will be verified to drip into each root well and area to be planted to ensure adequate moisture is obtained. The temporary irrigation system will be checked twice monthly in the first 2 months of operation to verify plants are receiving adequate irrigation. Nighttime irrigation is encouraged to reduce evaporation loss.

The use of heavy mulch is recommended to reduce weed growth and maintain a moisture barrier to protect the new plants. No phosphorus fertilizers will be utilized in topsoil to help protect Lake Whatcom.

Mitigation Plan

The enclosed **Mitigation Plan and Details** show the 100-foot HCA buffer (from the Lake Whatcom shoreline edge) and wetland buffer (from the approximate boundary of Wetland 1), as well as the proposed mitigation components.

Mitigation Goals and Objectives

The following goals and objectives are guiding this mitigation plan:

1) Compensate for the loss of 590 sf of low-functioning buffer areas through enhancement of approximately 720 sf of wetland and buffer (a greater than 1:1 ratio).
2) Reduce cover of existing invasive and non-native English ivy and Himalayan blackberry within the mitigation area.
3) Enhance the Lake Whatcom shoreline and overall buffer functions at the Euclid Sewer Pump Station project site by establishing native tree and shrub plantings.

Performance Measures and Standards

Performance standards are used to quantify whether the mitigation objectives are being met. Monitoring of the site will occur for a period of 3 years, unless the site meets the standards of success sooner. Performance of the site, in accordance with the below measures, will be assessed in permanent monitoring plots for the entire monitoring period.

Survival of Installed Trees and Shrubs

- Performance Measure (Year 1): There will be 100-percent survival of installed trees and shrubs. If all dead tree and shrub plantings are replaced, this performance measure will be met.
- Performance Standard (Year 3): There will be 80-percent survival of installed trees and shrubs.

Percent Cover

- Performance Measure (Year 2): Aerial cover of native woody species (planted and volunteer) will be at least 30 percent in the mitigation area.
- Performance Standard (Year 3): Aerial cover of native woody species will be at least 60 percent in the mitigation area.

Non-Native and Invasive Species

- Performance Measure (all years): County-listed Class A and B noxious weeds (listed online at the Whatcom County Noxious Weed Control Board), non-native blackberries (e.g., *Rubus armeniacus* and *R. laciniatus*), reed canarygrass (*Phalaris arundinacea*), and English ivy (*Hedera helix*) will not exceed 25 percent aerial cover at the mitigation site.
- Performance Standard (Year 3): County-listed Class A and Class B noxious weeds and non-native blackberries, reed canary grass, and English ivy will not exceed 25 percent aerial cover at the mitigation site.

Maintenance and Monitoring Program

Post-construction maintenance and monitoring will be completed annually for a minimum of 3 years. Maintenance will be performed at least twice yearly, preferably in the spring and late summer/early fall.

Post-Construction Maintenance

Maintenance shall occur twice yearly in the April and October timeframe. During each maintenance site visit, the following activities shall be performed:

- Remove all non-native, invasive, and noxious vegetation, including ivy and blackberry. Remove above-ground plant parts and root masses. All removal of vegetation is to be completed manually or using light-duty mechanized equipment (i.e., mowing or a weed whacker) without the use of herbicides. Protect all mitigation plantings during invasive species removal. All removed plant parts shall be taken from the mitigation area and disposed offsite.
- Remove all litter and garbage from the mitigation area, including failed or no longer functioning TESC measures, tree staking, etc.
- Replace damaged or missing structures, such as tree staking, tree protectors, etc.
- Replace/augment mulch to maintain a minimum 4-inch height and 3-foot diameter around all plantings.
- Replant uprooted plants, right leaning plants, and generally care for struggling plants.
- Replace dead plant material. Replacement plantings shall be in-kind unless otherwise specified during monitoring efforts or by the County. Install replacement plantings within 30 days of discovery, but preferably during the dormant period.
- Inspect the operation of temporary irrigation and replace components, as needed. Temporary irrigation is anticipated to be removed after 3 years.

- Inspect protective polypropylene fencing and repair, as needed. Protective fencing is anticipated to be removed after 3 years. construction

Due to the proximity to sensitive areas, the following normal maintenance activities shall be carefully completed:

- Only approved organic fertilizers applied directly to planting wells (not aerially) are permissible, if necessary. Fertilizers, if used, shall be phosphorus free to comply with County protection guidance for Lake Whatcom.
- Only approved aquatic herbicides are permissible, if necessary. Aquatic herbicides may be necessary for the control of blackberry, ivy, or other invasive species on site; however, this method should be used only as a last resort following other methods and should be completed under the care and direction of a licensed herbicide applicator.
- No dumping is allowed in the mitigation area. All materials used or removed during maintenance activities shall be disposed offsite.
- Signage to be installed according to approved site plans

Mitigation Monitoring

Monitoring will begin the first growing season following installation approval and shall continue for a period of 3 5 years. Monitoring activities shall occur annually, preferably in the spring, to allow for reporting to occur in the summer, followed by fall maintenance activities. The results of the monitoring activities shall be communicated to the County via an annual report. Proposed monitoring methods will include the following activities:

- At the first monitoring site visit, flag mitigation plants for future identification and count plants to ensure consistency with the approved Mitigation Plan. Note plant conditions (i.e., alive/flourishing, damaged/sickly, dead/dying).
- Visually record mitigation site progress. Establish at least two photopoint locations to capture the entire mitigation area. Collect a minimum of two photos per photopoint during each monitoring site visit. Include photos with monitoring reports. Record photopoint locations on a monitoring plan map included with monitoring reports.
- Report on plant survival, diversity, vigor, aerial coverage, etc. Reporting shall be completed to detail the mitigation site's success in general, as well as to assess the site's success in meeting the performance measures and standards.
- Establish and stake for continued monitoring at least two 50-foot transects to assess percent cover of plants in the mitigation area. Include mitigation plantings, native and non-native recruitments, and invasive species in aerial cover calculations. Percent cover calculations will be reported, along with associated data forms, in monitoring reports.
- Report on noxious and invasive species control and provide recommendations for continued maintenance activities specific to such species, especially ivy and blackberry.
- Report on any dead or dying specimens and provide recommendations for replacement, as necessary. Replace all dead plant material within 30 days of discovery.
- Report on site hydrology, including extent of inundation and saturation in the mitigation area.

If any of the standards of success are not being met, LWWSD shall be notified within the monitoring reports and provided with a list of applicable activities to bring the site into compliance.

Contingencies

A contingency plan involves identifying areas of failure of the mitigation plan and outlining corrective actions that could be taken. If monitoring results indicate that any of the performance standards are not being met, it may be necessary to implement all or part of the contingency plan. Careful attention to maintenance and establishment of replacement plantings is essential to ensuring that problems do not arise. Should any part of the mitigation site fail to meet the criteria for success, a contingency plan will be developed on a case-by-case basis to address the problem at hand. Contingency plans shall be approved by and implemented with oversight from LWWSD and the County. Contingency activities may include, but are not limited to, the following:

- Replace plants lost to vandalism, drought, disease, or pest infestation, as necessary, to satisfy performance measures and standards.
- If percent cover standards are failing to be met, specifically with respect to invasive and non-native species, increase maintenance to monthly during the growing season (April to October) and every two months from November to March.
- If plantings show signs of damage from humans, temporary fencing will be installed to protect the area from trespass until the plants are established. This may include welded wire mesh fence fabric and steel fence post stakes driven into the ground.
- Should a particular plant species continue to fail on the site (15-percent mortality rate or greater), replace with a similar, native species that would be better suited to site conditions.
- Should a particular woody plant species become a nuisance on the site (i.e., establishing over 70 percent aerial cover in any one plant community), measures shall be taken to selectively trim or remove individual species.
- If monitoring determines that blackberry, ivy, or another non-native or invasive plant species continues to be or becomes a nuisance on the site (i.e., interfering with the establishment of mitigation plantings and/or exceeding the performance measures for invasive species), measures shall be taken to control and remove these species. Methods can include manual, mechanical, or chemical means, so long as they are pre-approved by the County and conducted using environmentally conscious and licensed methods.
- Adjust supplemental irrigation and timing as needed to suit mitigation plantings, (i.e., if plants appear dry in the supplemental watering phase despite prescribed watering, increase watering to accommodate plant needs).
- Seed or reseed areas with approved, native grass mixture, as necessary, if erosion/sedimentation occurs in one area.

