Gabriola Island Local Trust Committee

Regular Meeting Revised Agenda

Date: December 1, 2022
Time: 10:30 am
Location: Gabriola Arts & Heritage Centre
476 South Road, Gabriola Island, BC

Pages

1. CALL TO ORDER 10:30 AM - 10:35 AM

"Please note, the order of agenda items may be modified during the meeting. Times are provided for convenience only and are subject to change."

2. APPROVAL OF AGENDA

3. RISE AND REPORT

4. REPORTS 10:35 AM - 10:55 AM

4.1 Trustee Reports

4.2 Chair's Report

4.3 Electoral Area Director's Report *4 - 5*

4.4 First Nation Reports

5. TOWN HALL 10:55 AM - 11:05 AM

5.1 Letter dated December 1, 2022 from F. Addison

6. MINUTES 11:05 AM - 11:10 AM

6.1 Local Trust Committee Minutes dated October 27, 2022 – for adoption 6 - 14

6.2 Section 26 Resolutions-Without-Meeting - none

6.3 Advisory Planning Commission Minutes - none

7. BUSINESS ARISING FROM MINUTES 11:10 AM - 11:30 AM

7.1 Follow-up Action List dated November 24, 2022 15 - 15

7.2 Consider adding to the Project List - Establishment of a Heritage Register and Heritage Commission Bylaw - for discussion

8. APPLICATIONS AND REFERRALS 11:30 AM - 12:00 PM

8.1 GB-DVP-2022.5 (Bustard - 663 Balsam Street) - Staff Report 16 - 81

8.2 GB-DVP-2017.1 and GB-DP-2017.2 (Weston - Acorn Island) - Staff Report 82 - 144

9. LOCAL TRUST COMMITTEE PROJECTS 12:00 PM - 12:45 PM

9.1 Official Community Plan (OCP) and Land Use Bylaw (LUB) Targeted Review - for discussion 145 - 149

10. DELEGATIONS - none

11. CORRESPONDENCE 12:45 PM - 12:50 PM

(Correspondence received concerning current applications or projects is posted to the LTC webpage)

11.1 Email dated October 30, 2022 from K. Gordon regarding Standing Resolution on Enforcement of Non-Compliant Dwellings 150 - 150

11.2 Email dated October 31, 2022 from T. Elliott to K. Gordon regarding Standing Resolution on Enforcement of Non-Compliant Dwellings 151 - 151

11.3 Email dated November 10, 2022 from T. Maika regarding alternatives to Fire Department Collecting and Burning Yard Waste in Ministry of Transportation and Infrastructure Gravel Pit 152 - 153

11.4 Letter dated November 25, 2022 from B. Thomson regarding zoning and repeal of bylaw no. 177 *154 - 155*

BREAK - 12:50 PM TO 1:20 PM

12. NEW BUSINESS 1:20 PM - 2:10 PM

12.1 2023 Local Trust Committee Meeting Dates - for discussion

12.2 Advisory Planning Commission and the Housing Advisory Planning Commission - for discussion

12.3 Strategic Planning Process to set Priorities for this Term - for discussion

13. REPORTS 2:10 PM - 2:25 PM

13.1 Climate Change Action Update

13.2 First Nations Relationship Building

Date: December 1, 2022

To: Gabriola Island Local Trust Committee

From: Vanessa Craig, RDN Director Area B

Subject: Electoral Area Director's Report

Dear Chair Luckham and Trustees Elliott and Yates,

Congratulations on your election to the Islands Trust Local Trust Committee and Trust Council. I look forward to working with you over the next four years! Unfortunately, I am unable to attend the meeting today in person, but I have included a short update:

- Planning is underway for a recreation and parks master plan for Area B which will be conducted throughout 2023 with an anticipated date for a final plan in 2024. The master plan will include public consultation at various stages to identify activity and infrastructure gaps and priorities in the community, which are linked to potential budget requirements. In addition, a mapping process of all the trails and parks on the islands will help identify areas where it's more difficult to access a park.
- At this time, development of a master plan for the new addition at Cox Park is planned for 2024, which will be able to incorporate input from the community on potential uses for the park received through the master plan process.
- Huxley Park – the phase 2 update for Huxley Park which includes a skatepark, modifications to the parking area, new stairs and improvements by the sports court is near completion. Recently, fencing and shade structures were added to the park and the installation of a vault toilet is currently occurring. As part of the Huxley Park development the Islands Trust required the RDN plant trees to replace the ones that had to be removed for the project. A group of volunteers led by GaLTT and RDN staff recently planted approximately 300 trees at Rollo McClay Park and additional trees were planted at Cox Community Park.
- The POSAC meeting originally scheduled for September was held this week. We received:
    - Updates from the Gabriola Recreation Society and GaLTT
    - Delegations re. a trail between Paisley Park and the new Cox Park addition (the decision was to move forward with developing the trail and signage), and using the Rollo McClay field for soccer (the decision was to explore what would be required to improve the playing field at Rollo McClay) and correspondence about placing signage encouraging the public to leave wildlife alone
    - Updated wording from the Museum for a sign proposed to be placed at the Malaspina Galleries
    - A staff report recommending that the RDN apply to UBCM for a grant to implement phase 1 of the 707 community park fuel management prescription, for discussion. The committee was interested in receiving information whether a modified treatment (less intense) might still qualify for grant funding.
- The RDN's regional parks and trails strategy was endorsed by the Board at the end of last term. You can find it here: https://rdn-pub.escribemeetings.com/filestream.ashx?DocumentId=27399. The document outlines a vision for the RDN's park department over the next decade or so. The strategy has been in development for a couple of years including multiple discussions at the Regional Parks and Trails Select Committee and two rounds of public engagement. It includes an interesting look at how the parks portfolio has grown over the years and highlights a growing interest in parks being acquired and managed for conservation purposes in addition to parks for recreation (historically the focus was on acquiring parks for recreation as a primary function). Important work in the near term is to foster collaboration with First Nations, develop a regional park acquisition strategy, reassess the regional park classification system (eg if a park is meant for conservation, identify it as such - eg "conservation area" instead of "regional park"), update

park management plans, develop parks and trails master plans for each electoral area, and develop and implement an invasive species strategy. In addition, we will add a staff person to work with volunteer organizations to coordinate and support volunteer-led stewardship projects.

Upcoming

- All meetings continue to be held in hybrid fashion and are live streamed. Videos and agendas of the meetings are available on the RDN calendar webpage https://www.rdn.bc.ca/agendas-minutes-videos
- The next Electoral Area Services Committee meeting is on January 12th (1 pm start)
- The next RDN Board meetings are on December 6th and January 10th (1 pm start)

Respectfully submitted,

Vanessa Craig

Gabriola Island Local Trust Committee
Minutes of Regular Meeting

Date: October 27, 2022
Location: Gabriola Arts & Heritage Centre
476 South Road, Gabriola Island, BC

Members Present: Dan Rogers, Chair
Kees Langereis, Local Trustee
Scott Colbourne, Local Trustee

Staff Present: Sonja Zupanec, Acting Regional Planning Manager
Warren Dingman, Bylaw Compliance and Enforcement Manager
Nadine Mourao, Recorder

Others Present: There were approximately twelve (12) members of the public and one (1) member of the media in attendance.

1. CALL TO ORDER

"Please note, the order of agenda items may be modified during the meeting. Times are provided for convenience only and are subject to change."

Chair Rogers called the meeting to order at 10:32 am, welcomed the public and introduced Trustees, Staff and Recorder. Chair Rogers, Trustee Colbourne and Trustee Langereis acknowledged that the meeting was being held in the territory of the Coast Salish First Nations.

2. APPROVAL OF AGENDA

By general consent the agenda was approved as presented.

3. RISE AND REPORT - Closed Meeting September 29, 2022

The Gabriola Local Trust Committee appointed Jack Woodward, Laurie Jackson, and Kathryn Berge to the Board of Variance for the Gabriola Island Local Trust Area for a three-year term effective September 29, 2022.

4. REPORTS

4.1 Trustee Reports

Trustee Colbourne reported the following and his attendance at the following meetings and events:

- Petroglyph events, thanked Gabriola Museum and Snuneymuxw First Nations Elders for their work; and
- Health and Wellness Collaborative workshop.

Trustee Langereis reported the following and his attendance at the following meetings and events:

- Petroglyph ceremony at Gabriola Museum; and
- Congratulated incoming Trustees Susan Yates and Tobi Elliot.

4.2 Chair's Report

Chair Rogers reported the following:

- Acknowledged and thanked everyone for the privilege of being Chair on Gabriola;
- Thanked Staff for their work;
- 15 new Trustees and 11 returning Trustees elected in recent election;
- Trust Council will be on November 17, 2022 when Trustees will be sworn in; and
- New Islands Trust Executive and representatives of Islands Trust Conservancy will be chosen on November 19, 2022.

4.3 Electoral Area Director's Report

Vanessa Craig, Regional District of Nanaimo (RDN) Electoral Area B summarized the report and noted the following:

- Thanked Trustees for their work over the last 4 years;
- Huxley Park shade structures installed and installation of fencing to commence soon;
- A tree planting party is scheduled for the end of November for Huxley Park;
- Parks and Open Space Advisory Committee (POSAC) meeting November 28, 2022 at the 6:30 pm at Agricultural Hall;
- Re-doing the alternative approve process for Little Qualicum River Regional Park;
- Applying for a grant for Fuel Management Prescription report for Descanso Bay Regional Park and Cox Community Parks;
- Increasing rebates for wood stove exchanges or alternative heating; and
- RDN Board meeting November 8, 2022.

4.4 First Nation Reports - none

5. TOWN HALL

A member of the public supported a census to identify how many residents were living in illegal dwellings on Gabriola as they consider the suspension of enforcement on illegal dwellings. They noted the previous enforcement suspension of a bylaw on April 11, 2019, when the LTC suspended bylaw enforcement of public markets due to a conflict in community around long standing and essential avenues of public life, urged Trustees to support the suspension of enforcement for non-compliant dwellings to remove barriers to community's essential functions while working to improve them.

A member of the public supported the deferment of bylaw enforcement on non-compliant dwellings and noted that a 2 year deferment was not adequate as many dwellings will never be compliant with bylaw as it currently stands. The bylaw needs to be updated to reflect the needs of the community.

A member of the public thanked Trustees for their leadership and encouraged them to take action on the deferment of enforcement for non-compliant dwellings. There has been community commentary, as well as, Housing Advisory Planning Commission (HAPC) and the Advisory Planning Commission (APC) referrals, which have provided community feedback. Supported an Official Community Plan (OCP) review to bring OCP up to current context with current challenges.

A member of the public noted class issue of people living in substandard, alternative non-compliant, illegal dwellings and elites that have never experienced housing insecurity and are

benefitting from and pushing institutional housing. Requested a census to examine the issue and advocacy for those experiencing housing insecurity.

- Trustees noted that People for a Healthy Community (PHC) and Angela Pounds, Community Social Worker did a report on the critically unhoused and those in substandard housing a few years ago, however, an updated report was needed to reflect current conditions and housing emergency.

6. MINUTES

6.1 Local Trust Committee Minutes dated July 28, 2022 - for adoption - to be distributed

The following amendments to the minutes dated July 28, 2022 were presented for consideration:

- Page 2, Trustee Langereis reported on the following, 2nd bullet, replace "reburial site" with "green burial site"; and
- Page 5, 8.1 GB-DVP-2022.2, replace "two density zones" with "split density zones".

By general consent the minutes were adopted as amended.

6.2 Local Trust Committee Minutes dated September 29, 2022 – for adoption - to be distributed

By general consent the Local Trust Committee meeting minutes of September 29, 2022 were adopted.

Trustees interested in generic correspondence received being included in next agenda package and reminded the public to address correspondence to 2 or more Trustees for inclusion as correspondence to the LTC.

6.3 Section 26 Resolutions-Without-Meeting - none

6.4 Advisory Planning Commission DRAFT Minutes dated October 17, 2022 - for receipt

Received.

6.5 Housing Advisory Planning Commission DRAFT Minutes dated October 18, 2022 - for receipt

Received.

7. BUSINESS ARISING FROM MINUTES

7.1 Follow-up Action List dated October 18, 2022

Received.

7.2 Draft Standing Resolution on Enforcement of Non-Compliant Dwellings - for discussion

After reviewing correspondence, HAPC and APC minutes, Town Hall commentary and all feedback, Trustees Langereis and Colbourne put forward alternate motions for consideration.

PROPOSED MOTION
that the Gabriola Island Local Trust Committee formally consults the community on the intent and wording of the following draft standing resolution, including consideration of any sunset clause to the resolution:

That, subject to section 2, bylaw enforcement staff defer enforcement on the unlawful residential use of a building on a lot if, on the date the resolution is adopted,

a) the building is occupied as a residence, and
b) enforcement would cause undue hardship to the occupants of the building.

That bylaw enforcement staff undertake enforcement action on unlawful residential use of a building if:

a) there is more than one unlawful residential use on the lot, or
b) enforcement staff reasonably determine:
    i. there is a risk of danger to the health and safety of the occupants,
    ii. that sewage is not being disposed of in an approved septic or sewage disposal system,
    iii. that use of the septic or sewage disposal system connected to the building exceeds the sewage system's capacity, or
    iv. there is sewage contamination of wells, streams or other nearby waterways.

That this standing resolution does not override enforcement for contravention of other provisions of the land use bylaws.

That the local trust committee periodically request statistics from enforcement staff on the number of complaints and deferrals to ascertain the effectiveness of the bylaw enforcement deferral.

POSTPONED

PROPOSED MOTION

a) that the Gabriola Island Local Trust Committee note that given the lack of housing options on Gabriola, Bylaw Staff will defer enforcement on all existing non-compliant dwellings being used for residential purposes except in the following circumstances:
    i. It is determined that there are risks to health and safety;
    ii. It is determined that sewage is not being disposed of in an approved septic or sewage disposal system; or that septic or sewage disposal systems are beings used in excess of capacity or ability as a result of non-compliant dwellings;
    iii. It is determined that there is contamination of wells or other drinking water sources;
    iv. Non-permitted residential uses are in environmentally sensitive areas;
    v. That the Gabriola Island Local Trust Committee may give direction to resume enforcement on activities on any property that poses risk to the health and safety of residents.

b) Nothing in this enforcement policy should be interpreted as giving permission to violate the Land Use Bylaw and the Gabriola Island Trust Committee may change this policy at any time and may give direction to expand enforcement activities at any time.

c) The Gabriola Local Trust Committee will review this standing resolution at a minimum of once per year with updates from the Bylaw Compliance and Enforcement Manager to measure results and impacts, as amended.

POSTPONED

Discussion ensued and the following key points were noted by Trustees:

- Interested in more community consultation;
- Concerned with potential impacts and damage to environment and people;
- Concerned with additional discretionary pressure on enforcement Staff;
- Interested in moving forward and not deferring motion;
- LTC has received community and Advisory Committee feedback, hoped to pass Standing Resolution to protect people and environment, while moving forward with an OCP review;
- Incoming LTC may reverse Standing Resolution if they do not support;
- Supported concept of: complaint, deferral of enforcement, report to LTC and LTC make a decision;
- Requested adding water zones to item iv. of the second proposed motion;
- The second proposed motion did include trailers, felt no reason to distinguish from other non-compliant dwellings;
- Residential use for a building is a more accurate description rather than non-compliant dwelling;
- Dwelling included all types of residences, even those that are not considered a "building";
- The second proposed motion addresses most of LTC concerns;
- Supported the word "existing" so as not to incur new non-compliant situations;
- Standing Resolution is only part of the solution to address housing crisis; and
- Reminded public about the Density Donation Project.

GB-2022-085

It was MOVED and SECONDED

that the Gabriola Local Trust Committee formally consults the community on the intent and wording of the following draft standing resolution, including consideration of any sunset clause to the resolution:

That, subject to section 2, bylaw enforcement staff defer enforcement on the unlawful residential use of a building on a lot if, on the date the resolution is adopted,

a. the building is occupied as a residence, and
b. enforcement would cause undue hardship to the occupants of the building.

That bylaw enforcement staff undertake enforcement action on unlawful residential use of a building if:

a. there is more than one unlawful residential use on the lot, or
b. enforcement staff reasonably determine:
    i. there is a risk of danger to the health and safety of the occupants,
    ii. that sewage is not being disposed of in an approved septic or sewage disposal system,
    iii. that use of the septic or sewage disposal system connected to the building exceeds the sewage system's capacity, or
    iv. there is sewage contamination of wells, streams or other nearby waterways.

That this standing resolution does not override enforcement for contravention of other provisions of the land use bylaws.

That the local trust committee periodically request statistics from enforcement staff on the number of complaints and deferrals to ascertain the effectiveness of the bylaw enforcement deferral."

DEFEATED

GB-2022-086
It was MOVED and SECONDED
that the Gabriola Island Local Trust Committee request Staff amend the Standing Resolution on Enforcement of Non-Compliant Dwellings, item v. "That the Gabriola Island Local Trust Committee may give direction to resume enforcement on activities on any property that poses risk to the health and safety of residents" adding the words "or to the environment" to the end of the sentence.

CARRIED
Trustee Langereis Opposed

GB-2022-087
It was MOVED and SECONDED
that the Gabriola Island Local Trust Committee request Staff amend the Standing Resolution on Enforcement of Non-Compliant Dwellings, item iv., replace with "Non-permitted residential uses are in water zones or environmentally sensitive areas."

CARRIED

GB-2022-088
It was MOVED and SECONDED
that the Gabriola Island Local Trust Committee request Staff amend the Standing Resolution on Enforcement of Non-Compliant Dwellings add item d.) that the Gabriola Local Trust Committee recommend to the incoming Gabriola Local Trust Committee that it conduct a community consultation regarding the Standing Resolution.

CARRIED

GB-2022-089
It was MOVED and SECONDED

a) that the Gabriola Island Local Trust Committee note that given the lack of housing options on Gabriola, Bylaw Staff will defer enforcement on all existing non-compliant dwellings being used for residential purposes except in the following circumstances:
    i. It is determined that there are risks to health and safety;
    ii. It is determined that sewage is not being disposed of in an approved septic or sewage disposal system; or that septic or sewage disposal systems are beings used in excess of capacity or ability as a result of non-compliant dwellings;
    iii. It is determined that there is contamination of wells or other drinking water sources;
    iv. Non-permitted residential uses are in water zones or environmentally sensitive areas;
    v. That the Gabriola Island Local Trust Committee may give direction to resume enforcement on activities on any property that poses risk to the health and safety of residents or to the environment.

b) Nothing in this enforcement policy should be interpreted as giving permission to violate the Land Use Bylaw and the Gabriola Island Trust Committee may change this policy at any time and may give direction to expand enforcement activities at any time.

c) The Gabriola Local Trust Committee will review this standing resolution at a minimum of once per year with updates from the Bylaw Compliance and Enforcement Manager to measure results and impacts, as amended.

d) That the Gabriola Local Trust Committee recommend to the incoming Gabriola Local Trust Committee that it conduct a community consultation regarding the Standing Resolution.

CARRIED
Trustee Langereis Opposed

By general consent the meeting was recessed at 12:39 pm and reconvened at 1:15 pm.

7.3 Response Letter to the Local Trust Committee dated October 13, 2022 from TELUS regarding Herbicide use on Gabriola Island

Received.

8. APPLICATIONS AND REFERRALS

8.1 GB-DVP-2022.6 and GB-DP-2022.2 - (Gabriola Housing Society) - Staff Report

Acting Planning Manager Zupanec summarized the report which introduced a combined Development Permit (DP) and Development Variance Permit (DVP) application for LTC consideration.

Trustees noted the following:

- Interested in a qualified environmental professional to develop impact assessment plan and a construction management plan.

Ian Scott, representative of the applicant noted:

- The septic disposal waste water field area may reduce the calculated forest retention area based on recommendation from arborist post-installation, due to area root rot etc.;
- Parking area material is permeable crushed gravel;
- Interested in being as "shovel ready" as possible to be in best position to obtain funding; and
- Intention of site plan is to leave clusters of trees in development area, however, will need post development arborist assessment to assess root structure and condition.

GB-2022-090
It was MOVED and SECONDED
that the Gabriola Island Local Trust Committee Add condition e) that they retain a qualified environmental professional to further develop an impact assessment and accompanying construction management plan to Development Permit GB-DP-2022.2 (Gabriola Housing Society).

CARRIED

GB-2022-091
It was MOVED and SECONDED
that the Gabriola Island Local Trust Committee approve issuance of Development Permit GB-DP-2022.2 (Gabriola Housing Society), as amended.

CARRIED

GB-2022-092
It was MOVED and SECONDED
that the Gabriola Island Local Trust Committee approve issuance of Development Variance Permit GB-DVP-2022.6 (Gabriola Housing Society).

CARRIED

9. LOCAL TRUST COMMITTEE PROJECTS - none

10. DELEGATIONS - none

11. CORRESPONDENCE

(Correspondence received concerning current applications or projects is posted to the LTC webpage)

12. NEW BUSINESS

12.1 Request to Amend Local Trust Committee Advisory Planning Committee Bylaw No. 296 - for discussion

Trustee Langereis requested that Staff amend text of Section 6 (b) of Bylaw no. 296 to strike out the words "the lessor of three members or" and use the 50% rule for determination of a quorum.

GB-2022-093
It was MOVED and SECONDED
that the Gabriola Local Trust Committee request Staff prepare an amendment to the text of Section 6 (b) of Bylaw no. 296 by striking out the words "the lessor of three members or".

CARRIED

13. REPORTS

13.1 Climate Change Action Update

Received.

13.2 First Nations Relationship Building

Received.

13.3 Trust Conservancy Report - none

13.4 Applications Report dated October 18, 2022

Received.