Evaluation of Potential Adverse Impacts on Adjacent Property Owners

No adverse effects to adjacent property owners are anticipated as the result of the proposed mitigation project.

Other Permits

The Euclid Sewer Pump Station will require a County Revocable Encroachment Permit, Commercial Building Permit, and Shoreline Substantial Development Permit. Application for these permits is anticipated to be submitted concurrently with this letter report in July 2019.

Conclusion

This document is intended for review by the County to inform them of the existing conditions associated with HCA and wetland buffers at the Euclid Sewer Pump Station, anticipated project impacts, and proposed mitigation. This letter report has been prepared to comply with the current laws regulating critical areas and associated buffers. The work completed in preparing this letter report has conformed to the standard of care employed by 'qualified professionals' as described in Whatcom County Code Chapter 16.16, Critical Areas Regulations. No other representation or warranty is made or implied. RH2 appreciates the opportunity to assist LWWSD and the County on this project. Should you have any additional needs, please contact me at (425) 951-5436 or apettibone@rh2.com, or RH2's Project Manager, Dan Burwell, at (360) 684-1548 or dburwell@rh2.com.

Sincerely,

RH2 ENGINEERING, INC.

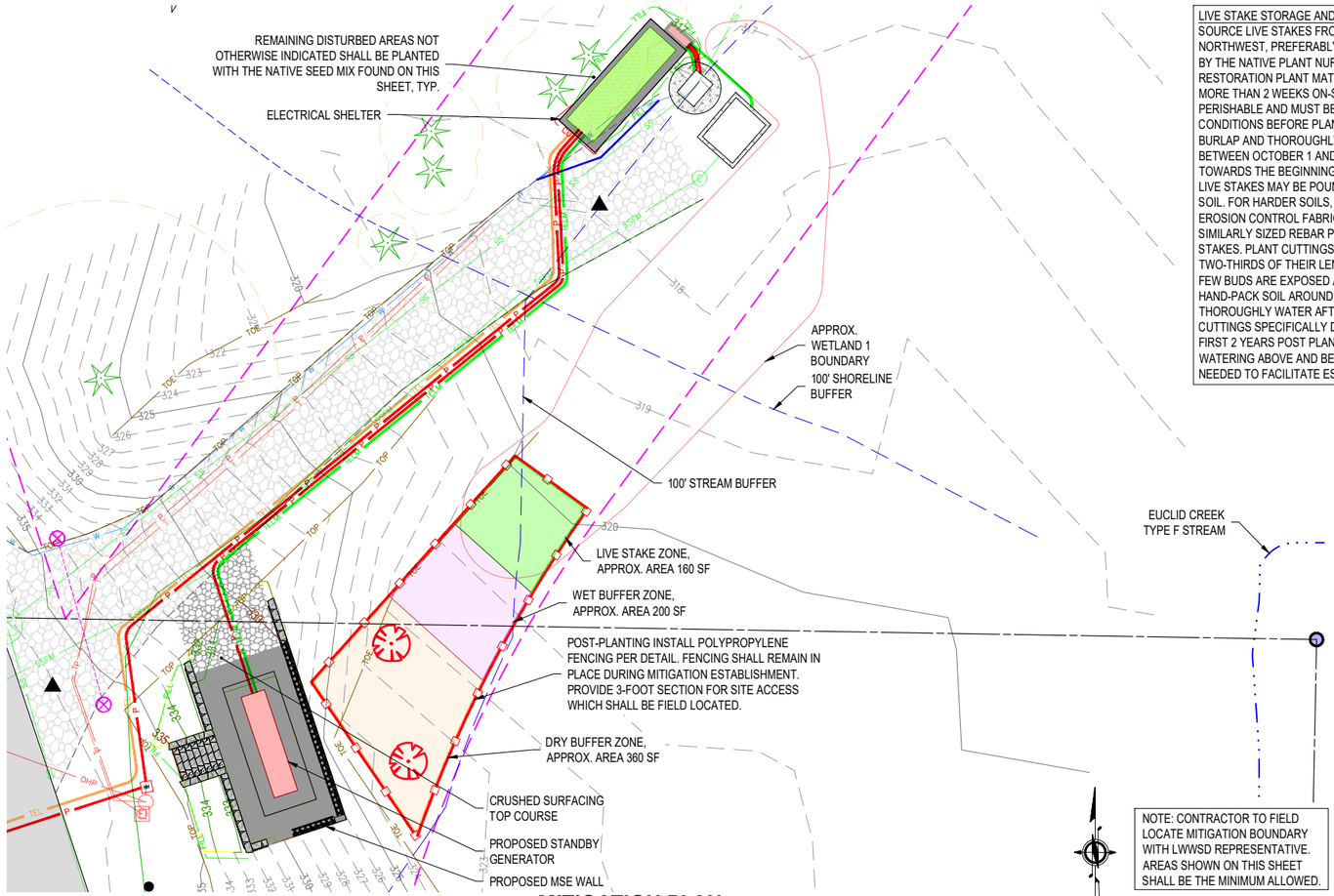


Alicia Pettibone

Environmental Scientist

EC/AP/JM/sp

Enclosures: Site Photographs
Euclid Mitigation Plan and Planting Details and Notes
Euclid Existing Site, Demolition, and TESC Plan
SWPPP
Rating Forms and Data
Qualified Professional Letter

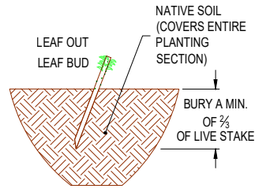


MITIGATION PLAN

1" = 10'

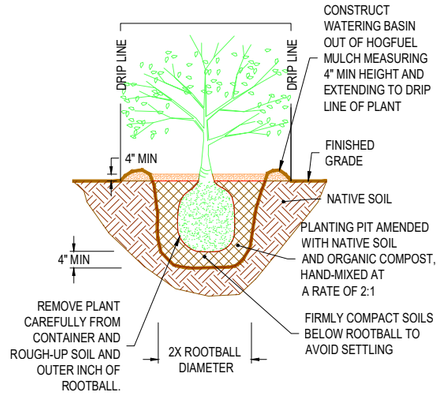
NOTE: CONTRACTOR TO FIELD LOCATE MITIGATION BOUNDARY WITH LWWSD REPRESENTATIVE. AREAS SHOWN ON THIS SHEET SHALL BE THE MINIMUM ALLOWED.

LIVE STAKE STORAGE AND PLANTING NOTES:
SOURCE LIVE STAKES FROM SITES NATIVE TO THE PACIFIC NORTHWEST, PREFERABLY FROM ESTABLISHED SITES IN USE BY THE NATIVE PLANT NURSERY SUPPLYING SPECIFIED RESTORATION PLANT MATERIAL. STORE LIVE STAKES FOR NO MORE THAN 2 WEEKS ON-SITE. LIVE STAKES ARE HIGHLY PERISHABLE AND MUST BE STORED IN SHADED, COOL, MOIST CONDITIONS BEFORE PLANTING. STORE STAKES WRAPPED IN BURLAP AND THOROUGHLY WET DAILY. PLANT LIVE STAKES BETWEEN OCTOBER 1 AND MARCH 15, PREFERABLY TOWARDS THE BEGINNING OF THIS WINDOW.
LIVE STAKES MAY BE POUNDED DIRECTLY INTO VERY SOFT SOIL. FOR HARDER SOILS, OR INSTALLATION THROUGH EROSION CONTROL FABRIC, DIG A PILOT HOLE WITH SIMILARLY SIZED REBAR PRIOR TO POUNDING IN LIVE STAKES. PLANT CUTTINGS SO AT LEAST HALF TO TWO-THIRDS OF THEIR LENGTH IS BURIED IN SOIL; ENSURE A FEW BUDS ARE EXPOSED ABOVE THE SOIL SURFACE. HAND-PACK SOIL AROUND CUTTINGS AFTER PLANTING. THOROUGHLY WATER AFTER INSTALLATION, AND MONITOR CUTTINGS SPECIFICALLY DURING SUMMER MONTHS IN THE FIRST 2 YEARS POST PLANTING. PROVIDE SUPPLEMENTAL WATERING ABOVE AND BEYOND IRRIGATION SPECIFIED, AS NEEDED TO FACILITATE ESTABLISHMENT OF LIVE STAKES.



LIVE STAKE OR POLE PLANTING DETAIL

NOT TO SCALE



SHRUB PLANTING DETAIL

NOT TO SCALE

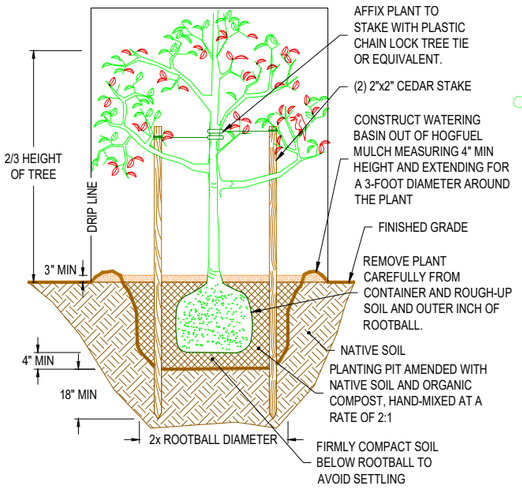
MITIGATION AREA (~720 SF)

SYMBOL	COMMON NAME	SCIENTIFIC NAME	QTY	SIZE	SPACING DIAMETER	PLANT INDICATOR	HEIGHT AT MATURITY	PLANTING NOTES
SHRUBS								
LIVE STAKE ZONE	REDSTEM DOGWOOD	*CORNUS SERICEA*	20	LIVE STAKE (3/4-1 ½ INCH DIAMETER, 3-5 FEET LONG)	2 FT O.C.	FACW	UP TO 20'	PLANT IN LIVE STAKE ZONE SHOWN (~160 SF) PER THE PLANTING NOTES AND DETAILS ON DWG NO. L01 AND L02.
	SITKA WILLOW	*SALIX SITCHENSIS*	20			FACW	UP TO 24'	
WET BUFFER ZONE	BLACK TWINBERRY	*LONICERA INVOLUCRATA*	4	1 GALLON CONTAINER (10" MIN. HEIGHT)	4 FT O.C.	FAC	UP TO 10'	PLANT IN CLUSTERS OF 3-5 IN WET BUFFER ZONE (~200 SF), PER THE PLANTING NOTES AND THE DETAILS ON DWG NO. L01 AND L02.
	NOOTKA ROSE	*ROSA NUTKANA*	4			FAC	6-10'	
	PACIFIC NINEBARK	*PHYSOCARPUS CAPITATUS*	4			FAC	UP TO 12'	
DRY BUFFER ZONE	BEAKED HAZLENUT	*CORYLUS CORNUTA*	7			FACU	4-12'	PLANT IN CLUSTERS OF 3-5 IN DRY BUFFER ZONE (~360 SF), PER THE PLANTING NOTES AND THE DETAILS ON DWG NO. L01 AND L02.
	OCEANSPRAY	*HOLODISCUS DISCOLOR*	7			FACU	12-15'	
	TALL OREGON GRAPE	*MAHONIA AQUIFOLIUM*	7			FACU	4-8'	
TREES								
	CASCARA	*FRANGULA PURSHIANA*	2	24" MIN. HEIGHT (1 GALLON CONTAINER OR EQUIV.)	15 FT O.C.	FAC	25-30'	PLANT IN LOCATIONS SHOWN PER THE PLANTING NOTES AND DETAILS ON DWG NO. L01 AND L02

NATIVE SEED MIX (~426 SF)

COMMON NAME	SCIENTIFIC NAME	PLANT INDICATOR	PERCENT BY WEIGHT	PERCENT PURITY	PERCENT GERMINATION	PLANTING NOTES
BLUE WILDRYE	*ELYMUS GLAUCUS*	FACU	30%	90%	85%	INERT/OTHER CROP: 2.5% MAX WEED SEED: 0.50% MAX NO NOXIOUS WEEDS ALLOWED IN SEED NO FERTILIZER ALLOWED IN SEED SEED AT 30 PLS LBS/ACRE ADD NATURAL WOOD FIBER MULCH TO SEED MIX AT 35 LBS/ACRE
TUFTED HAIRGRASS	*DESCHAMPSIA CAESPITOSA*	FACW	30%	90%	85%	
NATIVE RED FESCUE	*FESTUCA RUBRA*	FAC	30%	90%	85%	
REDTOP BENTGRASS	*AGROSTIS GIGANTEA*	FAC	10%	90%	85%	

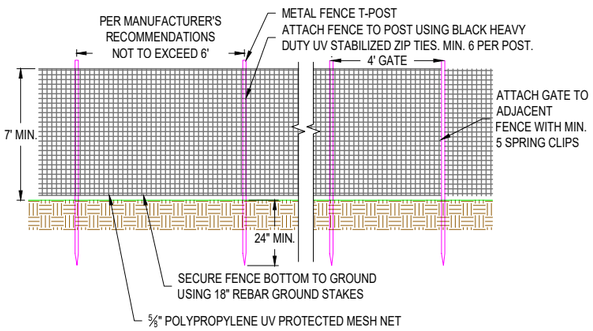
SEED MIX SPECIFIED IS THE NATIVE EROSION CONTROL MIX FROM DIRECT SEED SALES. CONTRACTOR TO USE THIS MIX OR EQUIVALENT. ALL AREAS DISTURBED BY CONSTRUCTION NOT SPECIFICALLY SHOWN TO BE PLANTED SHALL BE SEEDED PER THE ABOVE MIX AND PLANTING DETAILS ON DWG. NO. L01.



DECIDUOUS TREE PLANTING DETAIL

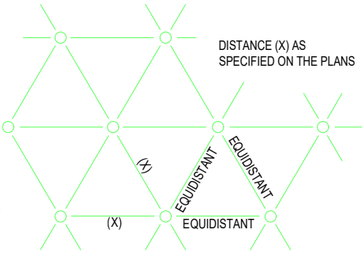
NOT TO SCALE

POLYPROPYLENE FENCE CONSTRUCTION NOTES:
1. DO NOT NAIL OR STAPLE FENCE TO TREES.
2. INSTALL TO RESTRICT WILDLIFE FROM MITIGATION AREA.
3. FIELD LOCATE SINGLE GATE WITH LWWSD REPRESENTATIVE.



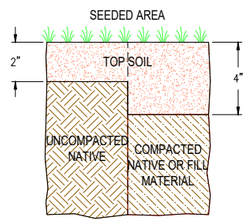
POLYPROPYLENE FENCING

NOT TO SCALE



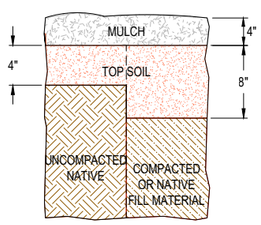
PLANTING PATTERN FOR SHRUBS

NOT TO SCALE



TOPSOIL REQUIREMENTS FOR SEEDED AREA

NOT TO SCALE



TOPSOIL REQUIREMENTS FOR MITIGATION AREA

NOT TO SCALE

RH2

RICHARD L. BALLARD — STATE OF WASHINGTON — 52878 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 01/03/2022

DANIEL W. BURWELL — STATE OF WASHINGTON — 38306 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 01/03/2022

LAKE WHATCOM WATER AND SEWER DISTRICT
EUCLID SEWER PUMP STATION

MITIGATION PLAN & DETAILS

NO.	DATE	DESCRIPTION	BY
	12/06/19	WHATCOM COUNTY CRITICAL AREAS REVIEW COMPLETE	DWB

REVISIONS

ENGINEER: OMP
REVIEWED: DWB
DATE: Jan 3, 2022
PLOT DATE: Jan 3, 2022
CLIENT: LWWSD
FILENAME: EUCL-D-PLANT.DWG
JOB NO.: 418.097

SCALE: SHOWN
2" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: L01
SHEET NO.: 9
27

PLANTING NOTES

GENERAL PLANTING NOTES:

ALL AREAS DISTURBED BY CONSTRUCTION, INCLUDING THE DISTURBED EUCLID PUMP STATION IMPROVEMENTS AREAS AND THE MITIGATION AREA, SHALL BE REVEGETATED. DISTURBED AREAS OF THE SITE (BOTH SHOWN AND THOSE INADVERTENTLY DISTURBED VIA CONSTRUCTION THAT ARE NOT SPECIFICALLY SHOWN) SHALL BE SEEDED WITH THE SPECIFIED NATIVE SEED MIX. THE MITIGATION AREA SHALL BE PLANTED PER THE PLANTING LEGEND, AND MEDIUM BARK MULCH APPLIED OVER THE ENTIRE AREA FOR GROUNDCOVER AS DETAILED.