13.5 Trustee and Local Expense Report dated August, 2022

Received.

13.6 Adopted Policies and Standing Resolutions

Received.

13.7 Local Trust Committee Webpage

No updates requested.

14. WORK PROGRAM

14.1 Top Priorities Report dated October 18, 2022

Received.

14.2 Future Projects List Report dated October 18, 2022

Received.

15. UPCOMING MEETINGS

15.1 Next Regular Meeting Scheduled for Thursday, December 1, 2022 at 10:30 am at the Gabriola Arts and Heritage Centre

16. CLOSED MEETING

16.1 Motion to Close the Meeting

GB-2022-094
It was MOVED and SECONDED
that the meeting be closed to the public in accordance with the Community Charter, Part 4, Division 3, s.90(1) (d) for the purpose of considering adoption of In-Camera Meeting Minutes dated September 29, 2022 and that the recorder and staff attend the meeting.

CARRIED

Chair Rogers closed the meeting to the public at 1:58 pm.

16.2 Recall to Order

By general consent the meeting was recalled to order 2:05 pm.

14.3 Rise and Report

The Gabriola Local Trust Committee In-Camera meeting minutes of September 29, 2022 were adopted.

17. ADJOURNMENT

By general consent the meeting was adjourned at 2:06 pm.

_____
Dan Rogers, Chair

Certified Correct:

_____
Nadine Mourao, Recorder

Islands Trust

Print Date: November 24, 2022

Follow Up Action Report

Gabriola Island

29-Sep-2022

	Activity	Responsibility	Dates	Status
1	Add to December 1st agenda "Consider adding to project list 'establishment of a heritage register and heritage commission bylaw' as a 'business arising from minutes' item".	Becky McErlean		Completed
2	Amend the project list as amended from September 2022 staff report recommendation; forward business case to Financial Planning Committee for consideration; refer finalized projects list to the APC and HAPC for comment.	Sonja Zupanec		Completed

27-Oct-2022

	Activity	Responsibility	Dates	Status
1	GB-DP-2022.2 (amended) and DVP 2022.6 (GHS) Issue permits, close files.	Becky McErlean Sonja Zupanec		Completed

STAFF REPORT

File No.: GB-DVP-2022.5 (Bustard)
GB-BE-2022.4

DATE OF MEETING:	December 1, 2022
TO:	Gabriola Island Local Trust Committee
FROM:	Margot Thomaidis, Planner 2 Northern Team
SUBJECT:	**Development Variance Permit Application** Applicant: Jeff Bustard Location: 663 Balsam Street, Gabriola Island

RECOMMENDATION

1. **That the Gabriola Island Local Trust Committee approve issuance of Development Variance Permit GB-DVP-2022.5 (Bustard)**

REPORT SUMMARY

This report is to introduce a Development Variance Permit (DVP) application for consideration by the Gabriola Island Local Trust Committee (LTC) to authorize the following:

a) a variance to the Gabriola Island Land Use Bylaw (LUB) requirement for any structure to be sited a minimum of 15 metres (49.2 feet) from and 1.5 metres (4.9 feet) above the natural boundary of any lake, stream, or wetland; and
b) a variance to the LUB requirement that a septic sewage disposal field must be sited a minimum of 30 metres (98.4 feet) from the natural boundary of the sea, lake, stream or wetland.

The application seeks to permit the siting of existing septic tanks, a pump chamber and a culvert, as well as permit the siting of a new proposed septic field and sewage pipes to be installed on the property.

BACKGROUND

Section 498(1) of the *Local Government Act* (LGA) enables the LTC to issue DVPs which can vary specific provisions of the zoning, or land use bylaw. A DVP cannot vary use or density of the land. The LGA was recently amended in 2022 to enable local governments to delegate DVP decisions to staff, if the proposed variance is minor and pertains to matters specified in legislation. Although this application would be classified as minor according to the LGA, a delegation authority bylaw has not been passed by the LTC and so is presented for LTC consideration.

The application is the result of a Bylaw Compliance and Enforcement action for works undertaken without a permit, specifically the installation of septic tanks in the setback to the natural boundary of a wetland in the spring of 2022. The subject property is 0.17 hectares (0.41 acres) in size and located on Balsam Street as shown on Figure 1.

A building permit application referral was received by Islands Trust in early 2022 for a single family residential dwelling and a septic field on the property. The site and building plans indicated an 'existing standing water swamp area' on the property with a 'seasonal groundwater drainage path' flowing to the swamp area from the lot to the east. Planning staff reviewed the application and asked for clarification that the swamp area and drainage path were not in fact considered a watercourse according to the definition in the LUB. CORE Geotechnical Inc. was hired by the applicant and assessed that the swamp area and drainage paths did not meet the definition of a stream or watercourse, and that the seasonally wet depression existed due to the drainage path leading from the eastern property (671 Balsam Street). The building permit application referral was approved by Islands Trust staff and sent to the Regional District of Nanaimo for further processing.

After the bylaw complaint was made in spring 2022 and it became apparent that the 'seasonally wet depression' may in fact be a wetland/swamp, the applicant hired an Applied Ecologist & Geospatial Analyst to prepare a wetland assessment report. They found that there is a 102m^2 natural spring-fed wetland/swamp near the middle-western part of the property that meets the definition of a stream under the *Water Sustainability Act* (*WSA*). The inlet and outlet drainages of the wetland are treated as drainage ditches rather than streams under the *WSA*, due to the historical modification of drainage patterns that occurred at the time of subdivision and development of the lots to the east of the property. The wetland does not directly support fish and has no surface flow connection to potential fish habitat downstream, so the *Riparian Areas Protection Regulation* does not apply. Further information about the subject property is contained within the 'Site Context', 'Mapping' and 'Wetland Assessment Summary' attachment documents (Attachments 2, 3, and 4).

The scope of development for the property is shown in Figures 3 and 4 and entails:

Completed:

- Installation of septic tanks, a pump chamber and a culvert under the driveway at less than 15 metres from the natural boundary of the wetland and less than 1.5 metres above the wetland elevation.

Proposed:

- Installation of a septic field 4.0 metres from the natural boundary of the wetland
- Installation of a sewage pipe leading from the dwelling to the septic system at less than 15 metres from the natural boundary of the wetland and less than 1.5 metres above the wetland elevation
- Construction of an approximately 115m^2 3-bedroom single-family dwelling with an attached carport at least 15 metres from the natural boundary of the wetland.

The 'Wetland Assessment Summary' prepared by Ian Wright, PAg, RBTech (Tributary Environmental Consulting, May 15, 2022) is attached (Attachment 4). An 'Amended Sewage Disposal System Design' prepared by Bruce Grayson, PEng (CORE Geotechnical Inc., August 2, 2022) is also attached (Attachment 5). These reports are analysed further in the variance application in 'Issues and Opportunities' (below).

The applicant reports that the septic tanks were installed only after a filing for the septic disposal system with Island Health was accepted.

Copies of the Notice and proposed DVP are included as Attachments 6 and 7.

Figure 1 - Subject property

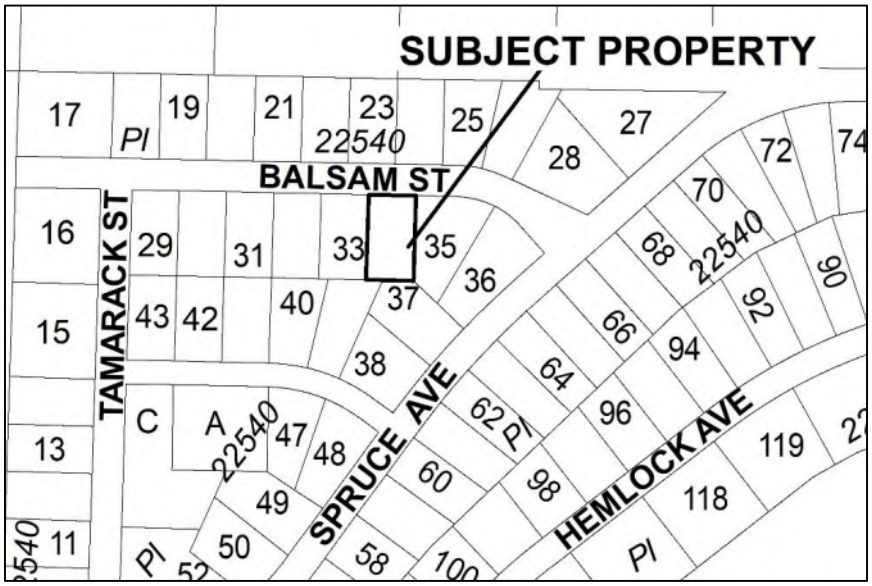


Figure 2 – Orthophoto

ANALYSIS

Policy/Regulatory

Islands Trust Policy Statement

The following Islands Trust Policy Statement (ITPS) directive policies are relevant to this application:

3.1.3 Local trust committees and island municipalities shall, in their official community plans and regulatory bylaws, address the identification and protection of the environmentally sensitive areas and significant natural sites, features and landforms in their planning area.

3.1.4 Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the planning, establishment, and maintenance of a network of protected areas that preserve the representative ecosystems of their planning area and maintain their ecological integrity.

3.3.2 Local trust committees and island municipalities shall, in their official community plans and regulatory bylaws, address means to prevent further loss or degradation of freshwater bodies or watercourses, wetlands, and riparian zones to protect aquatic wildlife.

This application is compliant with the ITPS.

Figure 3 - Site Plan

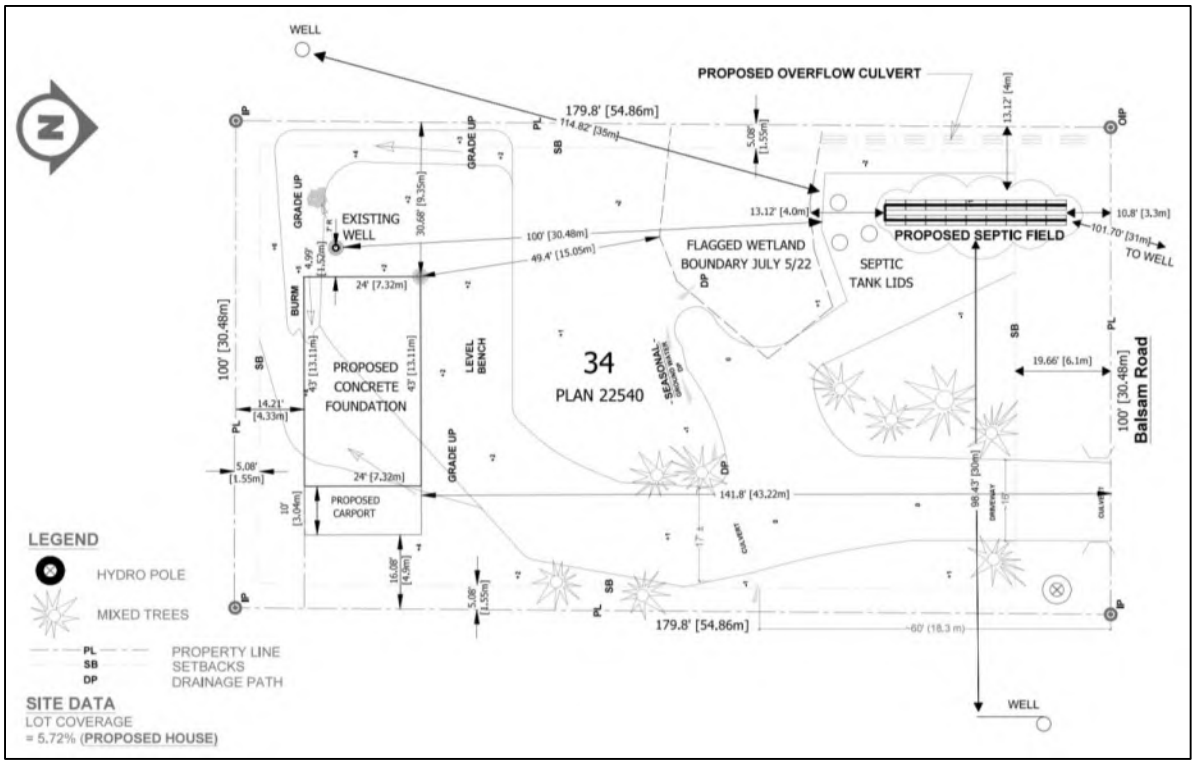
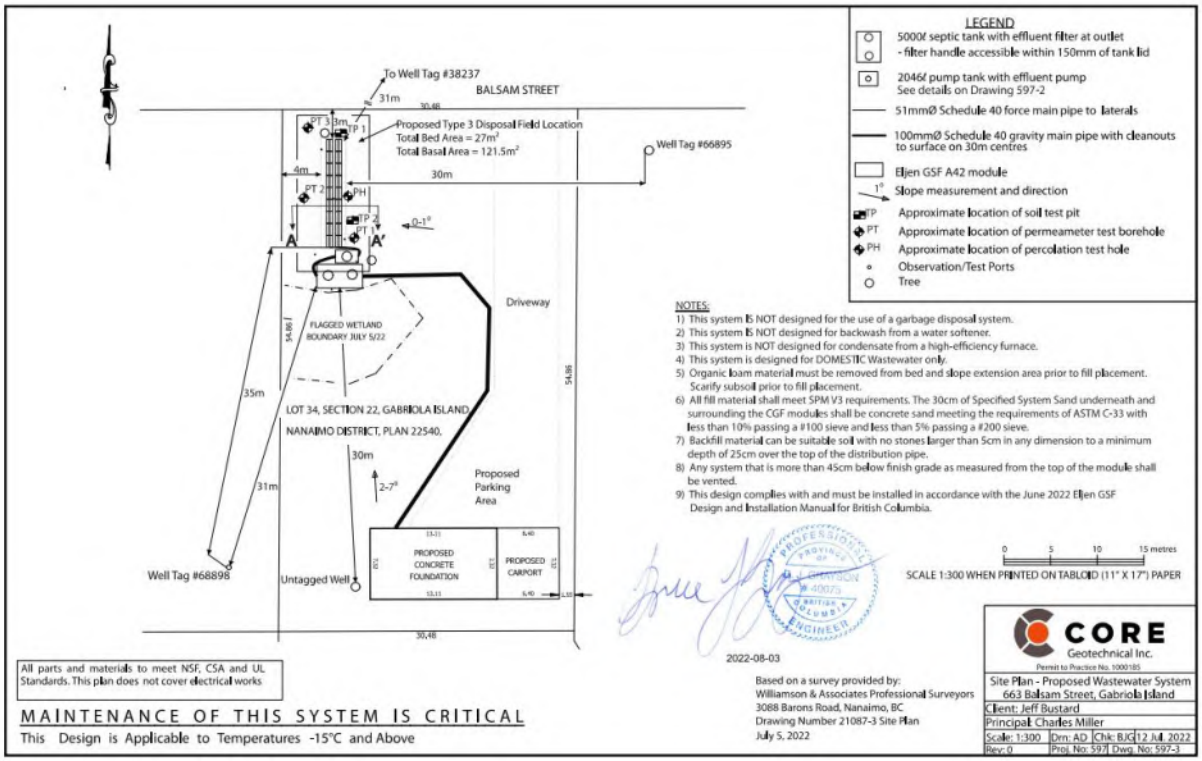


Figure 4 – Proposed Septic Sewage System



Official Community Plan

The subject property is designated **Small Rural Residential** in the Gabriola Island Official Community Plan (OCP) Bylaw No. 166.

As reviewed the proposed development complies with the objectives and policies of the OCP.

Land Use Bylaw

The subject property is zoned as **Small Rural Residential (SRR)** in the Gabriola Island Land Use Bylaw (LUB) No. 177.

The proposed development meets all LUB siting and use regulations except for the required variances for the septic tanks, pump chamber, sewage pipes, and culvert as per the following Clauses in the Land Use Bylaw (LUB):

- Clause B.2.1.1 a. which states that "*structures* must be sited a minimum of 15 metres (49.2 feet) from and 1.5 metres (4.9 feet) above the natural boundary of any lake, stream, or wetland";
- Clause B.2.1.1 b. which states that a "septic sewage disposal field must be sited a minimum of 30 metres (98.4 feet) from the natural boundary of the sea, lake, stream or wetland";

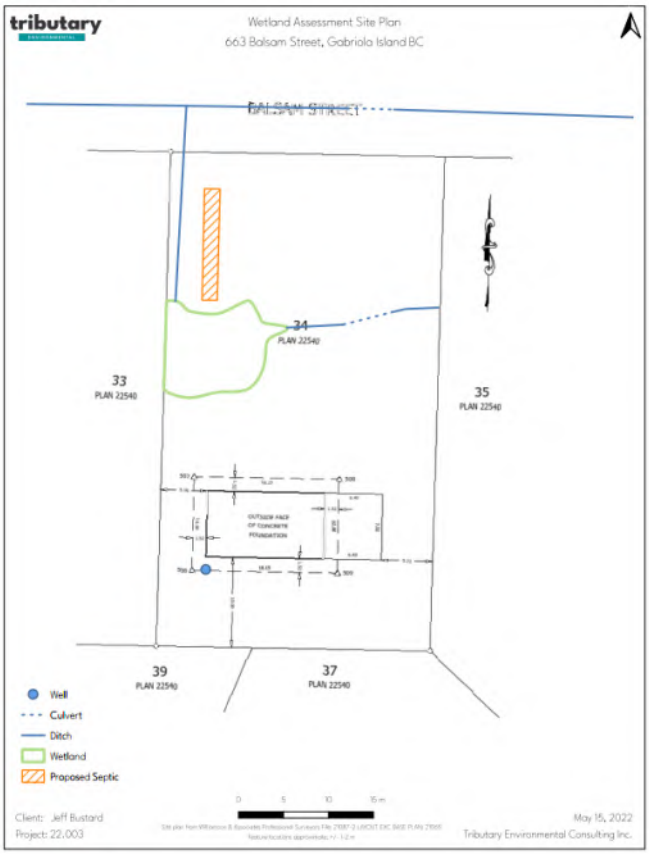
Issues and Opportunities

Wetland Assessment Summary Report

An Applied Ecologist and Geospatial Analyst (Tributary Environmental Consulting Inc.) was retained by the applicant to assess a seasonally wet depression on the subject property as part of the bylaw enforcement and

Development Variance Permit process. The purpose of this assessment was to provide another professional opinion on the status of the seasonally wet depression, and to provide general recommendations for the proposed development layout and construction in relation to surface drainage features so that the property may be used as intended in an environmentally responsible manner.

Figure 5: Wetland Assessment Site Plan



The report describes the 'seasonally wet depression' on the property as a wetland that meets the definition of a stream under the *WSA* because it is a natural spring-fed swamp. The author concludes that the wetland would persist as spring fed even if the small volume of flow piped from 671 Balsam Street was redirected to the roadside ditch and not onto the subject property. The inlet and outlet drainage ditches are not considered streams under the *WSA* definition.

The author states that the *Riparian Area Protection Regulation* (*RAPR*) does not apply to the wetland on the subject property or its inlet and outlet drainages because it is not capable of supporting resident native fish and it is isolated with no surface flow connection to potential fish habitat downstream.

At the recommendation of this professional report, the applicant has agreed to the following:

1. Siting the septic system in the most appropriate location from a health standpoint, meaning the current proposed location which is at least 30 metres from any surrounding groundwater domestic wells. Water quality effects on aquatic life if the septic is situated as proposed adjacent to the isolated wetland will be minor assuming the system is properly maintained, and stormwater is managed appropriately.

2. Directing stormwater from the proposed house roof leaders and any other impervious surfaces to a rock pit as far away from the wetland as possible. Stormwater will not be discharged directly into the wetland.

3. Shifting the initial location of the proposed dwelling approximately 8.0 metres south and toward the rear of the property. That allows the dwelling to be constructed the required 15 metres from the natural boundary of the wetland consistent with Clause B.2.1.1.a. of the LUB, while still avoiding impacting additional mature trees on the property. As the elevation of the property rises slightly to the rear, that allows the underside of the floor system to be constructed above the required 1.5 metres above the elevation of the wetland consistent with Clause B.2.1.1.c. of the LUB.

4. Managing and maintaining the wetland inlet and outlet channels as drainage ditches, including installing rock check dams every 2 metres to slow down high flows.

5. Restoring recent disturbances around the edge of the wetland by planting native riparian shrubs and ferns at the appropriate time (mid to late October was suggested). Additionally, not modifying the wetland without a Change Approval from the Province.

See Attachment 4 for the 'Wetland Assessment Summary' report.

Amended Sewage Disposal System Design

The applicant initially hired CORE Geotechnical Inc. to design a Type 2 septic sewage disposal system in September 2021. After the wetland assessment determined that the wetland is considered a stream under the *WSA*, the applicant hired CORE to propose an amendment to the septic sewage disposal system (Figure 4). The proposed sewage disposal system has now been changed from a 'Type 2' to a 'Type 3' system. Type 3 systems treat wastewater to a higher water quality standard than Type 2 systems Type 3 systems are custom designed and intended for use with properties that have poor site soil conditions not suitable for Type 1 or Type 2 systems, as they disinfect the treated wastewater before it is distributed to the drain field, and they do not require as much drainage field space as other systems.

CORE chose a Type 3 system for the following reasons:

- The area available beyond required horizontal setbacks from wells is limited.
- The area available beyond surficial drainage horizontal setbacks is limited.
- Pathogen attenuation will remove possible health hazards should the treated effluent drain into the surface drainage feature.
- The required Area of Infiltrative Surface for Type 1 systems cannot be met.

See Attachment 5 for the 'Sewage Disposal System Review'.

Rationale for the Variances

The rationale for the variance is to enable the septic infrastructure to be buried in a location on the property that is logical for the development layout, distance from surrounding wells and where the topography, wetland ecosystem and limited developable area limits the ability to otherwise comply with the regulation.