PLANTING AND INVASIVE SPECIES REMOVAL SHALL BE COMPLETED BY A LANDSCAPE CONTRACTOR WITH AT LEAST 5 YEARS OF EXPERIENCE IN NATIVE PLANT AND SENSITIVE AREAS RESTORATION. INVASIVE SPECIES REMOVAL AND TREATMENT SHALL ALSO BE COMPLETED BY A LANDSCAPE CONTRACTOR LICENSED AND EXPERIENCED IN THE LATEST TREATMENT METHODOLOGY. PLANTING SHALL OCCUR BETWEEN SEPTEMBER 15 AND SEPTEMBER 30.

THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING A PRE-PLANTING MEETING, SUCCESSFUL PLANT AND IRRIGATION SYSTEM INSTALLATION, LWWSD ACCEPTANCE POST-PLANTING, AND CARE OF THE SITE FOR A ONE-YEAR PLANT ESTABLISHMENT PERIOD TO START AT PROJECT FINAL COMPLETION. FOLLOWING THE PLANT ESTABLISHMENT PERIOD, LWWSD WILL ASSUME CARE OF THE SITE FROM THE BEGINNING OF YEAR 2 TO THE END OF YEAR 3 (AS REQUIRED BY WHATCOM COUNTY).

MITIGATION SEQUENCING:

MITIGATION SHALL BE COMPLETED IN THE FOLLOWING SEQUENCE:

1. THE CONTRACTOR SHALL SECURE ALL PLANT MATERIAL AND SOILS PRIOR TO BEGINNING WORK ON THE MITIGATION PLAN. SUBMIT BID NURSERY SHEET AND SOIL SPECIFICATION SHEETS TO LWWSD FOR APPROVAL.

2. THE CONTRACTOR SHALL NOTIFY LWWSD 48 HOURS IN ADVANCE OF ANTICIPATED MITIGATION ACTIVITIES. A MEETING SHALL BE HELD ON-SITE PRIOR TO COMMENCEMENT OF MITIGATION ACTIVITIES AND WILL INCLUDE THE CONSULTING ENGINEER, CONTRACTOR, AND LWWSD INSPECTOR. THE APPROVED PLANS, SPECIFICATIONS, AND PERMIT CONDITIONS WILL BE REVIEWED TO ENSURE THAT ALL PARTIES INVOLVED UNDERSTAND THE INTENT OF THE CONSTRUCTION DOCUMENTS, SPECIFICATIONS, SITE ENVIRONMENTAL CONSTRAINTS, SEQUENCES, AND INSPECTION REQUIREMENTS.

3. RETAIN ALL HEALTHY, NATIVE TREES AND SHRUBS AS SHOWN ON DWG NO. C01. VEGETATION TO BE RETAINED SHALL BE PROTECTED FROM REMOVAL, TRAMPLING, OR OTHER IMPACTS DURING CONSTRUCTION. CLEAR ENGLISH IVY, HIMALAYAN BLACKBERRYAND OTHER INVASIVE PLANT SPECIES IN THE MITIGATION AREA. REMOVE ABOVEGROUND PLANT PARTS AND ROOT MASS AND DISPOSE OFFSITE. CONTRACTOR SHALL NOT USE MECHANIZED EQUIPMENT IN THE WETLAND AREA AND SHALL AVOID THE USE OF MECHANIZED EQUIPMENT WITHIN THE WETLAND BUFFER TO THE EXTENT PRACTICABLE.

4. FOLLOWING CLEARING AND GRUBBING, AUGMENT SOILS WITH TOPSOIL TO RESTORE THE ELEVATION TO PRE-EXISTING GRADE. VERIFY GRADE IS ADEQUATE WITH THE LWWSD INSPECTOR PRIOR TO IRRIGATION SYSTEM INSTALLATION OR PLANTING.

5. INSTALL TOPSOIL IN AREAS TO BE PLANTED ACCORDING TO THE PLANTING DETAIL, TILLING TOPSOIL INTO THE UPPER 4 INCHES OF NATIVE SOILS.

6. INSTALL ABOVEGROUND IRRIGATION SYSTEM AND ENSURE IT IS FULLY FUNCTIONAL PRIOR TO PLANT INSTALLATION.

7. CONTRACTOR SHALL INSTALL PLANT MATERIAL USING THE SPECIFIED PLANTS AND PLANTING DETAILS. PLANTING SHALL BE COMPLETED BY HAND, PER THE ONSITE DIRECTION OF THE CONSULTING ENGINEER OR LWWSD INSPECTOR. ANY DEVIATIONS FROM THE PLANTING PLAN MUST BE APPROVED BY LWWSD PRIOR TO INSTALLATION.

   ALL PLANTINGS SHALL BE THOROUGHLY WATERED FOLLOWING INSTALLATION. WATER PLANTS NO LESS THAN TWICE A WEEK FOR 15 MINUTES DURING THE FIRST WEEK OF INSTALLATION. WATERING SHALL CONTINUE AT A RATE SUFFICIENT TO ENSURE PLANTINGS BECOME ESTABLISHED UNTIL FALL RAINS CAN PROVIDE SUFFICIENT WATER FOR NEW PLANTINGS.

   INSTALL BARK MULCH OVER ENTIRE WETLAND BUFFER MITIGATION AREA, MEASURING 4 INCHES TALL FOLLOWING PLANT INSTALLATION. FORM MULCH WATERING BASINS AROUND PLANTED VEGETATION AS SHOWN IN PLANTING DETAILS.

   ONLY STAKE THOSE PLANTS THAT CANNOT STAND ALONE IN MODERATE WIND CONDITIONS. AFFIX PLANTS TO STAKES AS LOW AS POSSIBLE ON TRUNKS TO PREVENT TRUNK DAMAGE AND ENCOURAGE PLANTS TO SUPPORT THEMSELVES. DO NOT BRACE PLANTS TOO TIGHTLY. CONTRACTOR SHALL REMOVE ALL STAKING WITHIN 1 YEAR OF INSTALLATION.

   THE CONTRACTOR SHALL LABEL INSTALLED PLANTINGS WITH METAL IDENTIFICATION TAGS, OR THE EQUIVALENT. ONE IN FOUR OF EACH PLANT SPECIES SHALL BE LABELED THROUGHOUT THE MITIGATION AREA.

8. SEED ALL AREAS DISTURBED BY CONSTRUCTION, AND NOT SPECIFICALLY SHOWN TO BE PLANTED, USING THE SPECIFIED SEED MIX.

9. THE CONTRACTOR SHALL INSTALL POLYPROPYLENE FENCING TO PROTECT MITIGATION PLANTINGS FROM DAMAGE BY WILDLIFE, AS SHOWN ON DWG NO. L01.

10. THE CONTRACTOR SHALL NOTIFY LWWSD UPON COMPLETION OF PLANT INSTALLATION TO ARRANGE FOR AN INSPECTION OF THE MITIGATION AREA. ANY CORRECTIONS, SUBSTITUTIONS OR MISSING ITEMS WILL BE ADDRESSED IN WRITING TO THE CONTRACTOR ALONG WITH A SCHEDULE TO ADDRESS THOSE ITEMS.

11. THE CONTRACTOR SHALL WARRANT ALL PLANT MATERIAL TO REMAIN HEALTHY AND ALIVE AND SHALL MAINTAIN THE SITE IN ACCORDANCE WITH THE APPROVED PLANS, SPECIFICATIONS, AND PERMIT CONDITIONS FOR THE 1 YEAR PLANT ESTABLISHMENT PERIOD. DURING THIS PERIOD, THE CONTRACTOR SHALL ENSURE MAINTENANCE ACTIVITIES ARE CARRIED OUT PER THE MAINTENANCE PLAN. FOLLOWING THE INITIAL 1 YEAR PLANT ESTABLISHMENT PERIOD, LWWSD WILL ASSUME RESPONSIBILITY FOR SITE MAINTENANCE.

IRRIGATION:

THE CONTRACTOR SHALL IRRIGATE LANDSCAPED AREAS. IRRIGATION SYSTEM SHALL BE A SERIES OF ABOVEGROUND DRIP HOSES SPREAD THROUGHOUT THE MITIGATION AREA CONNECTED TO THE LWWSD SERVICE LINE. CONTRACTOR SHALL DESIGN IRRIGATION SYSTEM TO INCLUDE AUTOMATIC CONTROLLER. PROVIDE AND INSTALL A METER AND BOX PER OWNER STANDARD DETAILS AHEAD OF THE IRRIGATION CONNECTION. LWWSD WILL PAY FOR WATER USE. AFTER INSTALLATION THE CONTRACTOR SHALL TEST IRRIGATION SYSTEM OVER A PERIOD OF TWO (2) DAYS TO ENSURE IT IS PROPERLY FUNCTIONING, TO BE APPROVED BY LWWSD. THE IRRIGATION SYSTEM WILL PROVIDE SUPPLEMENTAL WATERING REQUIREMENTS FOR NEWLY INSTALLED VEGETATION AND DURING THE DRY SEASON (JULY 1ST THROUGH OCTOBER 15TH) FOR A MINIMUM OF 2 YEARS FOLLOWING INSTALLATION. TREES SHALL RECEIVE A MINIMUM OF 2 INCHES OF WATER PER WEEK AND SHRUBS SHALL RECEIVE A MINIMUM OF 1 INCH OF WATER PER WEEK. AT A MINIMUM, WATER SHALL BE SUPPLIED TO NEW PLANTINGS IN THE DRY SEASON, BUT MAY ALSO BE SUPPLIED THROUGHOUT THE YEAR AS NEEDED BASED ON WEATHER CONDITIONS. APPLICATION RATES MAY NEED TO BE ADJUSTED TO MATCH ON-SITE PLANTING NEEDS AND THE CONTRACTOR SHALL WORK WITH LWWSDTO MODIFY RATES AS NEEDED. LWWSD WILL ASSUME OPERATION OF THE IRRIGATION SYSTEM FOLLOWING THE FIRST YEAR OF THE PLANT ESTABLISHMENT PERIOD.

MITIGATION GOALS AND PERFORMANCE STANDARDS:

THE MITIGATION AREAS HAVE BEEN DESIGNED TO FULFILL WHATCOM COUNTY SHORELINE PERMITTING REQUIREMENTS AS RELATED TO CRITICAL AREAS FOR PROJECT IMPROVEMENTS AT THIS SITE. CONSEQUENTLY, SEVERAL MITIGATION GOALS ARE GUIDING THESE EFFORTS. SUCCESS OF THE SITE IN MEETING THESE GOALS SHALL BE COMPLETED VIA MONITORING EFFORTS, AND MEASUREMENT AGAINST THE APPROVED PERFORMANCE MEASURES AND STANDARDS. TO ENSURE SUCCESS OF THE SITE, MITIGATION MONITORING AND SITE MAINTENANCE IS REQUIRED FOR A PERIOD OF 3 YEARS FOLLOWING SITE ACCEPTANCE. THESE EFFORTS HAVE BEEN DETAILED IN THE EXISTING CONDITIONS REPORT AND MITIGATION PLAN, DATED JULY 2019. THE LANDSCAPE CONTRACTOR WILL COMPLETE MAINTENANCE AS OUTLINED IN THE MAINTENANCE PROGRAM FOR THE FIRST YEAR AFTER FINAL COMPLETION, AFTER WHICH TIME, LWWSD OR ITS ASSIGNS WILL ASSUME MAINTENANCE ACTIVITIES, MONITORING EFFORTS AND REPORTING.

MAINTENANCE:

MAINTENANCE WILL BE PERFORMED AT LEAST TWO TIMES PER YEAR, PREFERABLY IN THE SPRING AND LATE SUMMER/EARLY FALL. THE CONTRACTOR WILL BE RESPONSIBLE FOR PERFORMING TWO MAINTENANCE PERIODS WITHIN THE FIRST YEAR, AFTER WHICH TIME, LWWSD OR ITS ASSIGNS WILL ASSUME MAINTENANCE ACTIVITIES.

MAINTENANCE SHALL OCCUR TWICE YEARLY IN THE APRIL AND OCTOBER TIMEFRAME. DURING EACH MAINTENANCE SITE VISIT, THE FOLLOWING ACTIVITIES SHALL BE PERFORMED.

- REMOVE ALL NON-NATIVE, INVASIVE, AND NOXIOUS VEGETATION, ESPECIALLY ENGLISH IVY AND HIMALAYAN BLACKBERRY. REMOVE ABOVEGROUND PLANT PARTS AND ROOT MASSES. ALL REMOVAL OF VEGETATION IS TO BE COMPLETED MANUALLY OR USING LIGHT-DUTY MECHANIZED EQUIPMENT (I.E., MOWING OR A WEED WHACKER) WITHOUT THE USE OF HERBICIDES. PROTECT ALL MITIGATION PLANTINGS DURING INVASIVE SPECIES REMOVAL. ALL REMOVED PLANT PARTS SHALL BE TAKEN FROM THE MITIGATION AREA AND DISPOSED OFFSITE.
- REMOVE ALL LITTER AND GARBAGE FROM THE MITIGATION AREA, INCLUDING FAILED OR NO-LONGER-FUNCTIONING TESC MEASURES, TREE STAKING, ETC.
- REPLACE DAMAGED OR MISSING STRUCTURES, SUCH AS TREE STAKING, TREE PROTECTORS, ETC.
- REPLACE/AUGMENT MULCH TO MAINTAIN A MINIMUM 4-INCH HEIGHT AND 3-FOOT DIAMETER AROUND ALL PLANTINGS.
- REPLANT UPROOTED PLANTS, RIGHT LEANING PLANTS, AND GENERALLY CARE FOR STRUGGLING PLANTS.
- REPLACE DEAD PLANT MATERIAL. REPLACEMENT PLANTINGS SHALL BE IN-KIND UNLESS OTHERWISE SPECIFIED DURING MONITORING EFFORTS OR BY THE COUNTY. INSTALL REPLACEMENT PLANTINGS WITHIN 30 DAYS OF DISCOVERY, BUT PREFERABLY DURING THE DORMANT PERIOD.
- INSPECT THE OPERATION OF TEMPORARY IRRIGATION AND REPLACE COMPONENTS, AS NEEDED. TEMPORARY IRRIGATION IS ANTICIPATED TO BE REMOVED AFTER 3 YEARS BY LWWSD.
- INSPECT PROTECTIVE POLYPROPYLENE FENCING AND REPAIR, AS NEEDED. PROTECTIVE FENCING IS ANTICIPATED TO BE REMOVED AFTER 3 YEARS.

DUE TO THE PROXIMITY TO SENSITIVE AREAS, THE FOLLOWING NORMAL MAINTENANCE ACTIVITIES SHALL BE CAREFULLY COMPLETED.

- ONLY APPROVED ORGANIC FERTILIZERS APPLIED DIRECTLY TO PLANTING WELLS (NOT AERIALLY) ARE PERMISSIBLE, IF NECESSARY.
- ONLY APPROVED AQUATIC HERBICIDES ARE PERMISSIBLE, IF NECESSARY. AQUATIC HERBICIDES MAY BE NECESSARY FOR THE CONTROL OF BLACKBERRY, IVY, OR OTHER INVASIVE SPECIES ONSITE; HOWEVER, THIS METHOD SHOULD BE USED ONLY AS A LAST RESORT FOLLOWING OTHER METHODS, AND SHOULD BE COMPLETED UNDER THE CARE AND DIRECTION OF A LICENSED HERBICIDE APPLICATOR.
- NO DUMPING IS ALLOWED IN THE MITIGATION AREA. ALL MATERIALS USED OR REMOVED DURING MAINTENANCE ACTIVITIES SHALL BE DISPOSED OFFSITE.

MONITORING:

MONITORING WILL BE COMPLETED BY LWWSD OR ITS ASSIGNS. MONITORING WILL BEGIN THE FIRST GROWING SEASON FOLLOWING INSTALLATION APPROVAL AND SHALL CONTINUE FOR A PERIOD OF 3 YEARS. MONITORING ACTIVITIES SHALL OCCUR ANNUALLY, PREFERABLY IN THE SPRING, TO ALLOW FOR REPORTING AND MAINTENANCE ACTIVITIES TO OCCUR IN THE SUMMER. THE RESULTS OF THE MONITORING ACTIVITIES SHALL BE COMMUNICATED TO THE COUNTY VIA AN ANNUAL REPORT. PROPOSED MONITORING METHODS WILL INCLUDE THE FOLLOWING ACTIVITIES.