Impact on Neighbouring Properties

Given that the septic tanks, pump chamber, septic field, and pipes are all buried, staff anticipates the proposed variances to have little to no impact on neighbouring properties. From a health standpoint, placing the septic field as proposed ensures that it will not impact other property owners' domestic wells.

Intent of the Regulations being Varied

The purpose of regulation is to mirror provincial watercourse setbacks and flood construction level guidelines for the protection of development from flood hazard and protection of the natural environment.

The proposed variance is supported by staff as it is minor in nature and does not challenge the intent of the regulation.

Potential Impacts of Granting the Variances

Granting a variance can potentially create an expectation in the community with regard to future applications. As variances consider the unique circumstances pertaining to a particular situation that may warrant the relaxation of a specific zoning regulation each application should be evaluated on its own merits.

Consultation

DVP Notices were circulated to surrounding property owners and residents within 100 metres (Attachment 6). The notification period ends at 4:30 p.m. on November 30, 2022.

To date, no correspondence had been received and any submissions received following the preparation of this staff report will be forwarded to the LTC and reported at the meeting.

First Nations

The Islands Trust reviews all applications to ensure the preservation and protection of cultural heritage, archaeological sites, and ancestral places. Properties may show potential for archaeological material to be found on the property during the proposed development, and Islands Trust provides information to applicants requesting they comply with the Heritage Conservation Act (HCA). The applicant has been provided the Islands Trust Chance Find Protocol and the provincial Archaeological Branch guidelines on HCA compliance. During the course of any development or land alteration applicants must ensure that in the event of archaeological material, or values being found all work on the property is stopped to preserve and protect cultural heritage. As reviewed, the DVP application is consistent with respect to LTC Standing Resolutions on reconciliation.

Rationale for Recommendation

The recommendation on page 1 for the proposed DVP is supported as:

- The structures are required and recommended by qualified professionals;
- The proximity of the wetland and wells, and the topography of the property limits the ability to comply with the regulation;
- There will be little or no potential impacts from granting the variance;
- The variances do not challenge the intent of the regulation.

ALTERNATIVES

The LTC may consider the following alternatives to the staff recommendations on page 1:

1. **Request further information**

   The LTC may request further information prior to making a decision. If selecting this alternative, the LTC should describe the specific information needed and the rationale for this request. Recommended wording for the resolution is as follows:

That the Gabriola Island Local Trust Committee request that the applicant submit to the Islands Trust _____.

2. Deny the application

The LTC may deny the application. Recommended wording for the resolution is as follows:

That the Gabriola Island Local Trust Committee deny application GB-DVP-2022.5.

NEXT STEPS

If the LTC resolves to issue the Development Variance Permit, the permit will be issued and the applicant may commence with the building permit process.

Submitted By:	Margot Thomaidis, Planner 2	November 16, 2022
Concurrence:	Sonja Zupanec, RPP, MCIP,Acting Regional Planning Manager	November 16, 2022

ATTACHMENTS

1. Applicant Letter
2. Site Context
3. Mapping, Plans and Photos
4. Wetland Assessment Summary (Tributary Environmental Consulting)
5. Amended Sewage Disposal System Design (CORE Geotechnical Inc.)
6. Notice
7. Draft Development Variance Permit

August 8th 2022

Islands Trust Northern Office
700 North Road
Gabriola Island BC V0R 1X3

RE: **Development Variance Permit Application**
663 Balsam Street, Gabriola Island |PID: 003-330-435

Purpose of Application

This application relates to our proposal to build a single-family home and carport at 663 Balsam.

The purpose of the application is to request the following proposed variances regarding Gabriola Island Land Use Bylaw No. 177:

A. The required setback for a septic disposal field from the natural boundary of a wetland **from 30m to 4m**.
B. The required setback of a structure (septic tanks) from the natural boundary of a wetland **from 15m to 0m**.

In support of this application, we're including the following documents:

- *Wetland Assessment Summary* by Tributary Environmental Consulting (Tributary)
- *Amended Sewage System Disposal System Design* by CORE Geotechnical Inc (CORE)

Rationale

We're severely limited as to potential locations for siting a septic on this property due to the challenge of meeting the 30m setback requirements from surrounding wells on a half-acre lot.

The footprint of the septic as proposed adjacent to the wetland is the only location that allows us to meet these setbacks while maintaining the wetland and allowing reasonable space for a driveway and home.

According to Tributary's *Wetland Assessment Summary*, the siting of the septic system as proposed adjacent to the wetland will be minor if the system is properly maintained and stormwater managed. Tributary therefore recommends that the septic be sited *at the most appropriate location from a health standpoint*.

Considering the proposed footprint as sited and designed by CORE represents the most appropriate location from a health standpoint is, we are seeking the above variances to bring our project into compliance.

Measures to minimize impact

While we had taken measures to maintain the existing seasonal drainage pattern on the property, we were not aware that the intermittent standing water constituted a “wetland” when the septic was originally designed and sited by CORE or when the site layout and house design were developed by Boehm Construction.

We’d like to take this opportunity to share the further measures we have taken and plan to take under the professional guidance of Tributary and CORE to minimize the impact of our proposed development on what we now understand as a wetland.

The following changes have been made to our designs:

- Re-sited the house to meet required 15m setback of a building from a wetland boundary.
- Upgraded the septic design from a Type 2 to a Type 3 system to further minimize any potential health or environmental impacts.

We also intend to pursue the following recommendations provided by Tributary in the *Wetland Assessment Summary*:

- Direct stormwater from the house roof leaders and any other impervious surfaces to a rock pit as far from the wetland as possible to allow it to infiltrate through the soil.
- Manage and maintain the inlet and outlet channels as drainage ditches.
- Restore recent disturbances around the edge of the wetland by planting native riparian shrubs and ferns in mid to late October.

Sincerely,

Jeff Bustard and Asako Tsujino
Property Owners

ATTACHMENT #2– SITE CONTEXT – GB-DVP-2022.5

LOCATION

Legal Description	LOT 34, SECTION 22, GABRIOLA ISLAND, NANAIMO DISTRICT, PLAN 22540
PID	003-330-435
Civic Address	663 BALSAM ST GABRIOLA BC V0R 1X1
Lot Size	0.17 ha / 0.41 acres

LAND USE

Current Land Use	Vacant
Surrounding Land Use	East and West: Residential South: Vacant North: Balsam St. 

HISTORICAL ACTIVITY

File No.	**Purpose**
GB-BP-2022.2	Building Permit for new Single Family Dwelling (Closed).

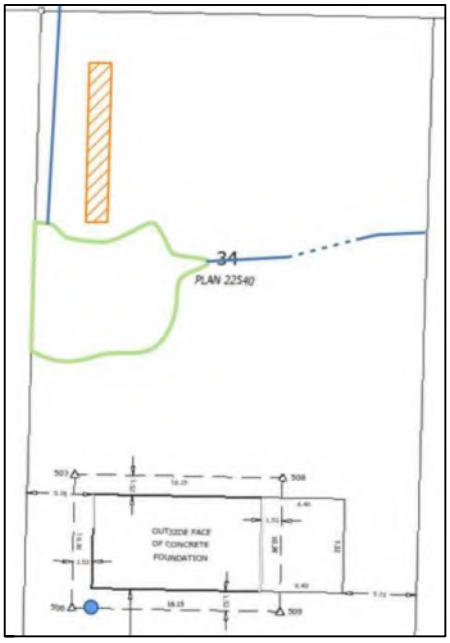
POLICY/REGULATORY

Gabriola Island Official Community Plan (OCP) No. 166, 1997	Land Use Designation: **SRR – Small Rural Residential** No applicable DPAs
Gabriola Island Land Use Bylaw (LUB)	Zone: **Small Rural Residential (SRR)** Applicable LUB regulation for variance application:

No. 177, 1999	**Part B – General Regulations,** **B.2 General Siting and Height Provisions,** **B.2.1 Special Setbacks and Elevations, B.2.1.1 Setbacks and Elevations from Watercourses and the Sea, B.2.1.1.a:** "Despite all other siting references in this Bylaw excepting B.2.1.4c, third party signs, fences, pump/utility houses, retaining walls, ground level decks, structures and buildings, excepting boathouses, must be sited a minimum of 7.5 metres (24.6 feet) from and 1.5 metres (4.9 feet) above the natural boundary of the sea and a minimum of 15 metres (49.2 feet) from and 1.5 metres (4.9 feet) above the natural boundary of any lake, stream, or wetland. Where the frontage on the sea is not adequately protected from erosion by natural bedrock or works as certified by a professional engineer, buildings and structures must be sited a minimum of 15 metres (49.2 feet) from and 1.5 metres (4.9 feet) above the natural boundary of the sea." **B.2.1.1.b.** A septic sewage disposal field must be sited a minimum of 30 metres (98.4 feet) from the natural boundary of the sea, lake, stream or wetland. **B.2.1.1.c.** elevation requirements in B.2.2.1.a. are measured to the underside of the floor of any wooden floor system or top of a slab or pad of any habitable area. **Part G - Definitions** **G.1 Definitions** **In this Bylaw:** ***structure*** • anything constructed or erected that is fixed to, supported by or sunk into land or water, whether underwater or otherwise, excluding vehicles except for vehicles used as a restaurant where a restaurant is a permitted use, floating vessels, paving for vehicle parking, sidewalks, and sewage absorption fields; for clarity, swimming pools, dugouts, cisterns, above ground septic tanks and detached ground level decks are considered structures;
Other Regulations	The wetland/swamp on the subject property is considered a stream under the *Water Sustainability Act*. "***Water Sustainability Act*** **Part 1 — Interpretation and Application** **Definitions** **1(1) in this Act:** "stream" means a) a natural watercourse, including a natural glacier course, or a natural body of water, whether or not the stream channel of the stream has been modified, or b) a natural source of water supply,

	including, without limitation, a lake, pond, river, creek, spring, ravine, gulch, wetland or glacier, whether or not usually containing water, including ice, but does not include an aquifer"
Covenants	391132G – Restrictive Covenant – Building Scheme 66409G – Undersurface Rights S13090 – Undersurface Rights
Bylaw Enforcement	**GB-BE-2022.5** • Septic field is proposed to be sited within 4.0 metres of a wetland. • Septic tanks have already been placed within 0.0 metres of the wetland. • This DVP application is intended to address non-compliance.

SITE INFLUENCES

Islands Trust Conservancy	N/A – This application does not directly affect an ITC-owned property or conservation covenant; nor does it directly affect a property adjacent to an ITC-owned property or conservation covenant. It also does not pertain to terrestrial or intertidal Crown Land located within 100m of an ITC-owned property or conservation covenant. Therefore referral to ITC for comment is not required.
Regional Conservation Plan	The Regional Conservation Plan 2018-2027 estimated importance of habitat composition in the area of the subject property is **MEDIUM**. This application does not appear to be inconsistent or contrary to the goals and objectives set out in the ITC Regional Conservation Plan.
Species at Risk	None mapped.
Sensitive Ecosystems	A natural spring-fed wetland/ swamp approximately 102m^2 in area has been identified on the subject property by an Applied Ecologist/Geospatial Analyst. See **Attachment 5** for assessment and recommendations.  *Excerpt from **Tributary Environmental Wetland Assessment Summary – May 15, 2022**. (wetland/swamp in **GREEN**)*

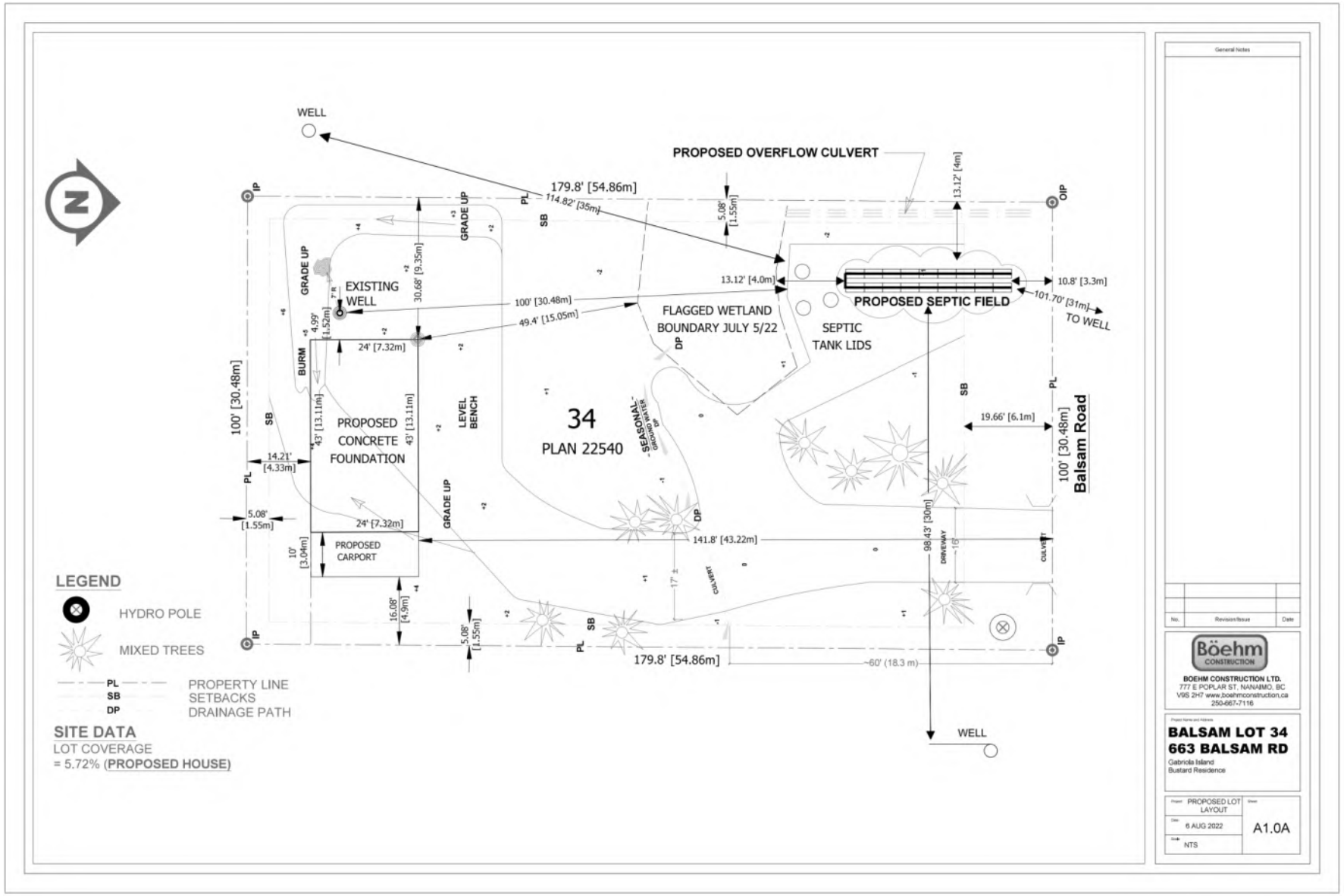
	Additionally, two **SEM Primary Class Wetland Ecosystems** are mapped approximately 95 m Northwest and 118 m Northeast of the subject property.  Healthy wetlands provide clean, filtered water, flood control and wildlife habitat. The Islands Trust Conservancy's Sensitive Ecosystem Guide provides the following information on wetlands: • Avoid infilling, draining or ditching wetlands • Create and retain a vegetated buffer around wetlands and associated riparian ecosystems to protect hydrology systems • Prevent disturbance of nesting or breeding areas by humans, livestock or pets, especially between March and August • Restrict nearby pesticide, fertilizer or other chemical use
Hazard Areas	None mapped.
Archaeological Sites	Remote Access to Archaeological Data (RAAD) information indicates no archaeological sites within the property or within 100 metres. There is no archaeological potential mapped within 100 metres of the property. Notwithstanding the foregoing, and by copy of this report, the owners and applicant should be aware that there is still a chance that the lot may contain previously unrecorded archaeological material that is protected under the *Heritage Conservation Act*. If such material is encountered during development, all work should cease and Archaeology Branch should be contacted immediately as a *Heritage Conservation Act* permit may be needed before further development is undertaken. This may involve the need to hire a qualified archaeologist to monitor the work.]
Climate Change Adaptation and Mitigation	This DVP application seeks to lawfully site a septic field and related structures on the property and as such does not propose any additional intensity of use or development beyond what is currently permitted by zoning. GHG emissions can be expected to be commensurate with normal levels associated with Single Family Residential development patterns and use, including the use of personal vehicles for transport on and off island.