- AT THE FIRST MONITORING SITE VISIT, FLAG MITIGATION PLANTS FOR FUTURE IDENTIFICATION AND COUNT PLANTS TO ENSURE CONSISTENCY WITH THE APPROVED MITIGATION PLAN. NOTE PLANT CONDITIONS (I.E., ALIVE/FLOURISHING, DAMAGED/SICKLY, DEAD/DYING).
- VISUALLY RECORD MITIGATION SITE PROGRESS. ESTABLISH TWO PHOTOPOINT LOCATIONS TO CAPTURE THE ENTIRE MITIGATION AREA. COLLECT A MINIMUM OF TWO PHOTOS PER PHOTOPOINT DURING EACH MONITORING SITE VISIT. INCLUDE PHOTOS WITH MONITORING REPORTS. RECORD PHOTOPOINT LOCATIONS ON A MONITORING PLAN MAP INCLUDED WITH MONITORING REPORTS.
- REPORT ON PLANT SURVIVAL, DIVERSITY, VIGOR, AERIAL COVERAGE, ETC. REPORTING SHALL BE COMPLETED TO DETAIL THE MITIGATION SITE'S SUCCESS IN GENERAL, AS WELL AS TO ASSESS THE SITE'S SUCCESS IN MEETING THE PERFORMANCE MEASURES AND STANDARDS.
- ESTABLISH AND STAKE FOR CONTINUED MONITORING AT LEAST TWO 50-FOOT TRANSECTS TO ASSESS PERCENT COVER OF PLANTS IN THE MITIGATION AREA. INCLUDE MITIGATION PLANTINGS, NATIVE AND NON-NATIVE RECRUITMENTS, AND INVASIVE SPECIES IN AERIAL COVER CALCULATIONS. PERCENT COVER CALCULATIONS WILL BE REPORTED, ALONG WITH ASSOCIATED DATA FORMS, IN MONITORING REPORTS.
- REPORT ON NOXIOUS AND INVASIVE SPECIES CONTROL AND PROVIDE RECOMMENDATIONS FOR CONTINUED MAINTENANCE ACTIVITIES SPECIFIC TO SUCH SPECIES, ESPECIALLY IVY.
- REPORT ON ANY DEAD OR DYING SPECIMENS AND PROVIDE RECOMMENDATIONS FOR REPLACEMENT, AS NECESSARY. REPLACE ALL DEAD PLANT MATERIAL WITHIN 30 DAYS OF DISCOVERY.
- REPORT ON SITE HYDROLOGY, INCLUDING EXTENT OF INUNDATION AND SATURATION IN THE MITIGATION AREA.

IF ANY OF THE STANDARDS OF SUCCESS ARE NOT BEING MET, LWWSD SHALL BE NOTIFIED WITHIN THE MONITORING REPORTS AND PROVIDED WITH A LIST OF APPLICABLE ACTIVITIES TO BRING THE SITE INTO COMPLIANCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE REQUIREMENTS FROM THE FIRST YEAR MONITORING REPORT ONLY. LWWSD WILL COMPLETE SUBSEQUENT MAINTENANCE.

CONTINGENCIES

A CONTINGENCY PLAN INVOLVES IDENTIFYING AREAS OF FAILURE OF THE MITIGATION PLAN AND OUTLINING CORRECTIVE ACTIONS THAT COULD BE TAKEN. IF MONITORING RESULTS INDICATE THAT ANY OF THE PERFORMANCE STANDARDS ARE NOT BEING MET, IT MAY BE NECESSARY TO IMPLEMENT ALL OR PART OF THE CONTINGENCY PLAN. REFER TO THE EXISTING CONDITIONS REPORT AND MITIGATION PLAN, DATED JULY 2019, FOR CONTINGENCY PLAN INSTRUCTIONS, AS NEEDED.

RH2

RICHARD L. BALLARD — STATE OF WASHINGTON — 52878 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 01/03/2022

DANIEL W. BROWN — STATE OF WASHINGTON — 38306 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 01/03/2022

LAKE WHATCOM WATER AND SEWER DISTRICT

EUCLID SEWER PUMP STATION

MITIGATION PLAN NOTES

ENGINEER: OMP
REVIEWED: DWB
SAVE DATE: Jan 3, 2022
PLOT DATE: Jan 3, 2022
CLIENT: LWWSD
FILENAME: EUCL-D-PLANT.DWG
JOB NO.: 418.097

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW
1	12/06/19	WHATCOM COUNTY CRICITAL AREAS REVIEW COMPLETE	OMP	DWB

SCALE: SHOWN

2" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

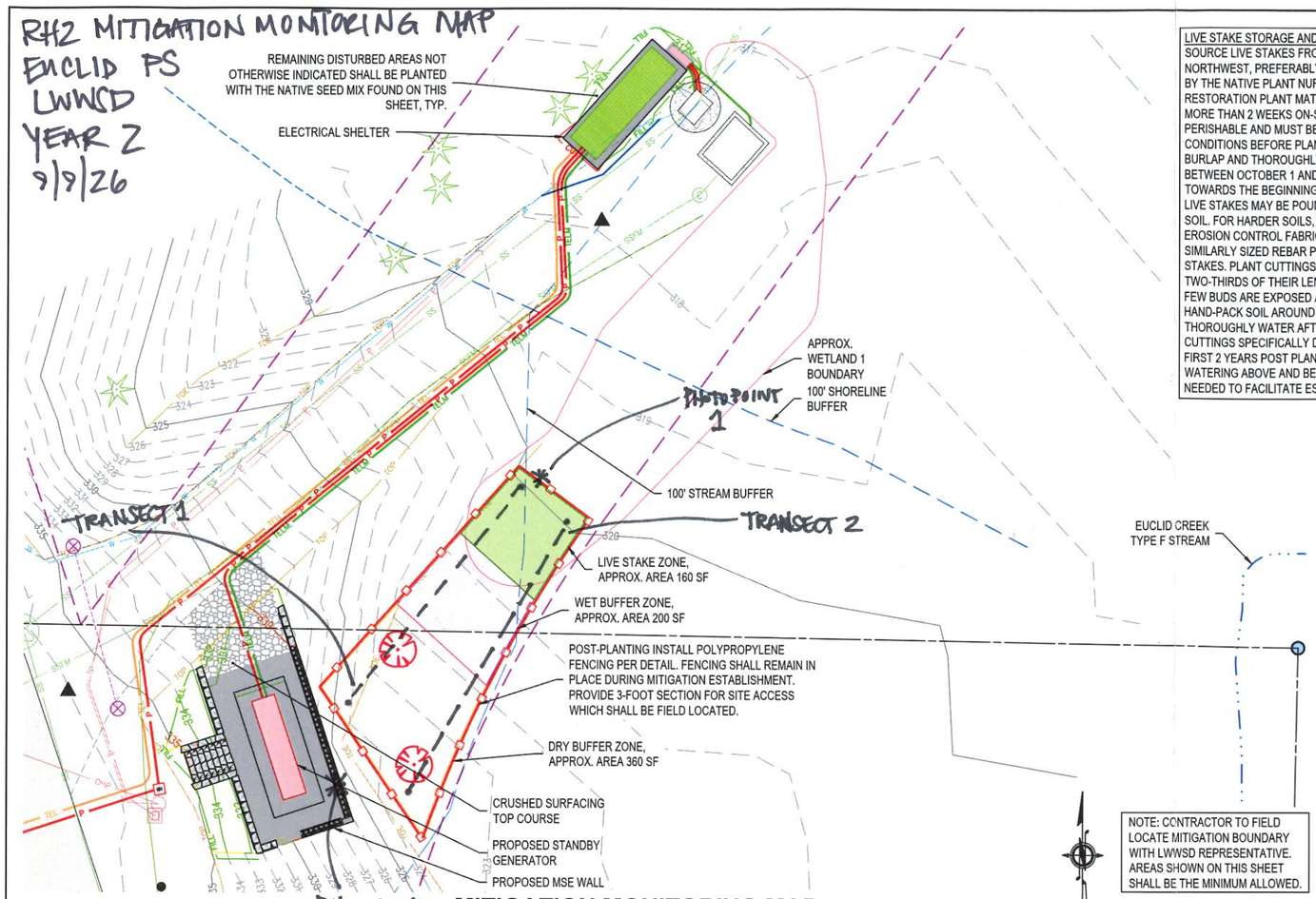
DWG NO.: L02

SHEET NO.: 10 27

Appendix C

Monitoring Data

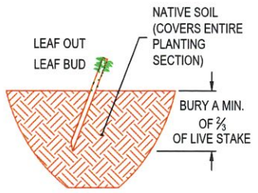
RH2 MITIGATION MONITORING MAP
EUCLID PS
LWWSD
YEAR 2
9/9/26



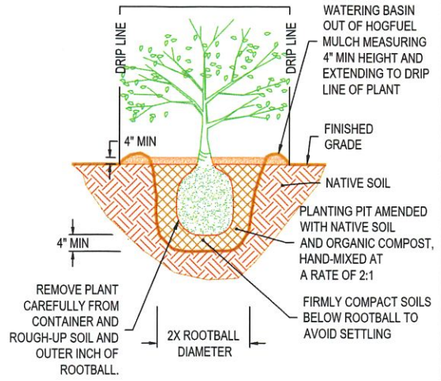
MITIGATION MONITORING MAP
1" = 10'

NOTE: CONTRACTOR TO FIELD LOCATE MITIGATION BOUNDARY WITH LWWSD REPRESENTATIVE. AREAS SHOWN ON THIS SHEET SHALL BE THE MINIMUM ALLOWED.

LIVE STAKE STORAGE AND PLANTING NOTES:
SOURCE LIVE STAKES FROM SITES NATIVE TO THE PACIFIC NORTHWEST, PREFERABLY FROM ESTABLISHED SITES IN USE BY THE NATIVE PLANT NURSERY SUPPLYING SPECIFIED RESTORATION PLANT MATERIAL. STORE LIVE STAKES FOR NO MORE THAN 2 WEEKS ON-SITE. LIVE STAKES ARE HIGHLY PERISHABLE AND MUST BE STORED IN SHADED, COOL, MOIST CONDITIONS BEFORE PLANTING. STORE STAKES WRAPPED IN BURLAP AND THOROUGHLY WET DAILY. PLANT LIVE STAKES BETWEEN OCTOBER 1 AND MARCH 15, PREFERABLY TOWARDS THE BEGINNING OF THIS WINDOW.
LIVE STAKES MAY BE POUNDED DIRECTLY INTO VERY SOFT SOIL. FOR HARDER SOILS, OR INSTALLATION THROUGH EROSION CONTROL FABRIC, DIG A PILOT HOLE WITH SIMILARLY SIZED REBAR PRIOR TO POUNDING IN LIVE STAKES. PLANT CUTTINGS SO AT LEAST HALF TO TWO-THIRDS OF THEIR LENGTH IS BURIED IN SOIL; ENSURE A FEW BUDS ARE EXPOSED ABOVE THE SOIL SURFACE. HAND-PACK SOIL AROUND CUTTINGS AFTER PLANTING. THOROUGHLY WATER AFTER INSTALLATION, AND MONITOR CUTTINGS SPECIFICALLY DURING SUMMER MONTHS IN THE FIRST 2 YEARS POST PLANTING. PROVIDE SUPPLEMENTAL WATERING ABOVE AND BEYOND IRRIGATION SPECIFIED, AS NEEDED TO FACILITATE ESTABLISHMENT OF LIVE STAKES.



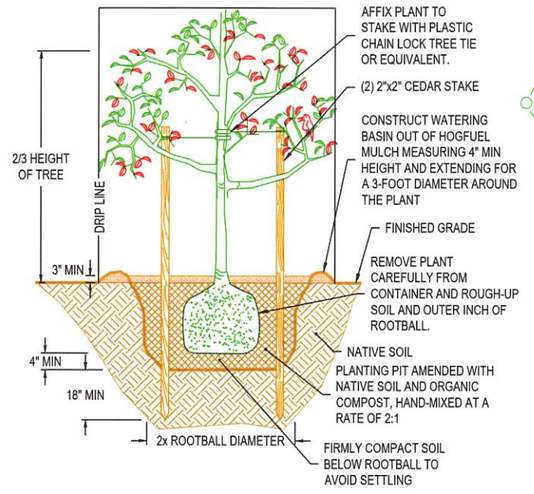
LIVE STAKE OR POLE PLANTING DETAIL
NOT TO SCALE



SHRUB PLANTING DETAIL
NOT TO SCALE

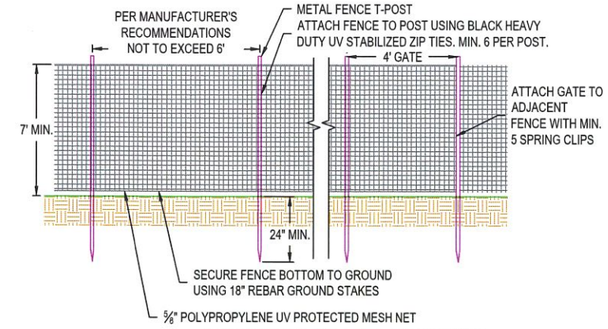
MITIGATION AREA (~720 SF)								
SYMBOL	COMMON NAME	SCIENTIFIC NAME	QTY	SIZE	SPACING DIAMETER	PLANT INDICATOR	HEIGHT AT MATURITY	PLANTING NOTES
SHRUBS								
LIVE STAKE ZONE	REDSTEM DOGWOOD	*CORNUS SERICEA*	20	LIVE STAKE (3/4-1 ½ INCH DIAMETER, 3-5 FEET LONG)	2 FT O.C.	FACW	UP TO 20'	PLANT IN LIVE STAKE ZONE SHOWN (~160 SF) PER THE PLANTING NOTES AND DETAILS ON DWG NO. L01 AND L02.
	SITKA WILLOW	*SALIX SITCHENSIS*	20			FACW	UP TO 24'	
WET BUFFER ZONE	BLACK TWINBERRY	*LONICERA INVOLUCRATA*	4	1 GALLON CONTAINER (10" MIN. HEIGHT)	4 FT O.C.	FAC	UP TO 10'	PLANT IN CLUSTERS OF 3-5 IN WET BUFFER ZONE (~200 SF), PER THE PLANTING NOTES AND THE DETAILS ON DWG NO. L01 AND L02.
	NOOTKA ROSE	*ROSA NUTKANA*	4			FAC	6-10'	
	PACIFIC NINEBARK	*PHYSOCARPUS CAPITATUS*	4			FAC	UP TO 12'	
DRY BUFFER ZONE	BEAKED HAZLENUT	*CORYLUS CORNUTA*	7			FACU	4-12'	PLANT IN CLUSTERS OF 3-5 IN DRY BUFFER ZONE (~360 SF), PER THE PLANTING NOTES AND THE DETAILS ON DWG NO. L01 AND L02.
	OCEANSPRAY	*HOLODISCUS DISCOLOR*	7			FACU	12-15'	
	TALL OREGON GRAPE	*MAHONIA AQUIFOLIUM*	7			FACU	4-8'	
TREES								
	CASCARA	*FRANGULA PURSHIANA*	2	24" MIN. HEIGHT (1 GALLON CONTAINER OR EQUIV.)	15 FT O.C.	FAC	25-30'	PLANT IN LOCATIONS SHOWN PER THE PLANTING NOTES AND DETAILS ON DWG NO. L01 AND L02

NATIVE SEED MIX (~426 SF)						
COMMON NAME	SCIENTIFIC NAME	PLANT INDICATOR	PERCENT BY WEIGHT	PERCENT PURITY	PERCENT GERMINATION	PLANTING NOTES
BLUE WILDRYE	*ELYMUS GLAUCUS*	FACU	30%	90%	85%	INERT/OTHER CROP: 2.5% MAX WEED SEED: 0.50% MAX NO NOXIOUS WEEDS ALLOWED IN SEED NO FERTILIZER ALLOWED IN SEED SEED AT 30 PLS LBS/ACRE ADD NATURAL WOOD FIBER MULCH TO SEED MIX AT 35 LBS/ACRE
TUFTED HAIRGRASS	*DESCHAMPSIA CAESPITOSA*	FACW	30%	90%	85%	
NATIVE RED FESCUE	*FESTUCA RUBRA*	FAC	30%	90%	85%	
REDTOP BENTGRASS	*AGROSTIS GIGANTEA*	FAC	10%	90%	85%	
SEED MIX SPECIFIED IS THE NATIVE EROSION CONTROL MIX FROM DIRECT SEED SALES. CONTRACTOR TO USE THIS MIX OR EQUIVALENT. ALL AREAS DISTURBED BY CONSTRUCTION NOT SPECIFICALLY SHOWN TO BE PLANTED SHALL BE SEEDED PER THE ABOVE MIX AND PLANTING DETAILS ON DWG. NO. L01.						