ATTACHMENT 3 – MAPS, PLANS, DRAWINGS, PHOTOGRAPHS

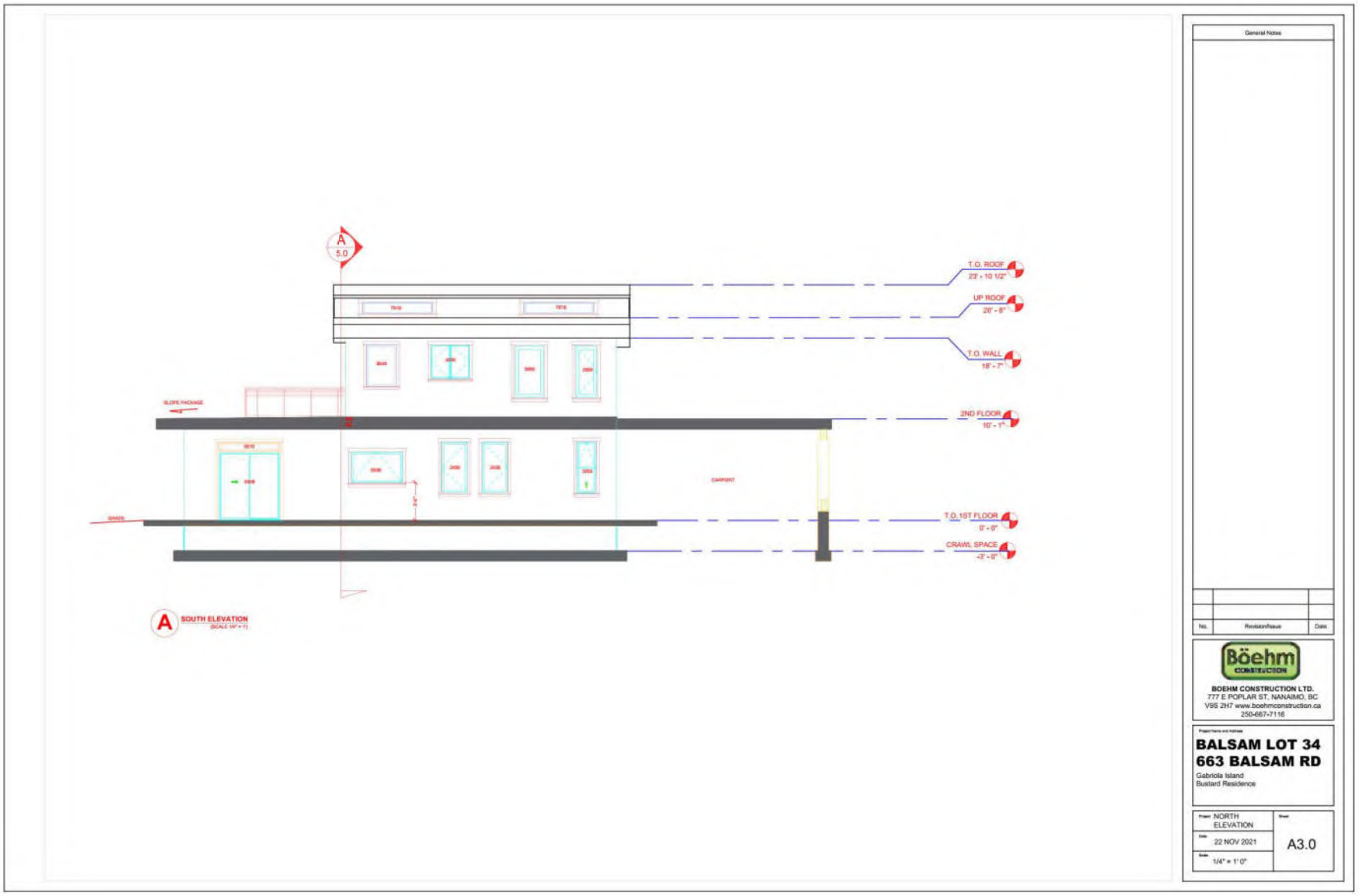
2.1 ORTHOPHOTO AND ZONING

2.2 SENSITIVE ECOSYSTEM MAPPING

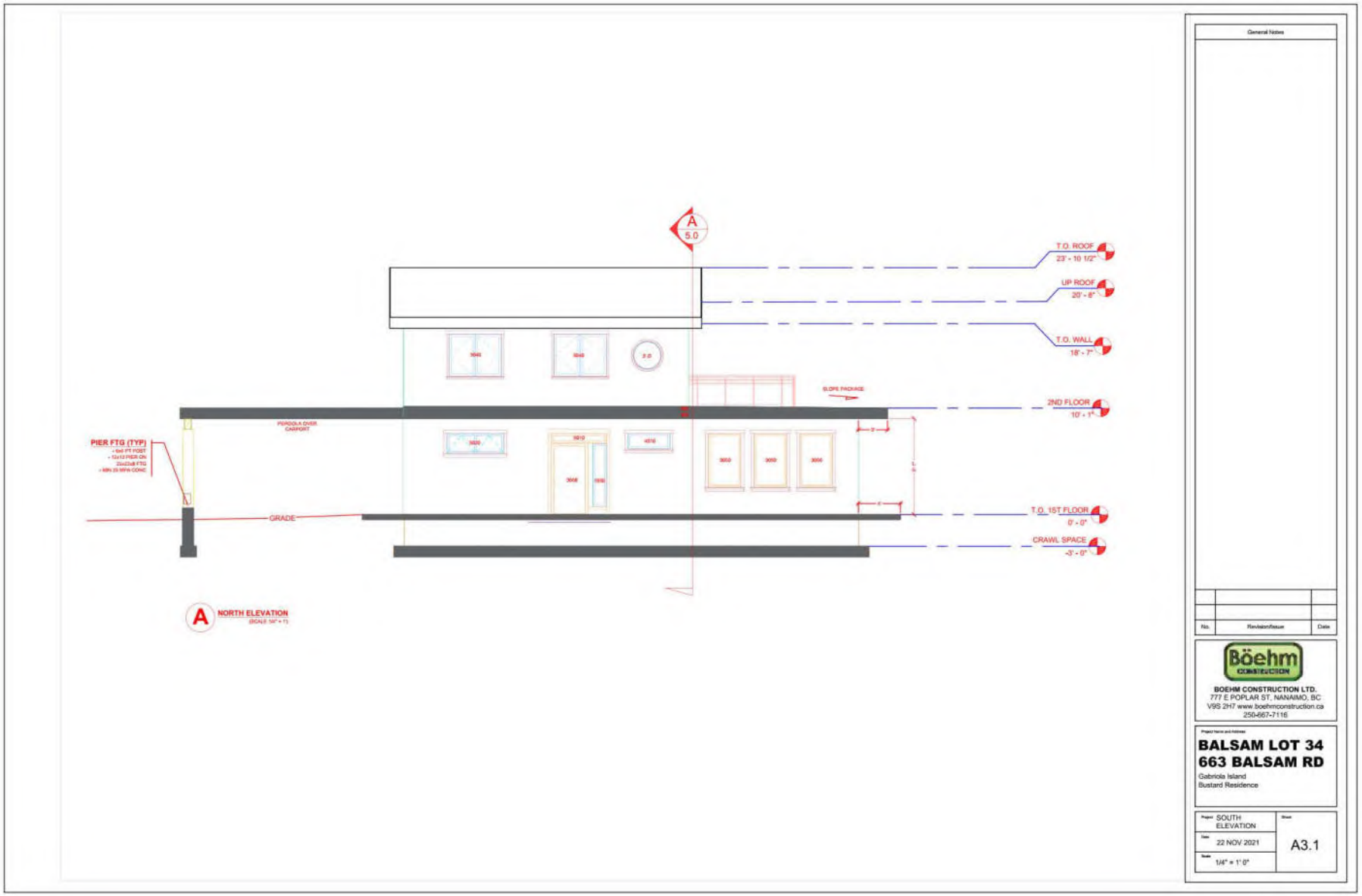
2.3 SITE PLAN


WELL
PROPOSED OVERFLOW CULVERT
179.8' [54.86m]
114.82' [35m]
13.12' [4m]
5.08' [1.55m]
GRADE UP
SB
PL
IP
OIP
EXISTING WELL
30.68' [9.35m]
100' [30.48m]
49.4' [15.05m]
13.12' [4.0m]
10.8' [3.3m]
101.70' [31m] TO WELL
PROPOSED SEPTIC FIELD
FLAGGED WETLAND BOUNDARY JULY 5/22
SEPTIC TANK LIDS
DP
BURM
4.99' [1.52m]
24' [7.32m]
PROPOSED CONCRETE FOUNDATION
43' [13.11m]
LEVEL BENCH
34
PLAN 22540
SEASONAL - GROUND WATER
14.21' [4.33m]
19.66' [6.1m]
Balsam Road
100' [30.48m]
5.08' [1.55m]
PROPOSED CARPORT
10' [3.04m]
141.8' [43.22m]
98.43' [30m]
DRIVEWAY
CULVERT
16.08' [4.9m]
179.8' [54.86m]
~60' (18.3 m)
WELL
LEGEND
HYDRO POLE
MIXED TREES
PL PROPERTY LINE
SB SETBACKS
DP DRAINAGE PATH
SITE DATA
LOT COVERAGE
= 5.72% (PROPOSED HOUSE)
General Notes
No. Revision/Issue Date
BOEHM CONSTRUCTION LTD.
777 E POPLAR ST. NANAIMO, BC
V9S 2H7 www.boehmconstruction.ca
250-667-7116
BALSAM LOT 34
663 BALSAM RD
Gabriola Island
Bustard Residence
PROPOSED LOT LAYOUT
6 AUG 2022
NTS
A1.0A

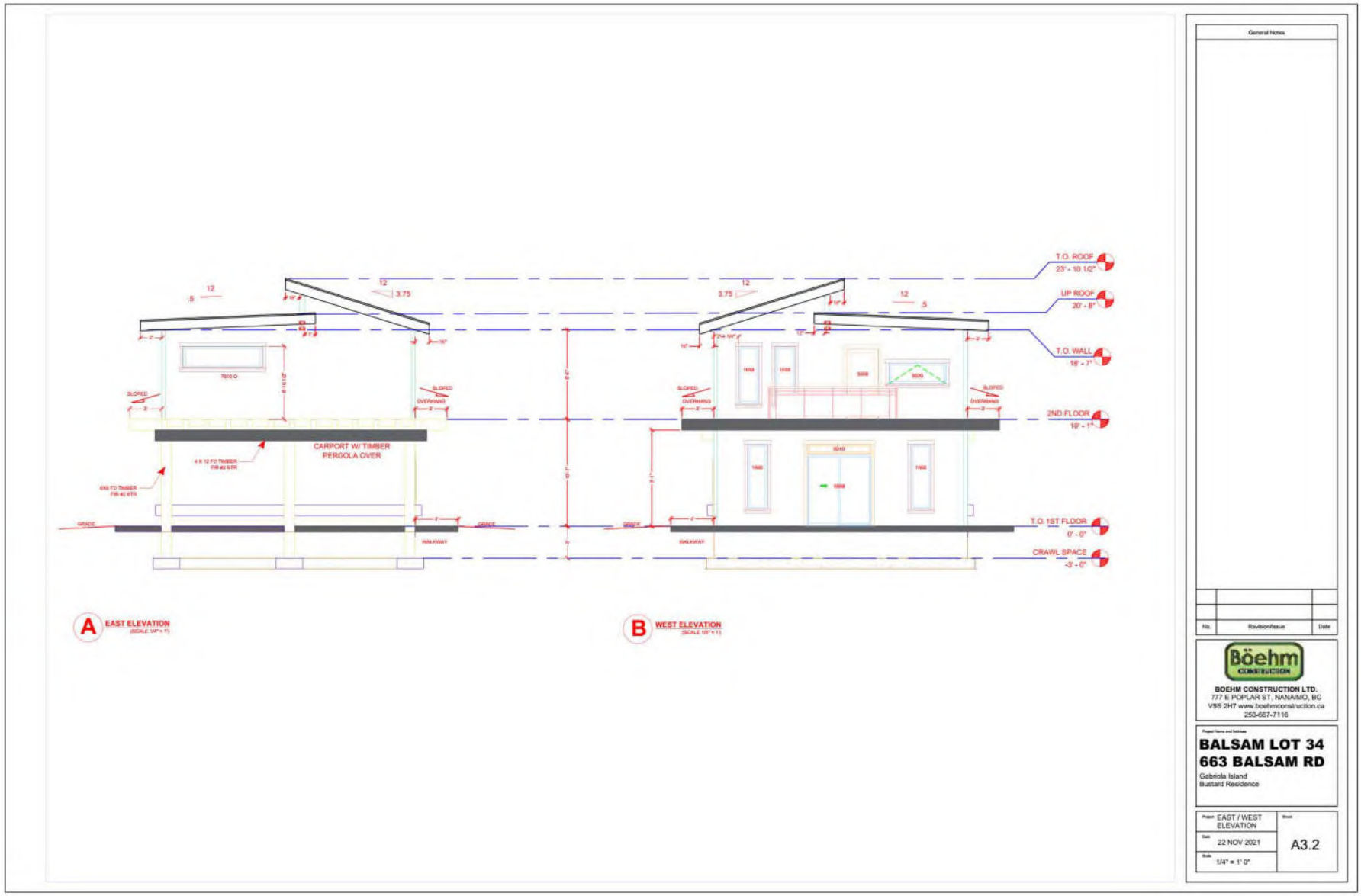
2.4 BUILDING ELEVATIONS



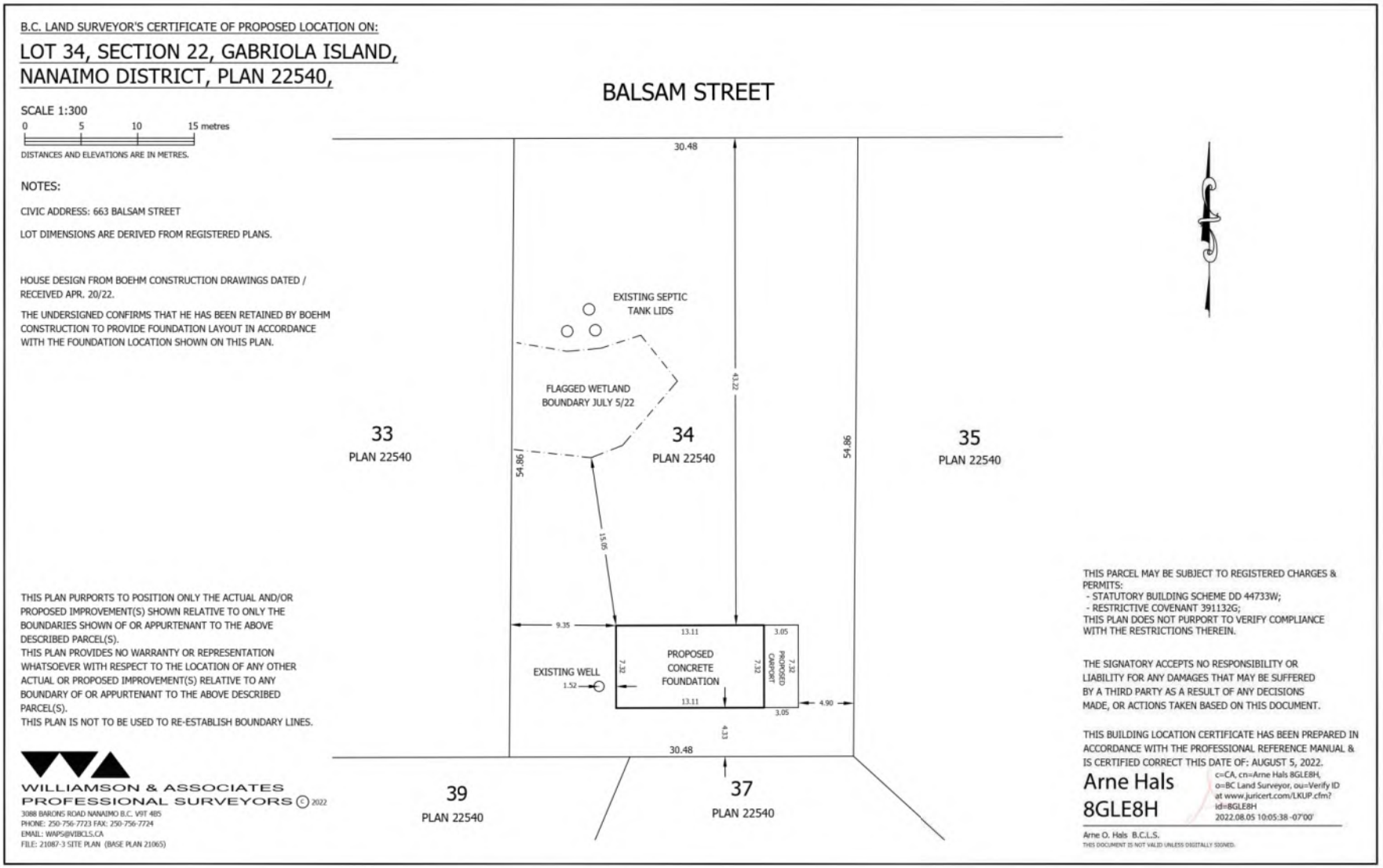
2.4 BUILDING ELEVATIONS (CONT'D)



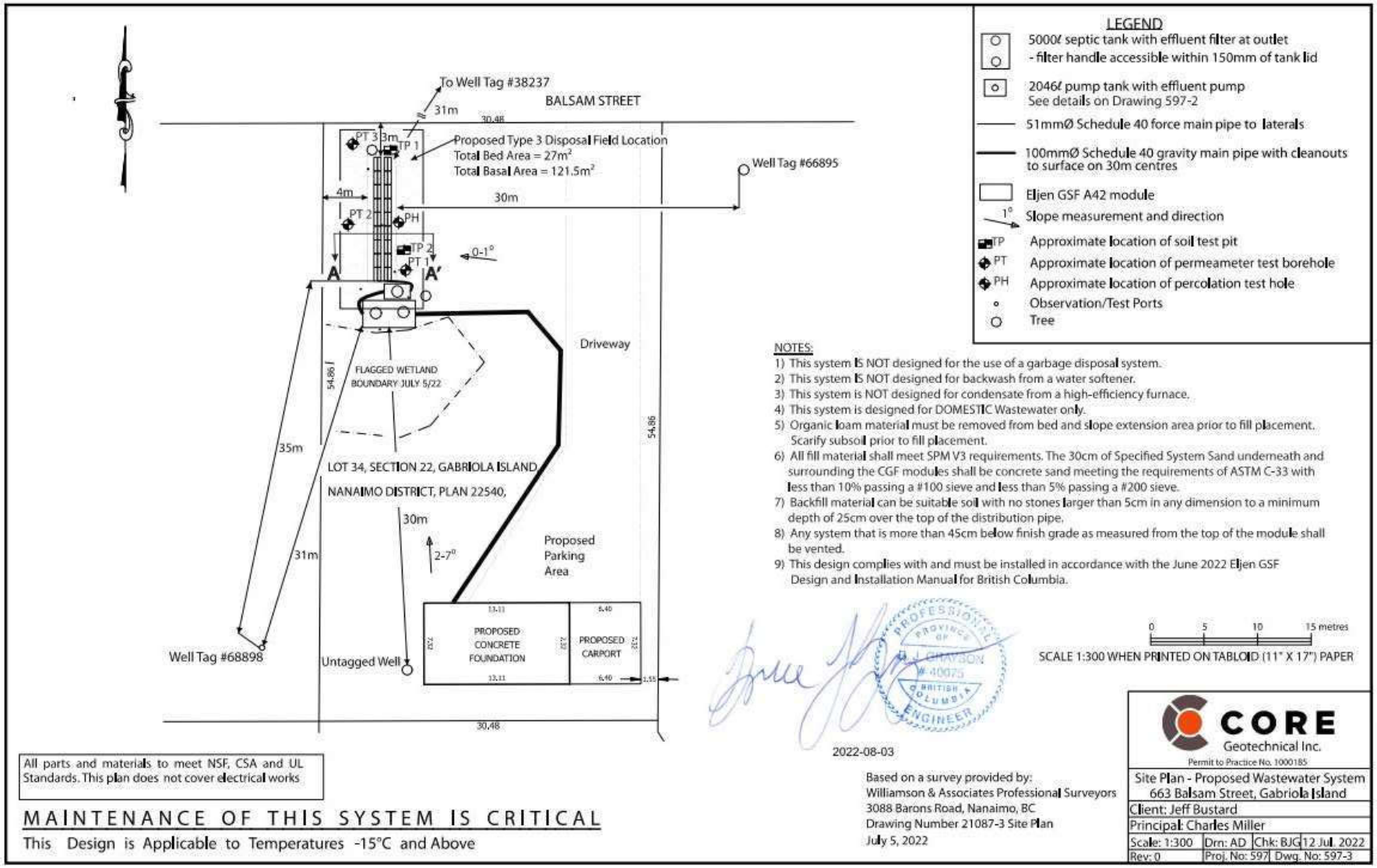
2.4 BUILDING ELEVATIONS (CONT'D)



2.5 SURVEY PLAN

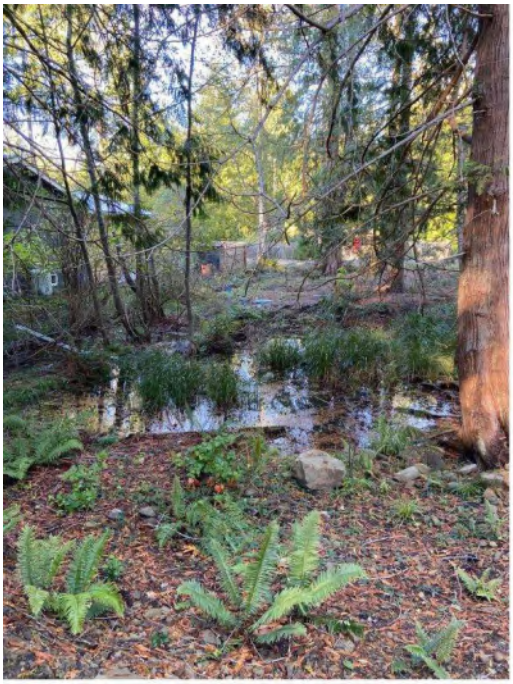


2.6 PROPOSED SEPTIC SEWAGE DISPOSAL SYSTEM



2.7 PHOTOGRAPHS

View west of septic tanks adjacent to wetland boundary (blue ribbons)



View north of wetland and neighbouring house

Graded berm and clearing for the residence

2.7 PHOTOGRAPHS (CONT'D)

View east of drainage ditch leading to culvert under the driveway

View north of wetland drainage ditch

tributary ENVIRONMENTAL

2295 Maxey Road
Nanaimo, BC V9S 5V5
(250) 706-8825

May 15, 2022

Project # 22.003

Jeff Bustard
733 Berry Boint Road
Gabriola Island, BC V0R 1X1

RE: Wetland Assessment Summary
663 Balsam Street, Gabriola Island
Islands Trust / Regional District of Nanaimo BC (PID: 003-330-435)

Tributary Environmental Consulting Inc. (Tributary) was retained to assess a seasonally wet depression at the above-noted address as part of the building permitting process for the construction of a new house. The landowner proposes to build a single family home on the previously undeveloped property zoned for Small Rural Residential (SRR) use. The septic system siting and design by CORE Geotechnical Inc. (CORE) was accepted by Island Health on September 16, 2021, and a building permit application has been submitted based on the proposed site layout and house design provided by Boehm Construction Ltd. (dated November 22, 2021). The site plan identified a seasonal drainage leading to a "standing water swamp area," which the Islands Trust requested additional information about. CORE assessed the site's surface drainage features on February 2, 2022 and found they did not meet the definition of a stream under the Water Sustainability Act (WSA) or Riparian Areas Protection Regulation (RAPR). While waiting for the building permit to be issued, clearing of the development footprint and preliminary cut and fill to level the proposed building site was completed. The septic tanks were also installed but all work on the site was stopped before the septic field could be installed.

Tributary's assessment was prompted by a recent complaint that the septic system was being installed too close to a wetland, which was followed up by a site visit from a bylaw officer and correspondence between them and the landowner. In preparing this assessment summary, I (Ian Wright, PAg, RBTech) reviewed available environmental background information and completed a site assessment on May 6, 2022. The purpose of this assessment was to provide another professional opinion on the status of the seasonally wet depression, and to provide general recommendations for the proposed development layout and construction in relation to surface drainage features so that the property may be used as intended in an environmentally responsible manner.

Site Overview

The 1,680 m^2 (0.4 acre) lot's zoning permits one single family dwelling, one secondary suite, and a maximum of 20% combined coverage by buildings and structures. Surrounding lots are also zoned SRR and appeared to be mostly built out. The property is located in the Coastal Douglas Fir Moist

Maritime (CDFmm) biogeoclimatic zone, in an unnamed watershed that covers the northwest end of Gabriola Island. No streams have been mapped in this watershed by provincial and local government sources. Terrestrial Ecosystem Mapping (TEM) identifies the area as young coniferous forest and rural development, though several mature trees were observed on the property. Site topography is characterized by a northern aspect with a gentle slope (5 to 10%) and elevations from approximately 48 m to 52 m above sea level. Soils are mapped as well draining sandy loam. No publicly available occurrences of species at risk or their critical habitat are mapped on or adjacent to the property, or sensitive ecosystems identified by TEM and the Sensitive Ecosystems Inventory. No raptor nests are mapped on or near the property. No fish occurrences have been recorded in the watershed, on or near the property. No riparian or environmental Development Permit Areas are mapped on or near the property.

Site Assessment Findings

A swamp fed by natural spring is located at the corner of Balsam Street and Spruce Avenue, which is clearly visible from the road between 335 Spruce Avenue and Balsam Street. It is assumed to be spring fed because there are no visible streams flowing into it, no culverts leading from the roadside ditch upslope on the east side of Spruce Avenue, and the area is situated near the top of a hill with little catchment area. The swamp is characterized by an open canopy of western redcedar, red alder, and Pacific willow trees, with an understorey of salmonberry, skunk cabbage, slough sedge, and common horsetail. Ponds associated with this swamp are visible on 335 Spruce Avenue and 671 Balsam Street. Drainage from the swamp and ponds follows the natural topography into the roadside ditch along the south edge of Balsam Street, and westward. Surface water was present in the roadside ditch adjacent to 335 Spruce Avenue and 671 Balsam Street, with vegetation indicative of seasonal inundation and prolonged soil saturation, such as Pacific water parsley. From the pond on 671 Balsam Street, overflows are also directed west onto 663 Balsam Street via a small (~4 to 6") pipe that is buried under the neighbour's lawn and driveway. A very small volume of water was flowing out of this pipe at the time of assessment (estimated at less than 1 liter per second), and flows from the pipe are reported to be seasonal / ephemeral.