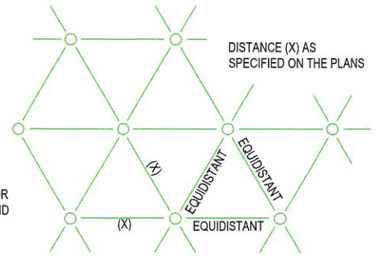


DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE

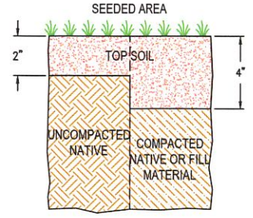
POLYPROPYLENE FENCE CONSTRUCTION NOTES:
1. DO NOT NAIL OR STAPLE FENCE TO TREES.
2. INSTALL TO RESTRICT WILDLIFE FROM MITIGATION AREA.
3. FIELD LOCATE SINGLE GATE WITH LWWSD REPRESENTATIVE.



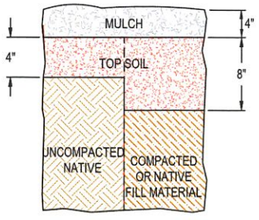
POLYPROPYLENE FENCING
NOT TO SCALE



PLANTING PATTERN FOR SHRUBS
NOT TO SCALE



TOPSOIL REQUIREMENTS FOR SEEDED AREA
NOT TO SCALE



TOPSOIL REQUIREMENTS FOR MITIGATION AREA
NOT TO SCALE

RH2

RICHARD L. BALLARD — STATE OF WASHINGTON — 32878 — REGISTERED PROFESSIONAL ENGINEER
SIGNED: 01/03/2022

DANIEL W. BURNHAM — STATE OF WASHINGTON — 38308 — REGISTERED PROFESSIONAL ENGINEER
SIGNED: 01/03/2022

LAKE WHATCOM WATER AND SEWER DISTRICT
EUCLID SEWER PUMP STATION

MITIGATION PLAN & DETAILS

NO.	DATE	DESCRIPTION	BY	REVIEW
1	12/06/19	WHATCOM COUNTY CRITICAL AREAS REVIEW COMPLETE	OMP	DWB

REVISIONS

JOB NO.: 418.097
CLIENT: LWWSD
FILENAME: EUCL-0-PLANT.DWG
SAVE DATE: Jan 3, 2022
PLOT DATE: Jan 3, 2022
ENGINEER: OMP
REVIEWED: DWB

SCALE: SHOWN
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: L01
SHEET NO.: 9
27

Line Intercept Monitoring Data Form
Page 1 of 1

Site Name: Euclid Sewer Pump Station
Project Number: 26-0168
Transect Number: #1
Transect Location: Euclid Park
Transect Length: 45 feet

Sampling Date: 9/9/26
Data Collector: Alicia P., Astoria T., (RH2)

Species	Begin (Distance)	End (Distance)	Total Distance	%
Rubus armeniacus (Himalayan Blackberry)	17 in	29 in	12 in	2
Mahonia aquifolium (tall Oregon grape)	29	42	13	2
Nootka Rose	227	254	27	5
Nootka Rose	250	333	83	15
Pacific Ninebark	496	504	8	1
			tot: 540 in	

Line Intercept Monitoring Data Form
Page 1 of 1

Site Name: Euclid Sewer Pump Station
Project Number: 26-0168
Transect Number: #2
Transect Location: Euclid Park
Transect Length: 45 feet

Sampling Date: 9/9/26
Data Collector: Alicia P, Astoria T.

Species	Begin (Distance)	End (Distance)	Total Distance	%
Physocarpus Capitatus (Pacific Ninebark)	84 in	96 in	12 in	2
Pacific Ninebark	260	274	14	3
Rosa Nutkana (Nootka Rose)	300	324	24	4
Pacific Ninebark	348	364	16	3
Symphoricarpos albus (snowberry)	429	437	8	1
Equisetum Telmateia (Giant Horsetail)	501	526	25	5
Snowberry	526	537	11	2
			tot: 540 in	

Site Name: Euclid Sewer Pump Station

Sampling Date: 9-9-26

Monitoring Year: Year 2 (2026)

Data Collector: AT / AP

General Site Observations:

Soil saturated in mitigation area where irrigated. Mostly sunny.

Southeast corner of dry buffer zone sparse. TOG, ocean spray & hazelnut mostly doing well, despite missing & some flagging.

Mitigation Type: buffer mitigation

Zone: dry buffer

Species	Total Planted	Alive	Total Alive	Dead	Total Dead* (dead or missing)	Percent Survival	Notes
cascara	2		0	II	2	0%	needs to be substituted
oceanspray	7	III	3	IIII	4	43%	
beaked hazelnut	7	~~IIII~~	5	II	2	71%	
tall oregon grape	7	~~IIII~~	5	II	2	71%	
		OVERALL 13 of 23 = 57% survivability in zone					

Site Name: Euclid Sewer Pump Station
Monitoring Year: Year 2 (2026)

Sampling Date: 9-9-26
Data Collector: AT / AP

General Site Observations:
all species in this zone are doing well & generally on the site. rose's look like they have powdery mildew & need treatment.

Mitigation Type: buffer mitigation

Zone: Wet buffer

Species	Total Planted	Alive	Total Alive	Dead	Total Dead	Percent Survival	Notes
blacktwinberry	4	II	2	II	2	50%	add'l planted in live stake zone in year 1
nootka rose	4	IIII	4		0	100%	some volunteers also observed
pacific ninebark	4	~~IIII~~ II	7		0	175%	add'l planted in live stake zone in year 1
		OVERALL 13 of 12 = 108% survivability in zone					

Site Name: Euclid Sewer Pump Station
Monitoring Year: Year 2 (2026)

Sampling Date: 9-9-26
Data Collector: AT/AP

General Site Observations:
no dogwood stakes remaining & willow stakes had add'l mortality. Those willows remaining have basal growth & partial stake visibility. add'l container plants alive except for handful of ninebark.

Mitigation Type: _____

Zone: live stake zone

Species	Total Planted	Alive	Total Alive	Dead	Total Dead	Percent Survival	Notes
red osier dogwood	20		0		20	0%	all stakes were replaced in Year 1
Sitka willow	20	𝍸	5	𝍸 𝍸	10	20%	4 willows replaced in Year 1; #s are add'l losses
Snowberry	7	𝍸 II	7		0	100%	Species used to replace stakes in Year 1
black twinberry	7	𝍸 III	8		0	114%	Species used to replace stakes in Year 1
pacific ninebark	9	𝍸 II	7	II	2	78%	Species used to replace stakes in year 1
		OVERALL 27 of 43 = 63% survivability in zone					

Appendix D

Site Photos

Euclid Sewer Pump Station – Site Photographs

Year 2 Mitigation Monitoring – September 9, 2026



View of mitigation site and sewer pump station from Photo Point 1. Facing southwest.



View of live stake zone, sewer pump station, and gravel access road from Photo Point 1. Facing southwest.

Euclid Sewer Pump Station – Site Photographs

Year 2 Mitigation Monitoring – September 9, 2026



View of mitigation site from Photo Point 2 with Lake Whatcom in the background. The wetland is shoreward of the mitigation site. Facing northeast.



View of uphill dry buffer zone from Photo Point 2. This zone is sparsely vegetated and replacement plantings are recommended. Facing northeast.

Euclid Sewer Pump Station – Site Photographs

Year 2 Mitigation Monitoring – September 9, 2026



View from Photo Point 1 of English ivy encroaching into the mitigation site. Facing southwest.



Volunteer alder, seeded from alder trees offsite, growing in the dry buffer zone in the southern corner of the mitigation site.



Close-up view of fungal/powdery mildew growth on Nootka rose leaves in the wet buffer zone. Otherwise, roses are healthy.



Removed dead stakes and vegetative debris from monitoring site visit. District contractor to remove and dispose of offsite.