From the pipe outlet, flows continue west in a small (~0.5 m wide by 0.3 m deep), disturbed channel and under the new driveway for about 17 m before entering the seasonally flooded depression. Based on Tributary's recent observations, the seasonally wet depression on the subject property is a small western redcedar – skunk cabbage swamp. Observed vegetation suggests that the wetland likely dries up by early to mid summer in a typical year. This interpretation is supported by previous observations by CORE and the landowner. Soils are likely saturated for over six months of the year, but surface water may not be present during dry periods throughout the year, even in winter (as seen by CORE in February). The wetland measures approximately 10 m across and covers about 102 m^2. It is characterized by a canopy of young and mature western redcedar and young red alder trees, with an understory of salmonberry, salal, red huckleberry, swordfern, lady fern, slough sedge,

and skunk cabbage. The redcedar trees have buttressed bases characteristic of wet sites. The water level at the time of assessment was relatively high following recent significant rainfall, and was above the root crowns of the red alder and swordfern. At the west edge of the property, overflow from the wetland is directed north in a recently re-graded ditch (~1 m wide by 0.5 m deep) along the west property boundary into the roadside ditch. Despite the notably high water level in the wetland, water in the outlet ditch was only 1 to 2 cm deep and flowing sluggishly.

Following the roadside ditch downslope and west of the subject property, signs of surface flow (scouring, alluvium, rafted debris, indicator vegetation) progressively become more subtle until they are absent between Lot 32 and the corner of Balsam Street and Tamarack Street (over 90 m). This suggests that during typical conditions all flows infiltrate into the soil and there is no overland flow connecting to streams downslope, except during extreme rainfall events. Any flows that reach the bottom of the hill at the corner of Balsam Street and Tamarack Street are conveyed beneath Tamarack Street in a concrete culvert that discharges onto a ~1.5 m bench before entering a wetted ditch. The wetted ditch flows down the west side of Tamarack and then turns west along the driveway to 575 Balsam Street. Swamp vegetation is present on both sides of the driveway, and flows are culverted under the driveway and directed north. A corresponding drainage emerges at Berry Point Road over 600 m to the north, just east of Barnacle Road. From the south edge of Berry Point Road, flows appeared to be piped under the adjacent waterfront lot for roughly 50 m down a moderate gradient to the marine shoreline (very likely a barrier to anadromous fish access; however, this was not assessed in detail).

Photos from this assessment are available on request. A basic site plan showing the approximate location of the wetland, proposed house, and septic is attached.

Discussion

Applicability of Riparian Areas Protection Regulation (RAPR) and DP-3

The RAPR does not apply to the wetland on the subject property or its inlet and outlet drainages for the following reasons:

1. The wetland is not capable of supporting resident native fish due to the lack of perennial habitat.

2. The wetland is isolated with no surface flow connection to potential fish habitat downstream, and therefore is not a source of nutrients and water that support fish.

As RAPR does not apply, proposed development is exempt from DP-3 guidelines.

Applicability of the Water Sustainability Act (WSA)

The wetland meets the definition of a stream under the WSA because it is a natural spring-fed swamp. It exists not because of the concentration of stormwater from impervious surfaces or some other artificial means, but because of the emergence of groundwater at the base of a hill. It also seems likely that the wetland would persist as spring fed if the small volume of flow piped from 671 Balsam Street was redirected to the roadside ditch and not onto the subject property.

What is less clear is whether the inlet or outlet drainages should be considered streams under the WSA, due to the historical modification of drainage patterns that occurred at the time of subdivision and development of the lots to the east. In conversation with the owner of 671 Balsam Street, I understand that the overflow pipe leading from their pond to the subject property was installed by a previous owner at sometime over 16 years ago. Flows from the pond are also directed to the roadside ditch, which appears to be the predominant drainage direction based on existing topography. According to the owner of 671 Balsam Street, if the overflow pipe to the subject property is plugged during heavy rainfall events, the pond floods their lawn area. As such, it seems appropriate to treat this pipe as drainage infrastructure needed to prevent flooding rather than the natural course of a historic but modified stream channel. This interpretation is supported by the low volume of flow, even in the roadside ditch that receives the overflow from all of these properties (663 and 671 Balsam Street and 335 Spruce Avenue). It seems unlikely that a continuous natural stream channel historically connected this wetland complex to other streams and wetlands downslope, given that the runoff volume would have increased post development and it still doesn't appear to have a surface flow connection. Additionally, the catchment area above the subject property is very small, at about 7,000 m^2. Based on the above, it is reasonable to treat the inlet and outlet channels as drainage ditches rather than streams.

Habitat Value of the Wetland

As mentioned above, the wetland does not support fish directly or through the provision of water and nutrients to downstream fish habitat. Also, the wetland likely dries up too early in the summer to provide breeding habitat for native amphibians. It would provide hydration for a variety of wildlife on a seasonal basis, and the vegetation has the potential to provide nesting and cover habitat for songbirds and small mammals.

Development Constraints

Several development constraints have resulted in limited options for siting the proposed house, well, and septic. Foremost is the siting of the septic system in relation to surrounding domestic wells, from which it must be setback at least 30 m. To respect this setback from all wells, while providing reasonable locations for the house, driveway, and maintaining the wetland, the proposed siting of the septic system appears to be the only footprint that works for this site. This places the

septic system almost immediately adjacent to the wetland. The Islands Trust Land Use Bylaw No. 177 states that, "a septic sewage disposal field must be sited a minimum of 30 metres (98.4 feet) from the natural boundary of the sea, lake, stream or wetland." With the wetland near the middle of the 31 m by 55 m lot, there is no location on the property that could respect this setback apart from the far southeast corner; however, that would be less than 30 m from the existing well and would be upslope of the developable area on the property. Considering the relatively limited aquatic habitat value provided the wetland, and that the wetland is an isolated feature that does not connect to more important aquatic habitat downstream, the siting of the septic system is not likely to significantly affect aquatic life. In addition to the septic system setbacks, the Land Use Bylaw specifies a 15 m building setback from watercourses. To meet this setback, the proposed house footprint would need to be shifted to the southeast corner of the lot and would likely require clearing a few additional mature trees.

Recommendations

1. Site the septic in the most appropriate location from a health standpoint. Water quality effects on aquatic life if the septic is situated as proposed adjacent to the isolated wetland will be minor assuming the system is properly maintained, and stormwater is managed appropriately.

2. Direct stormwater from the house roof leaders and any other impervious surfaces to a rock pit as far from the wetland as possible to allow it to infiltrate through the soil. Do not discharge stormwater directly into the wetland.

3. Consider whether the house footprint can be shifted further away from the wetland to meet or approach the 15 m setback. As the importance of a riparian buffer to provide the features, functions and conditions that support fish and wildlife is low for this small, isolated swamp, the main environmental concern with the final siting of the house is to avoid impacting additional mature trees.

4. Manage and maintain the inlet and outlet channels as drainage ditches. Lower the elevation of the bottom of the outlet ditch by approximately 10 cm to return the water level in the wetland to a normal level (when the water level is aligned with the bottom of the ditch, it should be below the root crowns of trees and swordferns. Install rock check dams every 2 m to slow down high flows. The channels can also be lined with rock for erosion protection.

5. As the wetland meets the definition of a stream under the WSA, it cannot be modified without a Change Approval, which is a long and somewhat complicated permitting process. Recent disturbances around the edge of the wetland should be restored by planting native riparian shrubs and ferns in mid to late October. Tributary can provide details and guidance to achieve this if needed.

Closure

I trust that this wetland assessment summary provides the essential information needed to move forward with your building permit application. Please contact me at 250-706-8825 or ian.wright@tributary.ca if you have any questions or require additional details.

Yours truly,

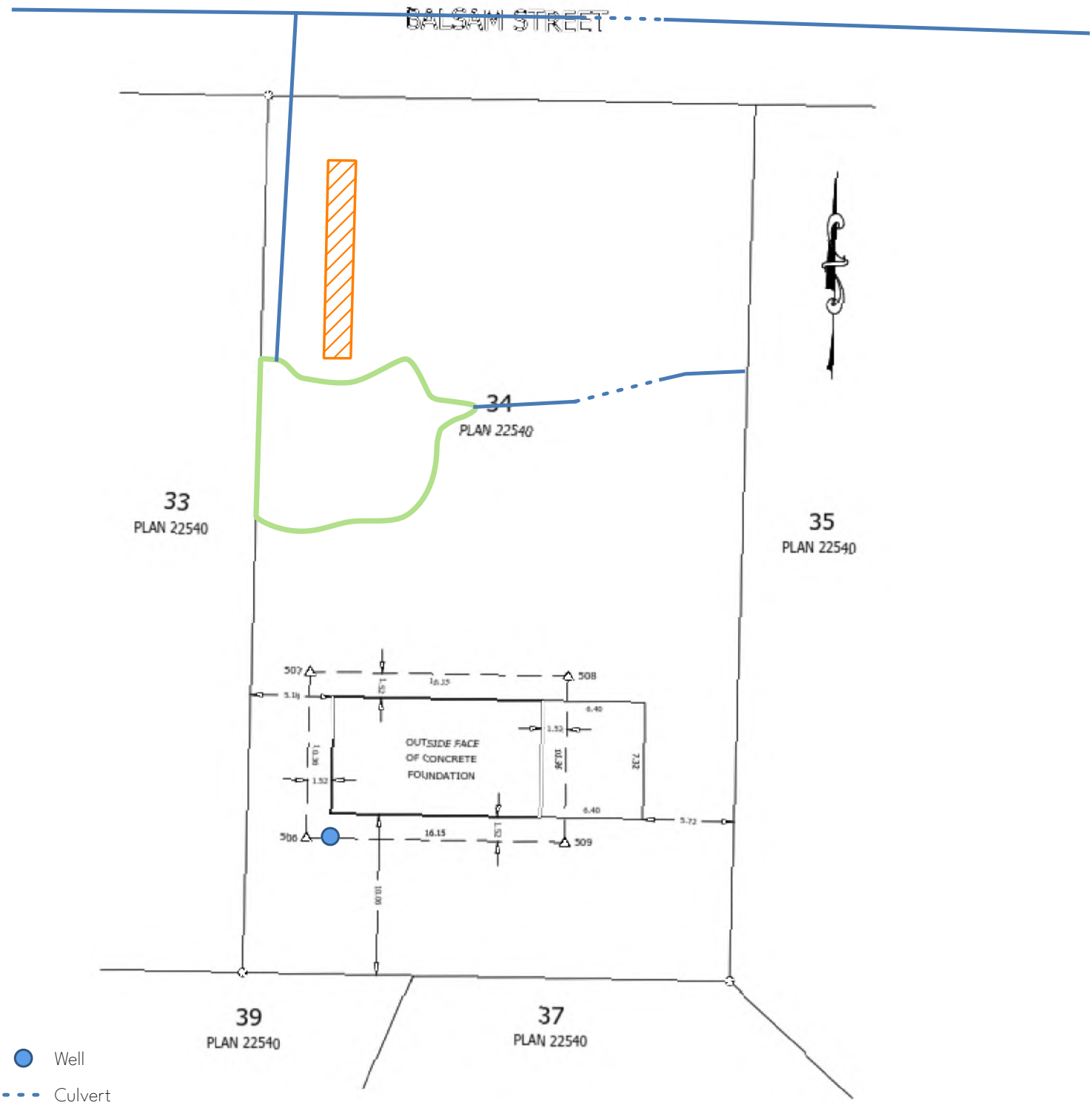
Ian Wright, PAg, RBTech
Owner, Applied Ecologist & Geospatial Analyst
Tributary Environmental Consulting Inc.

Attachments:

- Site Plan

tributary ENVIRONMENTAL

Wetland Assessment Site Plan
663 Balsam Street, Gabriola Island BC



Client: Jeff Bustard

Project: 22.003

Site plan from Williamson & Associates Professional Surveyors File: 21087-2 LAYOUT EXC BASE PLAN: 21065

Feature locations approximate: +/- 1-2 m

May 15, 2022

Tributary Environmental Consulting Inc.

2 August 2022

Our Ref: 597

597 Letter Rev 2 AD BJG 2022-08-02

Mr. Jeff Bustard, c/o Boehm Construction Ltd.
777 E Poplar Rd, Nanaimo, BC V9S 2H7

Re: Sewage Disposal System Review

663 Balsam St, Gabriola Island

Dear Sir,

Introduction

This letter presents a sewage system disposal system design for a proposed 3-bedroom residence of up to 280m^2 in area at 663 Balsam St, Gabriola Island, British Columbia.

Mr. Charles Miller of Boehm Construction Ltd. requested the work on behalf of the owner of the property, Mr. Jeff Bustard.

This work was carried out in accordance with our Proposal No. 597, the Canadian Foundation Engineering Manual, and relevant Engineers and Geoscientists BC Guidelines for "Geotechnical Engineering Services for Building Projects"[1] and "Onsite Sewerage Systems"[2].

Background

We recently reviewed the sewerage system design for a nearby property (Our Project Number 525). The horizontal loading rate (HLR) there would have been assessed as 23ℓ/d/m^2 except that a proprietary system was adopted, permitting a higher HLR.

The amendment was required because someone has alleged that there is a wetland area on the site.

Site Visit

Anita Davey, P.Ag. visited the site on June 15, 2021, February 1, 2022 and July 4, 2022 to conduct field and site assessments.

[1] https://www.egbc.ca/getmedia/5aa53560-e3b2-42b5-88f2-678f738aad7f/APEGBC-Guidelines-Geotechnical-Engineering-Services-for-Building.pdf.aspx
[2] https://www.egbc.ca/getmedia/b69496e9-79bc-41b7-a28f-522f9b92957b/V1-3-Onsite-Sewerage-Systems.pdf.aspx

Location

The legal address of the island lot is Lot 34, Section 22, Nanaimo Land District, Plan VIP22540. The parcel identifier (PID) is 003-330-435. The total area of the lot is about 0.17Ha. The property is bounded on the South, East and West by rural residential properties and on the North by Balsam Street.

The sewage disposal site is shown on Drawing Number 597-3, attached.

Topography

The lot is located on the North-Western slopes of a hill, the crest of which is at an elevation of about 65m relative to Canadian Geodetic Datum (CGD).

The upper elevation of the site is approximately 52m relative to CGD at the South of the lot, sloping down towards the North, to an elevation of approximately 48m relative to CGD. The lot is steepest, with a slope of approximately 10%, at the Southern portion of the lot (where the residence is planned), but levels to a gentle slope of approximately 3% at the Northern area where the disposal field is planned.

Figure 1: Site Location relative to Gabriola Island of Nanaimo Regional District. The site is indicated by arrow point. North is towards the top of the page. Do not scale.

Vegetation

The subject property is located within the Coastal Douglas Fir vegetation zone. The predominant vegetation is mature trees partially cleared to provide a building area.

Drainage

We observed a seasonal surface drainage pattern on this lot. This drainage is a man-made ditch (about 0.5m deep and 1m wide with sideslopes of 1V:3H) that was used to drain land to the east of the lot.

We observed no groundwater seepage or “breakouts” on the property.

Existing Development

The rural property is undeveloped and partially cleared.

Figure 2: View from edge of proposed driveway to the North-West over the proposed disposal field.

Figure 3: Bedrock Geology of subject property (from Map Place). North is towards the top of the page. Do not scale.

Figure 4: Soil Classification of subject property (from IMapBC). North is towards the top of the page. Do not scale.

Geology and Pedology

Reference to published geology maps indicates that the site is underlain by undivided sedimentary rocks of the Nanaimo Group, which were deposited in the mid to late Cretaceous Period of Geological Time, about 66 million years to 100 million years ago. No Quaternary sediments were mapped at the site.

No rock outcrops were observed in the area of the disposal field.

The Soils of the Gulf Islands of British Columbia, Volume 4: Soils of Gabriola and lesser islands, indicates that the soil comprises Saturna soils[3] , which are described as "Channery[4] sandy loam colluvial and glacial drift materials over sandstone bedrock". and is considered to be "well-draining". Saturna soils may be found in "subdued and hummocky, occasionally ridged" terrain; bedrock may be exposed at random.

Fieldwork

Methods

A geotechnician carried out additional fieldwork of the site assessment on July 4, 2022.

The technician carried out in-situ permeability (permeameter) testing at 3 sites to enhance the infiltration coverage study of the disposal area as required by the SSSPM V3 soil testing and reporting requirements.

The in-situ permeability test conducted was a one-head Guelph permeameter test. A one-head procedure was chosen since the readings will always give a positive result. The one-head procedure is

[3] https://www.env.gov.bc.ca/esd/distdata/ecosystems/Soils_Reports/bc43-4_report.pdf
[4] Channery soil is, by volume, more than 15 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches along the longest axis. A single piece is called a channer.

for applied engineering purposes where the saturated hydraulic conductivity (k_{fs}) needs only be known within a precision of 2 decimal places or less. The two-head procedure is preferred when more precision is required (e.g. for research). The Combined Reservoir readings method, as opposed to the Inner Reservoir only reading method was chosen for this in-situ permeability testing. The combined reservoir method is used in soil of moderate to high permeability. Soils that fit into this category typically have medium to coarse texture, some degree of structure, and little to no cementation or compaction.

Each permeameter test was conducted as follows:

- A borehole was augered using the Soil Auger to remove bulk amounts of soil. The well hole was augered by rotating the handle in a clockwise direction applying steady, but somewhat firm, downward pressure on the handle;
- The Sizing Auger was used as a finishing tool to produce a proper sized well hole uniform geometry, meeting the size and shape requirements of the model, and to clean debris off the bottom of the well hole. The Sizing Auger is designed to produce a hole that is uniformly 6 cm in diameter with a flat bottom;
- In order to obtain reliable and representative results using the Guelph Permeameter, the technician used a Well Prep Brush to remove a potential smear layer on the sides of the auger hole. The Well Prep Brush was pushed into the well hole and all the way to the bottom. Next, the Well Prep Brush was quickly and evenly pulled straight up and out of the well hole
- The permeameter was assembled and the permeameter reservoir was filled with water.
- The support tube of the permeameter was lowered into the wellhole;
- A well head height of between 5cm and 10cm was selected on the upper air tube and recorded; in this instance 5cm was chosen as the well height;
- Readings were taken at regular time intervals to record the water level in the selected reservoir as read against the scale stamped on the Inner Reservoir Tube; in this instance a time interval of one minute was chosen;
- The technician monitored the rate of fall of water in the reservoir until the rate of fall did not significantly change in three consecutive time intervals;
- The technician removed the permeameter from the wellhole and filled the wellhole with soil.

Results

Permeameter tests indicated that the soil hydraulic conductivity, k_{fs}, is in the range of 1000mm/d to 2000mm/d.

Proposed Development

The proposed development is for sewerage disposal system for a proposed 3-bedroom residential dwelling of up to 280m^2 in area.

All subsurface drainage, from perimeter drains or roof leaders will be collected and routed away from the sewerage disposal system.

Ground Conditions

Soil classification and geology maps are helpful, but not infallible.

The soil map indicated that Saturna soil would be located at the wastewater disposal field site, and the conditions are consistent with Saturna soils, comprising Sand and Silt in varying proportions to 1.1m below the ground surface, where the test pits were terminated

The soil is, in our opinion, consistent with Saturna soil.

It should be noted that groundwater levels and flows are transient, and are affected by such factors as preceding climatic conditions and soil and rock permeability.

Discussion and Recommendations

Sewage System Design

Our design for the sewage disposal system is summarized below:

- The system was designed in accordance with Table II-8 of Version 3 of the Sewerage System Standard Practice Manual (SSSPM)[5].
- The daily design flow rate was applied to the soil media hydraulic loading rate to determine the required area of infiltrative surface for the disposal field, as follows:
- Daily Design Flow [DDF] = 3-bedroom residence of up to 280m^2 in area = 1300ℓ/d;
- The soil conditions included:
    - Moist brown sand with silt, to brown silt with sand; and
    - a restrictive layer due to bedrock determined to be 1.1m from surface.

We chose Type 3 (Combined Treatment and Dispersal with pathogen reduction) system for the following reasons:

- The area available beyond required wells horizontal setbacks is limited.
- The area available beyond surficial drainage horizontal setbacks is limited.
- Pathogen attenuation will remove possible health hazards should the treated effluent drain into the surface drainage feature.
- The required Area of Infiltrative Surface for Type 1 systems beyond each of the following constraints cannot be met, when compared to each other:

Table 1: Setbacks for Type 1 System

Limiting Features	Required Setback	Available Setback(s)
Domestic Water Supply Wells	30m	25m to 29m
Property Lines	3m	2m
Intermittent Side Slope Drain (Wetland)	3m	0m

[5] https://www2.gov.bc.ca/assets/gov/environment/waste-management/sewage/spmv3-24september2014.pdf

Table 2: Setbacks for Type 3 System

Limiting Features	Required Setback	Available Setback(s)
Domestic Water Supply Wells	30m	30m to 36m
Property Lines	3m	3 m to 4m
Intermittent Side Slope Drain (Wetland)	3m	4.5m

We selected the Eljen GSF Treatment system with additional basal filtering sand for the Type 3 system. The Eljen GSF Manual (June 2022)[6] states that in British Columbia a maximum peak HLR of 72ℓ/d/m^2 be used. The Design Capacity Calculation is summarized below:

- DDF= unchanged from above = 1300ℓ/d
- HLR based on Eljen GSF Manual (2022) = 72ℓ/d/m^2
- Required minimum number of Eljen mats = 18

Pathogen Removal

The proximity to the intermittent fresh water of the surface drainage feature requires the consideration of Pathogen removal, classified as Type 3 Treatment. When applied to the Fecal Organism Removal Chart, the combination of the Eljen GSF Combined Treatment and Dispersal System with 0.3m imported sand below the mats and the 1.1m native soil above the restrictive layer will combine to reduce the pathogen load (when microdosed - 36 doses/day) as follows:

- Residential raw sewage contains an average of 1x10^6 colony forming units (cfu)/100ml.
- Eljen GSF Combined Treatment and Dispersal (CTDS) provides 1x10^2 fecal coliform reduction in the same volume;
- 0.3m imported clean coarse sand provides approximately 1x10$^{1.2}$ fecal coliform reduction in the same volume;
- 1.1m sand and silt (the native soil at the dispersal field site) provides 1x10$^{6.1}$fecal coliform reduction in the same volume;
- Total coliform reduction = 1x10^6÷1x10^2÷1x10$^{1.2}$÷1x10$^{6.1}$= 1x10$^{-3.3}$cfu/100ml. This is less than the accepted 400 (4 x10^2)cfu/100ml in the S3PM V3.

[6] https://www.eljen.com/files/Design%20Manuals-%20PDF/BC%20Manual%6_6_22.pdf

Nitrogen Removal

The proximity to the intermittent fresh water of the surface drainage feature requires the consideration of Nitrogen removal. Testing of the Eljen GSF system at NSF laboratories has proven greater than 50% removal of Total Nitrogen through nitrification through the Eljen GF module system[7]. Further nitrification in the native soil removes a further minimum 50% of the remaining Nitrogen, and as a result less than 25% and as little as 10%, of the total Nitrogen entering the system remains in the soil above the restrictive layer when microdosed (36 doses/day).

Installation

The system installation will be reviewed by Core Geotechnical Inc.

Operation and Maintenance

Wastewater disposal fields do not last indefinitely. A wastewater disposal field operated and maintained properly should last for up to about 40 years.

The owner of the sewerage system is responsible for its correct operation and maintenance. The owner of the sewerage system shall read, understand and follow the manufacturer's operation and maintenance requirements. If there is ambiguity or conflict between the manufacturer's instructions and others' recommendations, then that ambiguity or conflict shall be resolved by Core Geotechnical Inc.

Core Geotechnical Inc. shall not be held responsible for failure of the sewerage system due to improper or inadequate maintenance or operation.

Closure

Based on the results presented herein, we consider that the sewage system has been sized in accordance with the relevant guidelines, and is adequate for the proposed development.

We reiterate that it is the owner's responsibility at all times to operate and maintain the sewerage system in accordance with the manufacturer's requirements as well as our recommendations. We trust that this meets your present requirements. Should you have any questions, please do not hesitate to contact the undersigned at your earliest convenience.

Core Geotechnical Inc.

Bruce Grayson, P.Eng.
Responsible Registrant

2022-08-03

[7] https://www.eljen.com/files/pdfs/GSF%20Product%20Overview%20Brochure%20NEW.pdf

Attach:

I. General Notes
II. Amended Island Health Record of Sewerage System
III. Drawing 597-3- Amended Sewerage System Layout
IV. Drawing 597-4- Eljen GSF Raised Bed Cross-Section Drawing
V. Drawing 597-5- Amended Sewerage System Field Layout
VI. Amended General Summary of Sewerage System
VII. Permeameter Test Results

GENERAL NOTES

This report comprises the results of a site investigation carried out in accordance with normally-accepted methods for a specific purpose and client as defined in the introductory section(s) of the document. The report should not be used by other parties or for other purposes without prior consultation with this firm, as it might not contain adequate or appropriate information for extrapolation.

LOGGING

The information on the Logs (Test Bores, Test Holes, Natural Exposures etc.) has been based on a visual and tactile assessment except at the discrete locations where test information has been reported (eg field and/or laboratory results).

Reference should be made to our standard sheets for the definition of our logging procedures (Soil and/or Rock Descriptions, as appropriate).

GROUNDWATER

Unless otherwise indicated, the water levels given on the logs are the levels of free water or seepage in the test hole recorded at the given time of measuring. The measured ground water level may be affected by the method of investigation (for example, if rotary drilling is utilised, drilling fluids will be pumped into the ground).

The actual groundwater level may differ from the recorded level depending on material permeabilities. Further variations of this level could occur with time due to such effects as seasonal and tidal fluctuations or construction activities. Final confirmation of levels can only be made by appropriate instrumentation techniques and programmes.

SAMPLING

Samples extracted during the fieldwork phase of a site investigation may be 'disturbed' or 'undisturbed' (as indicated on the logs) depending on the intended mature and purpose of the sample as well as the practicable method of extraction, transportation, extrusion and testing. This aspect should be taken into account when assessing test results which must of necessity reflect the effects of such disturbance.

Generally, 'disturbed' samples would be suitable for visual identification, moisture content determination, Atterberg Limits testing, compaction and California bearing ratio (CBR) testing, amongst others.

The amount sampled is also a limiting factor in the suitability for testing purposes, for example, a minimum of 10 kg is necessary for compaction and CBR testing.

'Undisturbed' samples are normally necessary for laboratory testing such as shrink-swell tests. These samples are obtained by pushing a thin-walled, mild steel tube with a machined cutting edge into the soil, and extracting the assembly. The soil (normally of nominal 50 mm diameter) is extruded at the laboratory prior to testing.

LABORATORY TESTING

Laboratory testing is normally carried out in accordance with appropriate standards (or specific ones, if requested). All testing will be carried out in a sub-contracted laboratory. Where tests are used which are not covered by standard procedures, details are given in the report.

All soil properties (as measured by laboratory testing) exhibit inherent variability and thus a certain statistical number of tests is required in order to predict an average property with any degree of confidence. The site variability of soil strata, future changes in moisture and other conditions and the discrete sampling positions must also be considered when assessing the representative nature of the laboratory programme.

Certain laboratory tests provide interpreted soil properties as derived by conventional mathematical procedures. The applicability of such properties to engineering design must be assessed with due regard to the site, sample condition, procedure and the proposed development.

INTERPRETATION OF RESULTS

The discussion and any recommendations contained within this report are normally based on a site evaluation from discrete test hole data. Generalised or idealised subsurface conditions (including any cross-sections contained in the report)have been assumed or prepared by interpolation and /or extrapolation of these data. As such, these conditions are an interpretation and must be considered as a guide only.

CHANGE IN CONDITIONS

Local variations or anomalies in the generalised ground conditions used for this report can occur, particularly between discrete test hole locations. Furthermore, certain design or construction procedures may have been assumed in assessing the soil-structure interaction behaviour of the site. Any change in design, in construction methods, or in ground conditions as noted during construction, from those assumed in this report should be referred to this firm for appropriate assessment and comment.

FOUNDATION DEPTH

Where referred to in the report, the recommended depth of any foundation (piles, caissons, footings, etc.) is an engineering estimate of the depth to which they should be constructed. The estimate is influenced and perhaps limited by the fieldwork method and testing carried out in connection with the site investigation, and other pertinent information as has been made available. The depth remains, however, an estimate and therefore liable to variation. Foundation drawings, designs and specifications based upon this report should provide for variations in the final depth depending upon the ground conditions at each point of support.

REPRODUCTION OF REPORTS

Where it is desired to reproduce the information contained in this report for the inclusion in the contract documents or engineering specification of the subject development, such reproduction shall include all of the report, including appendices (if any).

SOIL DESCRIPTION

Core Geotechnical Inc. describes a soil in terms of its visual and tactile properties. This sheet is intended to complement test logs and, relates to field samples and exposures as applicable. The description involves an evaluation of each of the items listed below and is in general agreement with the Canadian Foundation Engineering Manual.

SOIL TYPE

The soil type is described according to its estimated grain size composition and the tactile behaviour (plasticity) of fines (silt and clay fraction). The following table provides a guideline for the basis of the soil description:

Soil Classification	Particle Size
Silt and Clay (differentiated by Atterberg Limits Tests)	< 0.06 mm (the 0.075 mm sieve size is commonly used in practice)
Sand	0.06 - 0.2 mm (fine), 0.2 - 0.6 mm (medium), 0.6 - 2 mm (coarse)
Gravel	2 - 6 mm (fine), 6 - 20 mm (medium), 20 - 60 mm (coarse)
Cobble	60 - 200 mm
Boulder	> 200 mm

Where a soil contains one main soil type with up to 5% of a secondary soil type, it is described as having a trace of the secondary soil type. Similarly, if the proportion of the secondary soil type is within the range of 5 - 12%, it is described as having some of the secondary soil type. If the soil has 12 - 50% of the secondary soil type, the secondary soil type is used as an adjective in the description, eg Sandy CLAY, where the main soil type is clay, with up to 50% sand by weight. A soil with, say, 20% gravel, 30% sand and 50% clay would be described as a Gravelly Sandy CLAY.

STRENGTH (CONSISTENCY/RELATIVE DENSITY)

This assessment is based on the effort required to penetrate and/or mould the soil, and is an indicator of the shear strength.

Granular soils are generally described in terms of relative density (density index) as listed in the Canadian Foundation Engineering Manual. These soils are inherently difficult to assess, and normally a penetration test procedure (SPT or CPT) is used in conjunction with published correlations. Alternatively, in-situ density tests may be carried out in conjunction with minimum and maximum density (laboratory) tests.

Cohesive soils can be assessed by direct measurement (eg shear vane, pocket penetrometer [shown as PP* on the logs]) or estimated approximately by tactile means and/or the aid of a geological pick as given in the following table. It is emphasised that a 'design' shear strength must take cognisance of the in-situ moisture content and the possible variation of moisture with time, climate, and other factors.

Term	Tactile Properties	Unconfined Compressive Strength, q_u (kPa)
Very Soft	Extrudes from fingers without difficulty. Soil may tend to flow.	<25
Soft	Extrudes from fingers when squeezed.	25 -50
Firm	Thumb may penetrate with moderate effort. Moulded by light finger pressure.	50 - 100
Stiff	Moulded by moderate finger pressure.	100 - 200
Very Stiff	Moulded by strong finger pressure.	200 - 400
Hard	Depending on moisture condition, may be moulded by very strong finger pressure or may tend to	>400
Friable	Soil is sugary, or crumbles without meaningful result on a pocket penetrometer.	

MOISTURE

The moisture condition of the soil is most applicable for cohesive soils as an aid to the assessment of consistency and workability. The moisture condition may be related to the estimated plastic limit (Wp or PL) eg m<Wp where the soil is assessed as being drier than the estimated plastic limit (In the field, this is often assessed by an inability for the soil to roll out into threads of 3 mm diameter.); m=Wp where the soil is assessed as being approximately at the plastic limit, ie it may just be rolled out into threads of 3 mm diameter; and m>Wp, where the soil is assessed as being wetter than the plastic limit (ie the soil is able to be rolled into threads of less than 3 mm diameter).

Non-cohesive soils may be described as being either Dry (dusty, dry to the touch), Moist (damp, no visible water) or Wet (visible free water, saturated condition). Ground water observations are noted on all test logs.

COLOUR

Colour may be an aid to the correlation of data between test locations and for subsequent excavation operations. The prominent colour is noted, followed by (mottled, streaked, stained etc) secondary colours as applicable. Colour is usually described at field moisture condition, however, both wet and dry colours may be recorded.

OTHER TERMS

Some other terms which the layperson may not be familiar with might be used in the description of a soil. In most cases these would be referenced in The Canadian Foundation Engineering Manual. Some of the more common of these terms are outlined below:

Fill - soil which has not been laid down by nature, ie it has been man-made.
Till - natural soil compacted and abraded under the weight and movement of a glacier.
Alluvium - natural soil laid down in streams, lakes, estuaries, dunes etc.
Residual - soil derived from rock weathered in-situ
Colluvium - soil deposited by natural transport down a slope (also called slopewash)
Talus- debris such as cobbles and boulders, generally at the toe of a slope
Glacio-Marine – soil deposited in a marine environment beneath a glacier

ROCK DESCRIPTION

Core Geotechnical Inc. describes a rock based on methods described in the Canadian Foundation Engineering Manual, together with local practice. This sheet is intended to complement test logs, and relates to cored rock, field samples and exposures as applicable. The description involves an evaluation of each of the items listed below and is in general agreement with the Canadian Foundation Engineering Manual.

ROCK TYPE

The rock type is described according to its assessed origin (ie sedimentary, igneous volcanic/hypabyssal, pyroclastic, igneous plutonic, and metamorphic) and estimated grain (crystal, clast, phenoclast etc) size composition. The following table provides a guideline for the basis of the rock type description:

SEDIMENTARY			**IGNEOUS**					**METAMORPHIC**
Clastic	Non-Clastic *Chemical*	Non-Clastic *Organic*		Acid	Intermediate	Basic	Pyroclastic (e.g. Ash / Bombs)	
Conglomerate Sandstone Siltstone Claystone Shale	Limestone Chert Gypsum	Coal	**Volcanic** (e.g. Lava) *Fine Grained*	Rhyolite	Trachyte	Basalt	Agglomerate Volcanic Breccia Tuff	Grade: Low ⇧ High Gneiss Quartzite Schist Slate Phyllite
			Hypabyssal (e.g. Sill) *Medium Grained*	Porphyry Quartz/Orthoclase	Porphyry Plagioclase	Dolerite		
			Plutonic (e.g. Batholith) *Coarse Grained*	Granite	Syenite, Diorite	Gabbro		

SEDIMENTARY ROCKS

Sandstone and Conglomerate are defined as rocks containing more than 50% of sand sized grains and gravel sized fragments, respectively. Similarly, Claystone and Siltstone are defined as rocks containing more than 50% of clay or sericitic material, and silt sized granular particles, respectively, AND where the rock is not laminated. Laminated rocks containing more than 50% of clay and/or silt sized particles are defined as shale. Rocks possessing characteristics of two groups are described by their predominant particle size with reference also to the minor constituents, eg clayey sandstone, sandy shale.

STRENGTH

This assessment refers to the strength of the rock substance, not the strength of the rock mass. The strength of the rock substance is estimated by the Point Load Strength Index $I_{s(50)}$ and normally refers to the average of the strength measured in the direction perpendicular to the bedding, and the strength measured parallel to the bedding, for sedimentary rocks. The table below describes the strength classifications used by this firm:

Term	Abbr.	Field Guide	$I_{s(50)}$ (MPa)
Extremely Low	EL	Easily remoulded by hand to a material with soil properties.	<0.03
Very Low	VL	May be crumbled in the hand. Sandstone is "sugary" and friable.	<0.1
Low	L	The core* may be broken by hand and easily scored with a knife. Sharp edges of core may be friable and break during handling.	<0.3
Medium	M	The core* can be broken by hand with considerable difficulty. Readily scored with knife.	<1
High	H	The core* cannot be broken with unaided hands, can be slightly scratched or scored with knife.	<3
Very High	VH	The core* cannot be broken readily with hand held hammer. Cannot be scratched with pen knife.	<10
Extremely High	EH	The core* is difficult to break with hand held hammer. Rings when struck with a hammer.	>10

*A piece of core 150 mm long and 50 mm diameter

WEATHERING

The assessment of weathering does not imply engineering behaviour, however it may assist in identification. No distinction is drawn between chemical weathering and alteration for most engineering purposes. These procedures are collectively described as weathering using the following terms which do not describe the related strength change. Carbonate rocks may not necessarily conform to this classification.

Term	Abbreviation	Definition
Extremely Weathered	EW	The rock exhibits soil-like properties though the texture of the original rock is still evident.
Highly Weathered	HW	Limonite staining or colour change affects the whole of the rockmass and other signs of chemical or physical decomposition are evident.
Moderately Weathered	MW	Staining extends throughout the whole of the rockmass and the original colour is no longer recognisable.
Slightly Weathered	SW	Partial staining or discolouration of the rockmass, usually by limonite, has taken place.
Fresh	Fr	Rockmass unaffected by weathering.

FRACTURING and BEDDING

These important features can control the overall behaviour of a rockmass. All types of natural fractures across which the core is discontinuous are noted. These fractures include bedding plane partings, joints and other defects but exclude artificial fractures such as drilling breaks. The nature of the defects (joints, partings, seams, zones and veins) is also noted with description, orientation, infilling or coating, shape, roughness, thickness, etc. given generally in accordance the Canadian Foundation Engineering Manual. The spacing of natural fractures excludes bedding partings unless there is evidence that they were separated prior to drilling. This notwithstanding, bedding partings may be considered planes of weakness in an engineering assessment.

Term	Description
Fragmented	The core is comprised primarily of fragments of length less than 20 mm, and mostly of width less than the core diameter.
Highly Fractured	Core lengths are generally less than 20 - 40 mm with occasional fragments.
Fractured	Core lengths are mainly 30 mm - 100 mm with occasional shorter and longer sections.
Slightly Fractured	Core lengths are generally 300 mm - 1 m with occasional longer sections and occasional sections of 100 mm - 300 mm.
Unbroken	The core does not contain any fractures.

Bedding Spacing may be described based on the thickness of the layering, as follows:

Thinly Laminated	Laminated	Very Thinly Bedded	Thinly Bedded	Medium Bedded	Thickly Bedded	Very Thickly Bedded
<6mm	6mm - 20 mm	20mm - 60 mm	60mm - 200 mm	200mm - 600 mm	600mm - 2 m	> 2m

GRAPHIC SYMBOLS

SOIL TYPE		ROCK TYPE	
	Topsoil		Core Loss
	Fill		Sandstone
	Asphalt		Limestone
	Concrete		Shale
	Sand		Coal
	Gravel		Siltstone
	Clay		Basalt
	Silt		Bedrock
	Peat		
	Till		
	Boulders and Cobbles		

TEST PIT TP1

Core Geotechnical Inc
1-5148 Metral Drive
Nanaimo, BC, V9T 2K8
Telephone: 250-714-2321

CLIENT Jeff Bustard c/o Charles Miller
PROJECT NAME Soil Assessment
PROJECT NUMBER 597
PROJECT LOCATION Lot 34, Balsam St, Gabriola Island
DATE STARTED 21-6-15 **COMPLETED** 21-6-15
GROUND ELEVATION _____ **TEST PIT SIZE** _____
EXCAVATION CONTRACTOR Boehm
GROUND WATER LEVELS:
EXCAVATION METHOD mini excavator
AT TIME OF EXCAVATION ---
LOGGED BY AD **CHECKED BY** AD
AT END OF EXCAVATION ---
NOTES
AFTER EXCAVATION ---

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE	NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (kPa)	DRY UNIT WT. (Mg/m^3)	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0.0		sand and silt, moist, dark brown, some organics							
		WELL GRADED SAND WITH SILT Soft, moist, brown sand, some silt with some gravel. No mottling, no water seepage							
0.5			GB						
1.0		SILT WITH SAND Soft, moist, brown silt, some sand, some gravel. No mottling, no water seepage	GB						
		SANDSTONE Fractured sandstone							
		Bottom of test pit at 1.10 m.							
1.5									
2.0									
2.5									
3.0									

TEST PIT TP2

Core Geotechnical Inc
1-5148 Metral Drive
Nanaimo, BC, V9T 2K8
Telephone: 250-714-2321

CLIENT Jeff Bustard c/o Charles Miller
PROJECT NAME Soil Assessment
PROJECT NUMBER 597
PROJECT LOCATION Lot 34, Balsam St, Gabriola Island
DATE STARTED 21-5-21 **COMPLETED** 21-5-21
GROUND ELEVATION _____ **TEST PIT SIZE** _____
EXCAVATION CONTRACTOR Boehm
GROUND WATER LEVELS:
EXCAVATION METHOD mini excavator
AT TIME OF EXCAVATION ---
LOGGED BY AD **CHECKED BY** AD
AT END OF EXCAVATION ---
NOTES
AFTER EXCAVATION ---

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (kPa)	DRY UNIT WT. (Mg/m^3)	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0.0		Toposoil sand and silt, moist, dark brown, some organics						
		WELL GRADED SAND WITH SILT Soft, moist, brown sand, some silt with some gravel. No mottling, no water seepage	GB					
0.5								
		SILT WITH SAND Soft, moist, grey silt, some sand, trace gravel. No mottling, no water seepage	GB					
1.0								
		SANDSTONE fracured sandstone bedrock. Bottom of test pit at 1.10 m.						
1.5								
2.0								
2.5								
3.0								

Guelph Permeameter Calculations

Input

Result

Single Head Method (1)

Reservoir Cross-sectional area in cm^2 (enter "35.22" for Combined and "2.16" for Inner reservoir):	35.22
Enter water Head Height ("H" in cm):	5
Enter the Borehole Radius ("a" in cm):	3
Enter the soil texture-structure category (enter one of the below numbers):	3

1. Compacted, Structure-less, clayey or silty materials such as landfill caps and liners, lacustrine or marine sediments, etc.
2. Soils which are both fine textured (clayey or silty) and unstructured; may also include some fine sands.
3. Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.
4. Coarse and gravely sands; may also include some highly structured soils with large and/or numerous cracks, macropors, etc

Steady State Rate of Water Level Change ("R" in cm/min): 1.4000

Res Type	35.22
H	5
a	3
H/a	1.667
a*	0.12
C0.01	0.809
C0.04	0.842
C0.12	0.803
C0.36	0.803
C	0.803
R	1.400
Q	0.822
pi	3.142

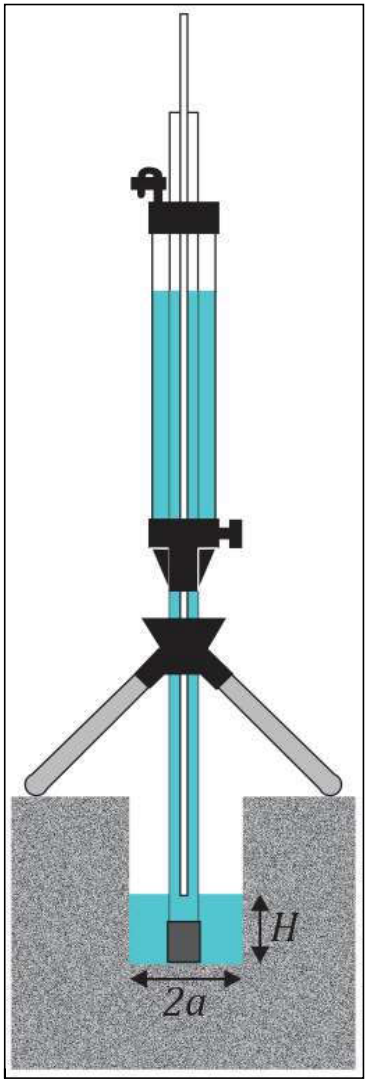
α^*= 0.12 cm^{-1}

C = 0.8031543

Q = 0.8218

K_{fs} = 1.49E-03 cm/sec
8.97E-02 cm/min
1.49E-05 m/sec
3.53E-02 inch/min
5.88E-04 inch/sec

Φ_m = 1.25E-02 cm^2/min



Calculation formulas related to shape factor (C). Where H_1 is the first water head height (cm), H_2 is the second water head height (cm), a is borehole radius (cm) and α^* is microscopic capillary length factor which is decided according to the soil texture-structure category. For one-head method, only C_1 needs to be calculated while for two-head method, C_1 and C_2 are calculated (Zang et al., 1998).

Soil Texture-Structure Category	$\alpha^*(cm^{-1})$	Shape Factor
Compacted, Structure-less, clayey or silty materials such as landfill caps and liners, lacustrine or marine sediments, etc.	0.01	$C_1 = \left(\frac{H_2/a}{2.081 + 0.121(H_2/a)}\right)^{0.672}$
Soils which are both fine textured (clayey or silty) and unstructured; may also include some fine sands.	0.04	$C_1 = \left(\frac{H_1/a}{1.992 + 0.091(H_1/a)}\right)^{0.683}$ $C_2 = \left(\frac{H_2/a}{1.992 + 0.091(H_2/a)}\right)^{0.683}$
Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.	0.12	$C_1 = \left(\frac{H_1/a}{2.074 + 0.093(H_1/a)}\right)^{0.754}$ $C_2 = \left(\frac{H_2/a}{2.074 + 0.093(H_2/a)}\right)^{0.754}$
Coarse and gravely sands; may also include some highly structured soils with large and/or numerous cracks, macro pores, etc.	0.36	$C_1 = \left(\frac{H_1/a}{2.074 + 0.093(H_1/a)}\right)^{0.754}$ $C_2 = \left(\frac{H_2/a}{2.074 + 0.093(H_2/a)}\right)^{0.754}$

CORE Geotechnical Inc.

Permeameter Test PT 1

Client:	Mr. Jeff Bustard	**Date:**	2022-07-04
Principal:	Charles Miller	**Project Number:**	597
Location	663 Balsam Street, Gabriola Island	**Tested By:**	AD
		Checked	

Reservoir Constant:	35.22
Well Hole Depth:	46 cm
H_1 Set At:	5 cm

Reading Number	Time	Time Interval (min)	Water Level in Reservoir (cm)	Water Level Change (cm)	Rate of Water Level Change, R_1, (cm/min)
1	0		5.0		
2	1	1	5.8	0.8	0.8
3	2	1	6.7	0.9	0.9
4	3	1	7.8	1.1	1.1
5	4	1	8.9	1.1	1.1
6	5	1	10.1	1.2	1.2
7	6	1	11.5	1.4	1.4
8	7	1	13.0	1.5	1.5
9	8	1	14.4	1.4	1.4
10	9	1	15.8	1.4	1.4
11	10	1	17.2	1.4	1.4

CORE Geotechnical Inc.

Permeameter Test PT 2

Client:	Mr. Jeff Bustard	**Date:**	2022-07-04
Principal:	Charles Miller	**Project Number:**	597
Location	663 Balsam Street, Gabriola Island	**Tested By:**	AD
		Checked	

Reservoir Constant:	35.22
Well Hole Depth:	48 cm
H_1 Set At:	5 cm

Reading Number	Time	Time Interval (min)	Water Level in Reservoir (cm)	Water Level Change (cm)	Rate of Water Level Change, R_1, (cm/min)
1	0		22.0		
2	1	1	22.6	0.6	0.6
3	2	1	23.4	0.8	0.8
4	3	1	24.4	1.0	1.0
5	4	1	25.4	1.0	1.0
6	5	1	26.5	1.1	1.1
7	6	1	27.7	1.2	1.2
8	7	1	29.0	1.3	1.3
9	8	1	30.4	1.4	1.4
10	9	1	31.9	1.5	1.5
11	10	1	33.4	1.5	1.5
12	11	1	34.9	1.5	1.5

CORE Geotechnical Inc.

Permeameter Test PT 3

Client:	Mr. Jeff Bustard	**Date:**	2022-07-04
Principal:	Charles Miller	**Project Number:**	597
Location	663 Balsam Street, Gabriola Island	**Tested By:**	AD
		Checked	

Reservoir Constant: 35.22
Well Hole Depth: 50 cm
H_1 Set At: 5 cm

Reading Number	Time	Time Interval (min)	Water Level in Reservoir (cm)	Water Level Change (cm)	Rate of Water Level Change, R_1, (cm/min)
1	0		35.0		
2	1	1	35.4	0.4	0.4
3	2	1	36.1	0.7	0.7
4	3	1	36.9	0.8	0.8
5	4	1	38.0	1.1	1.1
6	5	1	39.1	1.1	1.1
7	6	1	40.4	1.3	1.3
8	7	1	41.7	1.3	1.3
9	8	1	43.0	1.3	1.3

CORE Geotechnical Inc.

Percolation Tests

Civic Address: Lot 34, Balsam St, Gabriola Island Date: June 15/21

Legal Address: Lot 34, Section 22, Nanaimo Land District, Plan VIP22540

Holes pre-soaked for 24 hrs.

Perc. hole # 1
Location: middle field
5:45 min. / inch
5:44min. / inch
5:43 min. / inch
5:43 min. / inch
Depth: 60cm

Perc. hole # 2
Location:

Perc. hole #3
Location:
Depth: cm

Perc. hole #4
Location:
Depth: ___cm

Average Perc. Rate: 6:00min/ 2.5 cm

island health

RECORD OF SEWERAGE SYSTEM

Filing # (OFFICE USE ONLY)

1. Property Information

■ New Construction ☐ Alteration ☐ Repair ■ Amendment – Original Filing # NA21/174

Tax Assessment Roll # 04-768-14210.074

PID # 003-330-435

Legal Description (Plan, Lot, District Lot, Block Numbers)
Lot 34, Section 22, Nanaimo Land District, Plan VIP22540

Street (Civic) Address or General Location: Balsam Street

City: Gabriola Island

2. Owner Information

Name of Legal Owner: Jeff Bustard

Mailing Address: c/o 777 E. Poplar Road

Phone: 250-701-1760 City: Nanaimo Prov: BC Postal Code: V9S 2H7

3. Authorized Person Information

Name of Authorized Person: Bruce Grayson, P.Eng.

Mailing Address: 21-Island Hwy N.

Phone: 250-714-2321 City: Nanaimo Prov: BC Postal Code: V9T 1W6

Registration #: 40075

Email: bruce@coregeotechnical.ca

4. Structure Information

Sewerage System Will Serve:

■ Single Family Dwelling ☐ Other Structure *(specify)* _____ ☐ Other Dwelling *(specify)* _____

The sewerage system is designed for an estimated minimum daily domestic sewage flow of *(check one)*

■ Less than or equal to 9,100 litres ☐ More than 9,100 litres but less than 22,700 litres

5. Site Information

Depth of native soil to seasonal high water table or restrictive layer *(cm)* 110

Information respecting the type, depth and porosity of the soil is attached ■ Yes ☐ No

GPS Location of System *(decimal degrees)* Latitude 49.1917 Longitude -123.8392

Horizontal Accuracy *(m)* 6 ■ Recreational GPS ☐ Differential GPS

6. Drinking Water Protection

Will the sewerage system be located less than 30 m from a well? ☐ Yes ■ No

If yes, attach a professional's report and specify the intended distance n/a *(m)*

Distance of proposed sewerage system to the closest body of surface water 4 *(m)*

7. System Information

Sewerage treatment method ☐ Type 1 ☐ Type 2 ■ Type 3

8. Legal or Regulatory Considerations

■ Construction of the proposed sewerage system will not conflict with legal instruments registered on the property.

Is this filing submitted as the result of an order from the Health Authority? ☐ Yes *(attach a copy of the order)* ■ No

9. Plot Plan and Specifications

Plot Plan (to scale) and specifications are attached ■ Yes ☐ No

■ The plans and specifications are consistent with Standard Practice

Source of Standard Practice: ■ Ministry of Health Standard Practice Manual ☐ Other

10. Authorized Person's Signature

Signature

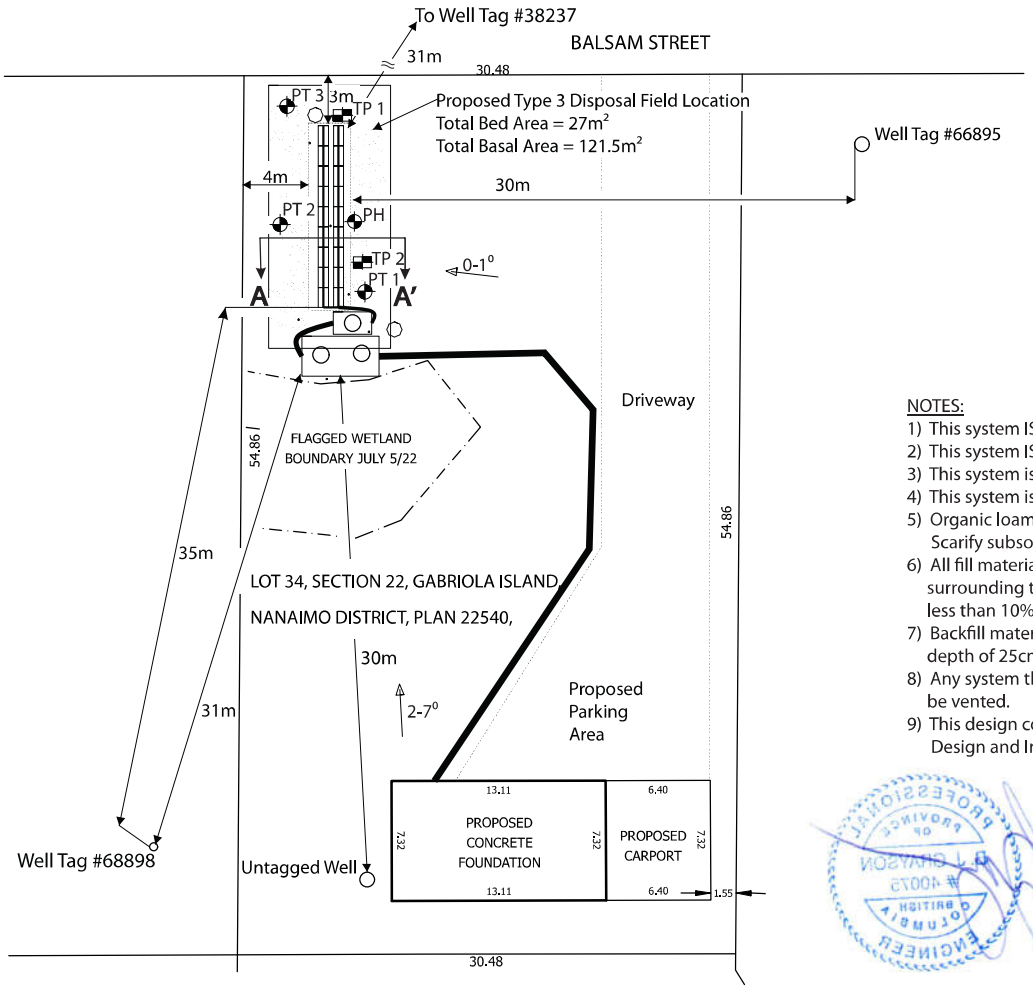
Date 2022-08-03

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA B. J. GRAYSON # 40075

OFFICE USE ONLY

Filing Accepted Date Sept 16, 2021

Receipt Number 252770



LEGEND

- 5000ℓ septic tank with effluent filter at outlet - filter handle accessible within 150mm of tank lid
- 2046ℓ pump tank with effluent pump See details on Drawing 597-2
- 51mmØ Schedule 40 force main pipe to laterals
- 100mmØ Schedule 40 gravity main pipe with cleanouts to surface on 30m centres
- Eljen GSF A42 module
- 1° Slope measurement and direction
- TP Approximate location of soil test pit
- PT Approximate location of permeameter test borehole
- PH Approximate location of percolation test hole
- Observation/Test Ports
- Tree

NOTES:

1) This system IS NOT designed for the use of a garbage disposal system.
2) This system IS NOT designed for backwash from a water softener.
3) This system is NOT designed for condensate from a high-efficiency furnace.
4) This system is designed for DOMESTIC Wastewater only.
5) Organic loam material must be removed from bed and slope extension area prior to fill placement. Scarify subsoil prior to fill placement.
6) All fill material shall meet SPM V3 requirements. The 30cm of Specified System Sand underneath and surrounding the CGF modules shall be concrete sand meeting the requirements of ASTM C-33 with less than 10% passing a #100 sieve and less than 5% passing a #200 sieve.
7) Backfill material can be suitable soil with no stones larger than 5cm in any dimension to a minimum depth of 25cm over the top of the distribution pipe.
8) Any system that is more than 45cm below finish grade as measured from the top of the module shall be vented.
9) This design complies with and must be installed in accordance with the June 2022 Eljen GSF Design and Installation Manual for British Columbia.

0 5 10 15 metres

SCALE 1:300 WHEN PRINTED ON TABLOID (11" X 17") PAPER

2022-08-03

All parts and materials to meet NSF, CSA and UL Standards. This plan does not cover electrical works

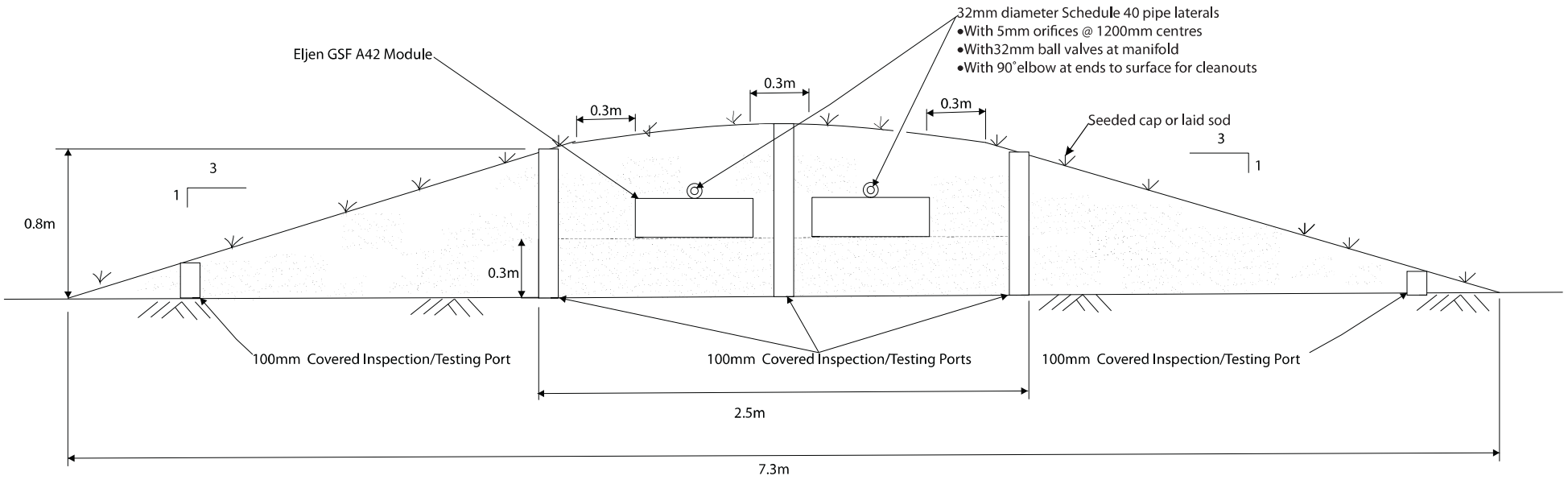
MAINTENANCE OF THIS SYSTEM IS CRITICAL

This Design is Applicable to Temperatures -15°C and Above

Based on a survey provided by:
Williamson & Associates Professional Surveyors
3088 Barons Road, Nanaimo, BC
Drawing Number 21087-3 Site Plan
July 5, 2022

CORE Geotechnical Inc.
Permit to Practice No. 1000185

Site Plan - Proposed Wastewater System 663 Balsam Street, Gabriola Island			
Client: Jeff Bustard			
Principal: Charles Miller			
Scale: 1:300	Drn: AD	Chk: BJG	12 Jul. 2022
Rev: 0	Proj. No: 597	Dwg. No: 597-3	



Cross Section A-A' From Drawing 597-3

NOTES:

1) This system IS NOT designed for the use of a garbage disposal system.
2) This system IS NOT designed for backwash from a water softener.
3) This system is NOT designed for condensate from a high-efficiency furnace.
4) This system is designed for DOMESTIC Wastewater only.
5) Organic loam material must be removed from bed and slope extension area prior to fill placement. Scarify subsoil prior to fill placement.
6) All fill material shall meet SPM V3 requirements. The 15cm of Specified System Sand underneath and surrounding the GSF modules shall be concrete sand meeting the requirements of ASTM C-33 with less than 10% passing a #100 sieve and less than 5% passing a #200 sieve.
7) Backfill material can be suitable soil with no stones larger than 5cm in any dimension to a minimum depth of 25cm over the top of the distribution pipe.
8) Any system that is more than 45cm below finish grade as measured from the top of the module shall be vented.
9) This design complies with and must be installed in accordance with the June 2022 Eljen GSF Design and Installation Manual for British Columbia.

SCALE (m)

0 0.4 0.8 1.2 1.6

1:20 (when printed on Tabloid (11" x 17") paper)

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
B. J. GRAYSON
40075

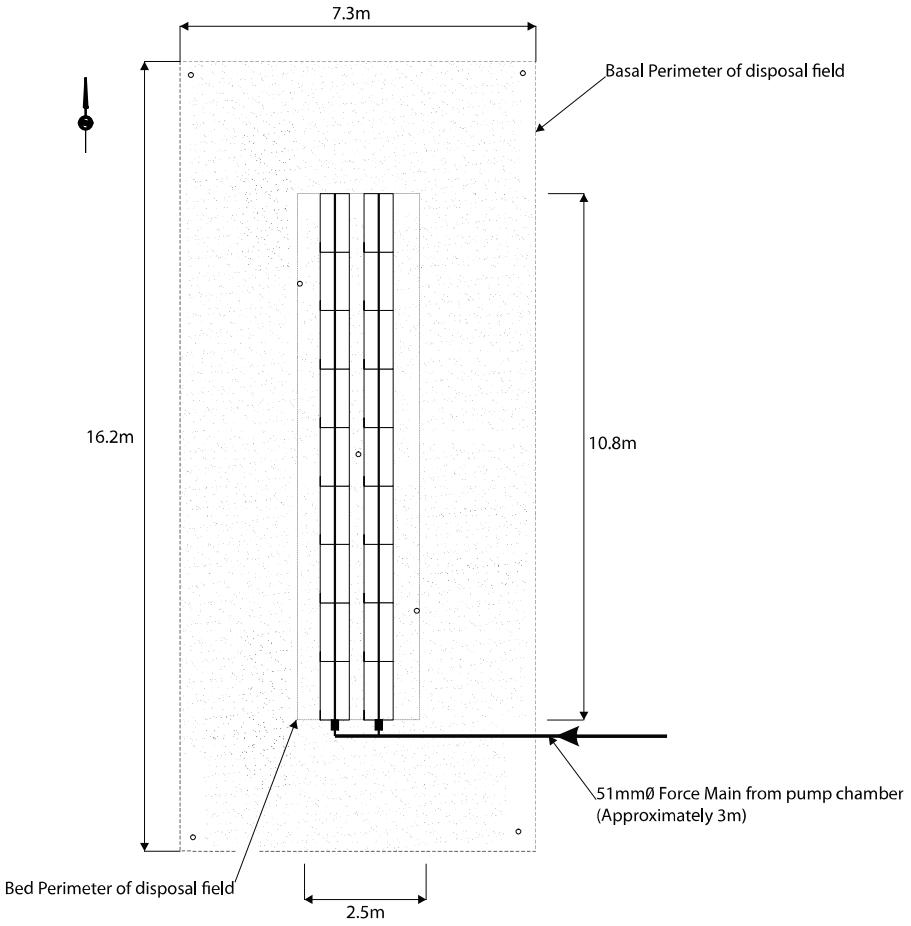
2022-08-03

MAINTENANCE OF THIS SYSTEM IS CRITICAL

This System is Applicable to Temperatures ≥-15^0 Celsius

CORE Geotechnical Inc.
Permit to Practice No. 1000185

Eljen GSF Disposal Bed Detail at 663 Balsam St, Gabriola Island			
Client: Jeff Bustard			
Principal: Charles Miller			
Scale: 1:20	Drn: AD	Chk: BJG	11 Jul. 2022
Rev: 0	Proj. No: 597	Dwg. No: 597-4	



SCALE (m)

0 2 4 6 8

1:100 (when printed on Tabloid(11" x 17") paper)

NOTES

Bed:
Eljen-GSF 18-module bed installed as per June 2022 Eljen manual
2 x 9 module runs
Uniform distribution with 32mmØ Schedule40 pipe laterals
5mm orifices at 1200mm spacing

Piping
21.6m total of 2 x 10.8m runs
End-fed
32mmØ Schedule40 runs with
5mm orifices at 1.2m c-c
32mm ball valves @ headers
90°elbows @ ends (protected) for cleanouts

Pump:
Effluent pump to dose 36.1L/dose (36 doses/24hours) with
0.6m residual spray height @ ends
-See sewerage summary detail for recommended size
-Installer to provide appropriate pump

Other:
High level float in pump chamber set at 1250L
Simplex control panel, on separate circuit from pump with
a. Timed dosing
b. Dosing counter
c. High level alarm
All connections within 150mm of tank lid
All parts and materials to meet NSF, CSA and UL Standards.
This plan does not cover electrical works

NOTES:
1) This system IS NOT designed for the use of a garbage disposal system.
2) This system IS NOT designed for backwash from a water softener.
3) This system is NOT designed for condensate from a high-efficiency furnace.
4) This system is designed for DOMESTIC Wastewater only.
5) Organic loam material must be removed from bed and slope extension area prior to fill placement. Scarify subsoil prior to fill placement.
6) All fill material shall meet SPM V3 requirements. The 30cm of Specified System Sand underneath and surrounding the CGF modules shall be concrete sand meeting the requirements of ASTM C-33 with less than 10% passing a #100 sieve and less than 5% passing a #200 sieve.
7) Backfill material can be suitable soil with no stones larger than 5cm in any dimension to a minimum depth of 25cm over the top of the distribution pipe.
8) Any system that is more than 45cm below finish grade as measured from the top of the module shall be vented.
9) This design complies with and must be installed in accordance with the June 2022 Eljen GSF Design and Installation Manual for British Columbia.

LEGEND

- 51mmØ Schedule 40 Force Main Pipe to 51mmØ Tee Manifolds
- 32mmØ ball valves
- ASTM C-33 Sand
- 100mmØ Observation/Testing Port

MAINTENANCE OF THIS SYSTEM IS CRITICAL

This Design is Applicable to Temperatures -15°C and Above

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA JAMES CHARLES MILLER # 40075

2022-08-03

CORE Geotechnical Inc.
Permit to Practice No. 1000185

Field Plan - Proposed Wastewater System 663 Balsam Street, Gabriola Island			
Client: Jeff Bustard			
Principal: Charles Miller			
Scale: 1:100	Drn: AD	Chk: BJG	13 Jul. 2022
Rev: 0	Proj. No: 597	Dwg. No: 597-5	

July 13, 2022 Project No: 597

General Summary of the Sewage System

Property Information

Civic Address

663 Balsam Street, Gabriola Island

Legal Description

Lot 34, Section 22, Nanaimo Land District, Plan VIP22540

Design Rationale

Based on "Onsite Sewerage Systems Version 1.3 Published May 24, 2018" and "Sewerage System Standard Practice Manual Version 3 (S^3PMV3).

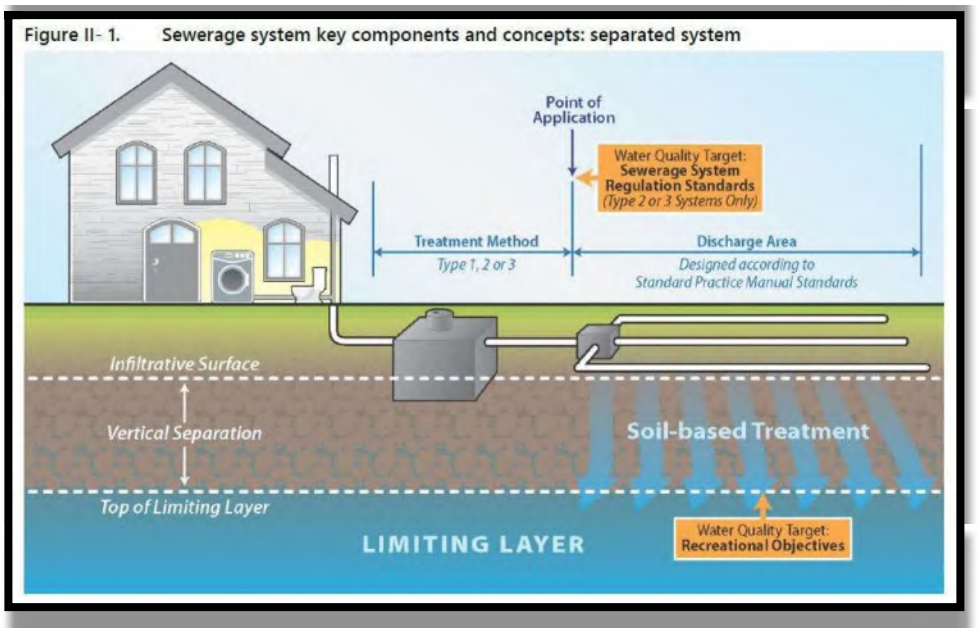


Figure 1: From S^3PMV3

Design Summary

- New system for proposed new residence;
- All setbacks are met, some limited; and
- An adequate depth of soil (of measured permeability) is present.

Source Characterization

From Section 4.2.1 of the "Guidelines for Onsite Sewage Systems"

Type of Source	Residential
Type of Operation	Domestic
Special Source Characteristics	No
Sources Not Under SSR	No

Site Assessment and Soil Evaluation Results

Table 1: Proposed Development

Description	Residence	Not a luxury home
Floor area	Maximum 280m^2	
Number of Bedrooms	3	Lowe et al (2009) 207ℓ/d/person SSSPMV3 Table II -8 1300ℓ/d SSSPMV3 Table II-9 350ℓ/d/person
Number of Occupants	Maximum 3	Design to be revised if >3 occupants are to be expected
Garburator Installed	No	DDF to be revised by factor of 1.5 if Garburator is to be installed.
Flow rate	1300 Litres per day (ℓ/d)	Design Daily Flow (DDF) from Table II-8 (see below)

Table II- 8. Minimum Daily Design Flow (DDF) for Residences

NUMBER OF BEDROOMS	MAXIMUM FLOOR AREA (M^2)	DDF LITRES/DAY
1	140	700
2	240	1,000
3	280	1,300
4	330	1,600
5	420	1,900
6	520	2,200
Additional bedroom, add		300
Additional 1m^2		3

Notes:

- Use the total floor area that is living space.

- If the total occupancy is expected to be higher than calculated from the minimum occupancy per bedroom in Table II- 9, then use Table II- 9 to select DDF for the projected number of occupants.
- For luxury homes use Table II- 9.

Table II- 9. Per capita Daily Design Flow for Residences

USE	PER PERSON FLOW (L/DAY)
Single family dwelling	350
Multi-family (apartment)	300
Luxury homes	700
Seasonal cottage	250
Mobile home	300
NUMBER OF BEDROOMS	**MINIMUM NUMBER OF OCCUPANTS**
1	2
2	3
3	3.75
4	4.5
5	5.5
6	6.5

Table 2: Disposal Area Characteristics

Slope Of Site (At Dispersal Area)	Restrictive Layer Depth[1]	Permeameter Rate Average*	HLR
<1°	1.1 m	1292	72 (From Eljen GSF 2022 British Columbia Design & Installation Manual) (see below)

*Permeameter Rate Average = calculated K_{fs} per calculator sheet (cm/min) x 60 (min/h) x 24 (h/day) x 10 (mm/cm)

[1] Restrictive layers include: Seasonal high water table, low permeability soil, or bedrock.

Table 3: Standard GSF A42 Sizing Table - Residential Applications

Bedrooms					
1	2	3	4	5	6
Standard Daily Design Flow Liters/Day					
700	1000	1300	1600	1900	2200
Recommended Minimum Number of Modules					
10	14	18	24	25	36

General System Design Parameters

The system design is based on the following parameters:

- Vertical Separation – Distance between Infiltrative Surface and Restrictive Layer: >90cm;
- System Type: Type 3;
- Hydraulic Loading Rate (HLR) = 72ℓ/m^2/day; and
- Minimum Number of Eljen GSF Mats = 18

Table 3: System Summary

Treatment Method	Distribution	Septic Tank Size	Pump Chamber Size
Type 3	Uniform Network Eljen GSF Bed + 0.3m C-33 Sand	5000 litres	2046 litres

- Type 1 is treatment by septic tank only.
- Type 2 is treatment that produces an effluent consistently containing less than 45 mg/ℓ of total suspended solids (TSS) and having a 5 day biochemical oxygen demand (BOD) of less than 45 mg/ℓ; and
- Type 3 is treatment that produces an effluent consistently containing less than 10 mg/ℓ of TSS and having;
    - a 5 day BOD of less than 10 mg/ℓ; and
    - a median fecal coliform density of less than 400 Colony Forming Units (cfu) per 100 mℓ

Minimum System Contour Length and Linear Loading Rate

If either of the following are to be used:

- Evapotransipration
- ETA bed
- BC Zero Discharge Lagoon

See Sections II-6.17 and II-6.18 of S^{3}PMV3.

Table II- 28. LLR based on permeability or percolation rate (L/day/m)

KFS (MM/DAY)	PERCOLATION RATE (MIN/INCH)	SLOPE 0 TO < 5%				SLOPE 5 TO < 10%				SLOPE 10% TO < 15%				SLOPE ≥ 15%			
		(CM) SOIL DEPTH BELOW INFILTRATIVE SURFACE				(CM) SOIL DEPTH BELOW INFILTRATIVE SURFACE				(CM) SOIL DEPTH BELOW INFILTRATIVE SURFACE				(CM) SOIL DEPTH BELOW INFILTRATIVE SURFACE			
		25 – 45	45 – 60	60 – 90	≥ 90	25 – 45	45 – 60	60 – 90	≥ 90	25 – 45	45 – 60	60 – 90	≥ 90	25 – 45	45 – 60	60 – 90	≥ 90
> 17,000	< 0.5	150	260	340	400	290	400	400	400	400	400	400	400	400	400	400	400
8000-17000	0.5 – 1.0	85	140	180	250	150	250	330	400	260	400	400	400	360	400	400	400
4000 – 8000	1 – 2	50	80	110	140	80	140	180	250	140	240	310	400	200	330	400	400
2000 – 4000	2 – 4	45	55	70	90	55	85	110	150	90	140	180	240	120	190	240	340
1000 - 2000	4 – 7.5	45	55	70	70	50	60	75	90	60	90	110	140	80	120	150	200
550 – 1,000	7.5 – 15	45	55	70	70	50	60	75	75	60	75	90	100	75	90	110	130
300 - 550	15 – 30	40	45	55	55	45	50	55	60	50	55	60	65	60	65	75	80
150 – 300	30 – 60	30	35	40	40	35	40	45	45	35	45	50	55	45	50	60	65
75 – 150	60 – 120	25	30	35	35	25	35	40	40	30	35	40	40	35	45	50	50
< 75	> 120	NA															

Minimum System Contour Length (m) = DDF / LLR = 1300 / 70 = 18.6m

Table 4: Distribution Design Summary

Total Bed Area	Number of Runs	Length of Each Run	Width of Each Run
27m^2	2	10.8m	1.25m

Checks:
Total Bed Area (27) ≥ 19.4 <True>
Length of Run (10.8) > 18.6 <Not True> due to well, property and wetland feature required setbacks limiting area and length availability

Laterals

Gravity ☐
Pressurized ☒

Table 5: Laterals for Gravity or Pressurized Systems

No. of Runs	Feed Location	No. of Laterals	Length of each Run (m)	Length of each Lateral (m)	Pipe Size (mm)
2	End	2	10.8m	10.8m	32mm

Table 6: Orifices for Pressurized System

Orifice Size	Orifice Spacing	Total No. of Orifices	Orifices / Run	Orifices / Lateral
5 mm	1200mm	18	18	9

Table 7: Flow Data for Pressurized System

DDF	Required Flow Rate	Design Dose Volume	Squirt Height	Orifice Discharge	Design Doses / Day	Design Dose Time
1300	41.6ℓ/min	36.1ℓ	0.6 m	2.31 m	36	52 sec

Table 8: Dynamic Head Loss

Q (l/min)	Friction Head Loss per 10m of Pipe							
	Pipe Size (mm)							
	25	32	38	51	64	76	102	152
3.8	0.04	-	-	-	-	-	-	-
7.6	0.13	0.03	-	-	-	-	-	-
11.4	0.26	0.07	0.03	-	-	-	-	-
15.1	0.43	0.12	0.05	-	-	-	-	-
18.9	0.64	0.17	0.08	-	-	-	-	-
22.7	0.90	0.24	0.11	0.03	-	-	-	-
30.3	1.53	0.40	0.18	0.06	-	-	-	-
37.9	2.29	0.59	0.28	0.08	0.04	-	-	-
56.8	4.88	1.25	0.58	0.17	0.07	-	-	-
75.7	8.36	2.13	0.98	0.29	0.12	0.04	-	-
94.6	12.81	3.24	1.48	1.08	0.18	0.06	-	-
113.6	18.25	4.54	2.09	0.60	0.25	0.09	-	-
132.5	24.70	6.06	2.79	0.81	0.33	0.12	0.03	-
151.4	31.83	7.85	3.57	1.04	0.43	0.15	0.04	-
170.3	-	9.82	4.49	1.28	0.51	0.18	0.05	-
189.3	-	12.01	5.49	1.56	0.64	0.22	0.06	-
227.1	-	17.03	7.83	2.20	0.90	0.31	0.08	-
265.0	-	-	10.51	2.94	1.22	0.41	0.11	-
302.8	-	-	13.49	3.81	1.56	0.53	0.14	-
340.7	-	-	16.87	4.76	1.94	0.66	0.17	-
378.5	-	-	19.94	5.82	2.37	0.81	0.21	0.03
473.2	-	-	31.75	9.02	3.61	1.23	0.32	0.04
567.8	-	-	-	12.81	5.13	1.72	0.44	0.06
662.4	-	-	-	17.10	6.88	2.30	0.59	0.08
757.1	-	-	-	22.09	8.96	2.97	0.76	0.10

Q (l/min)	Friction Head Loss per 10m of Pipe							
	Pipe Size (mm)							
	25	32	38	51	64	76	102	152
851.7	-	-	-	-	11.2	3.70	0.94	0.12
946.4	-	-	-	-	-	4.55	1.12	0.15
1041.0	-	-	-	-	-	5.48	1.37	0.18
1135.6	-	-	-	-	-	6.41	1.62	0.21
1230.3	-	-	-	-	-	7.59	1.89	0.25

For 41.6ℓ flow, 51mm pipe, the head loss per 10m of pipe
= (56.8-41.6) / (56.8-37.9) x (0.17-0.08) + 0.08
= 15.2 /18.9 x 0.09 + 0.08 = 0.15m
At 3m length of 51mm force main, head loss = 0.15 x (10 x 0.3) = 0.05m

Network Head:

a. 90˚ bend as equivalent to 1.8m of straight pipe
b. 45˚ bend as equivalent to 0.6m of straight pipe
c. Through tee as equivalent to 1.3m of straight pipe
d. Branch tee as equivalent to 3.7m of straight pipe
e. Gate valve as equivalent to 0.3m of straight pipe
f. Ball valve as equivalent to 2.0m of straight pipe
g. Union value as equivalent to 0.3m of straight pipe

Assume system has 2 x a + 2 x b + 1 x c + 1 x d + 1 x f + 1 x g = 12.1m extra length of pipe (equivalent)
= 1.2m head loss in those fittings

Table 9: Pressure and Losses in Pressurized System

Manifold Diameter	Force Main Diameter	Total Dynamic Head	Friction Loss in Force Main	Network Head	Static Head
51mm	51mm	4.0m	0.2m	1.2m	2.6m

Table 10: Pump Requirements:

Flow Rate (ℓ/minute)	Head (m)
45ℓ/min	4.0m

NOTICE
GB-DVP-2022.5
GABRIOLA ISLAND LOCAL TRUST COMMITTEE

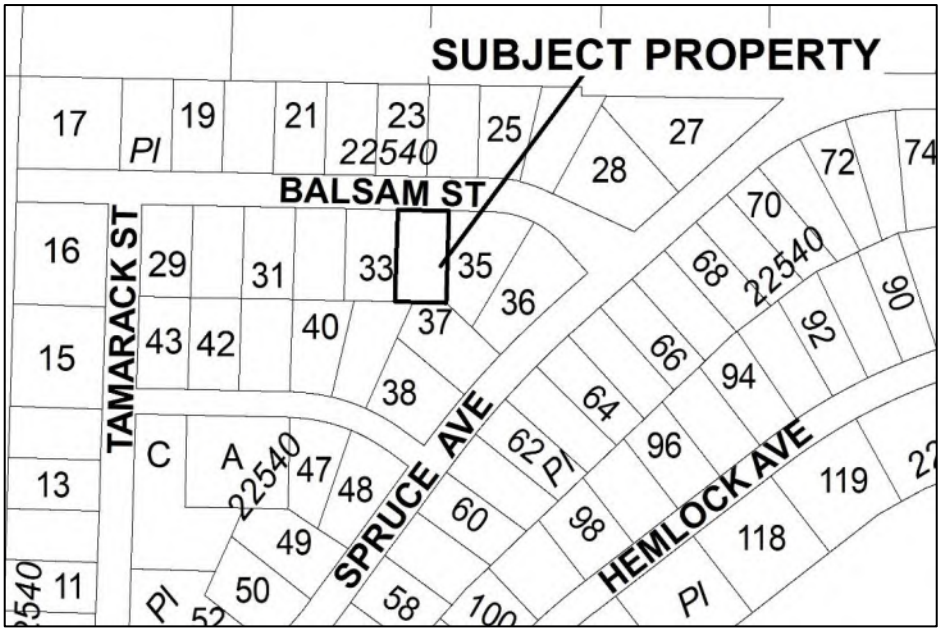
NOTICE is hereby given that the Gabriola Island Local Trust Committee will be considering a resolution allowing for the issuance of a Development Variance Permit, pursuant to Section 499 of the *Local Government Act*. The proposed permit would vary the Gabriola Island Land Use Bylaw No. 177 by:

- Permitting structures (septic tanks, septic pump chamber, sewage pipes, a culvert, and wetland overflow pipes) less than 15 metres from and less than 1.5 metres above the natural boundary of a wetland.
- Permitting a septic field 4.0 metres from the natural boundary of a wetland.
- Permitting two wetland overflow pipes 0.0 metres from the front lot line and 1.0 metre from the interior lot line.

The property is located at **663 Balsam Street, Gabriola Island, BC** and is legally described as:

LOT 34, SECTION 22, GABRIOLA ISLAND, NANAIMO DISTRICT, PLAN 22540 (PID: 003-330-435).

The general location of the subject property is shown on the following sketch:



A copy of the proposed permit may be inspected at the Islands Trust Office, 700 North Road, Gabriola Island, BC V0R 1X3 between the hours of 8:30 a.m. to 4:30 p.m. Monday to Friday inclusive, excluding statutory holidays, commencing **November 18, 2022** and continuing up to and including **November 30, 2022.**

Enquiries or comments should be directed to Margot Thomaidis, Planner 2 at (250) 247-2204, for Toll Free Access, request a transfer via Enquiry BC: In Vancouver 660-2421 and elsewhere in BC 1-800-663-7867; or by fax (250) 405-5155; or by email to: northinfo@islandstrust.bc.ca before 4:30 pm, **November 30, 2022.**

The Gabriola Island Local Trust Committee may consider issuance of the proposed Permit at its regular Business Meeting to be held at **10:30 am, December 1, 2022 at Gabriola Island Community Hall, 2200 South Road, Gabriola Island**.

All applications are available for review by the public with prior appointment. Written comments made in response to this notice will also be available for public review.

Becky McErlean, Deputy Secretary

DRAFT

Islands Trust	**GABRIOLA ISLAND LOCAL TRUST COMMITTEE** **DEVELOPMENT VARIANCE PERMIT NO. GB-DVP-2022.5**

TO: Jeffrey Bustard & Asako Tsujino

1. This Development Variance Permit applies to the land described below:

PID: 003-330-435

LOT 34, SECTION 22, GABRIOLA ISLAND, NANAIMO DISTRICT, PLAN 22540

2. Pursuant to Section 498 of the *Local Government Act*, the *Gabriola Island Land Use Bylaw No. 177, 1999* is varied as follows:

a) Clause B.2.1.1 a. which states that structures must be sited a minimum of 15 metres (49.2 feet) from and 1.5 metres (4.9 feet) above the natural boundary of any lake, stream, or wetland, is varied to permit the existing structures (septic tanks, pump chamber, and a culvert) and proposed structures (sewage pipes) less than 15 metres from and at an elevation less than 1.5 metres above the natural boundary of a wetland.

b) Clause B.2.1.1 b. which states that a septic sewage disposal field must be sited a minimum of 30 metres (98.4 feet) from the natural boundary of the sea, lake, stream or wetland, is varied to permit the proposed septic disposal field 4.0 metres from the natural boundary of a wetland.

The development shall be consistent with **Schedule 'A' (Site Plan)** and **Schedule 'B' (Proposed Wastewater System)**, attached to and forming part of this permit.

3. This permit is not a Building Permit or a Siting and Use Permit, and does not remove any obligation on the part of the permittee to comply with all other requirements of the Gabriola Island Land Use Bylaw No. 177, 1999 including use and density, and to obtain other appropriate approvals necessary for completion of the proposed development.

AUTHORIZING RESOLUTION PASSED BY THE GABRIOLA ISLAND LOCAL TRUST COMMITTEE THIS XX DAY OF _____, 2022.

_____ _____

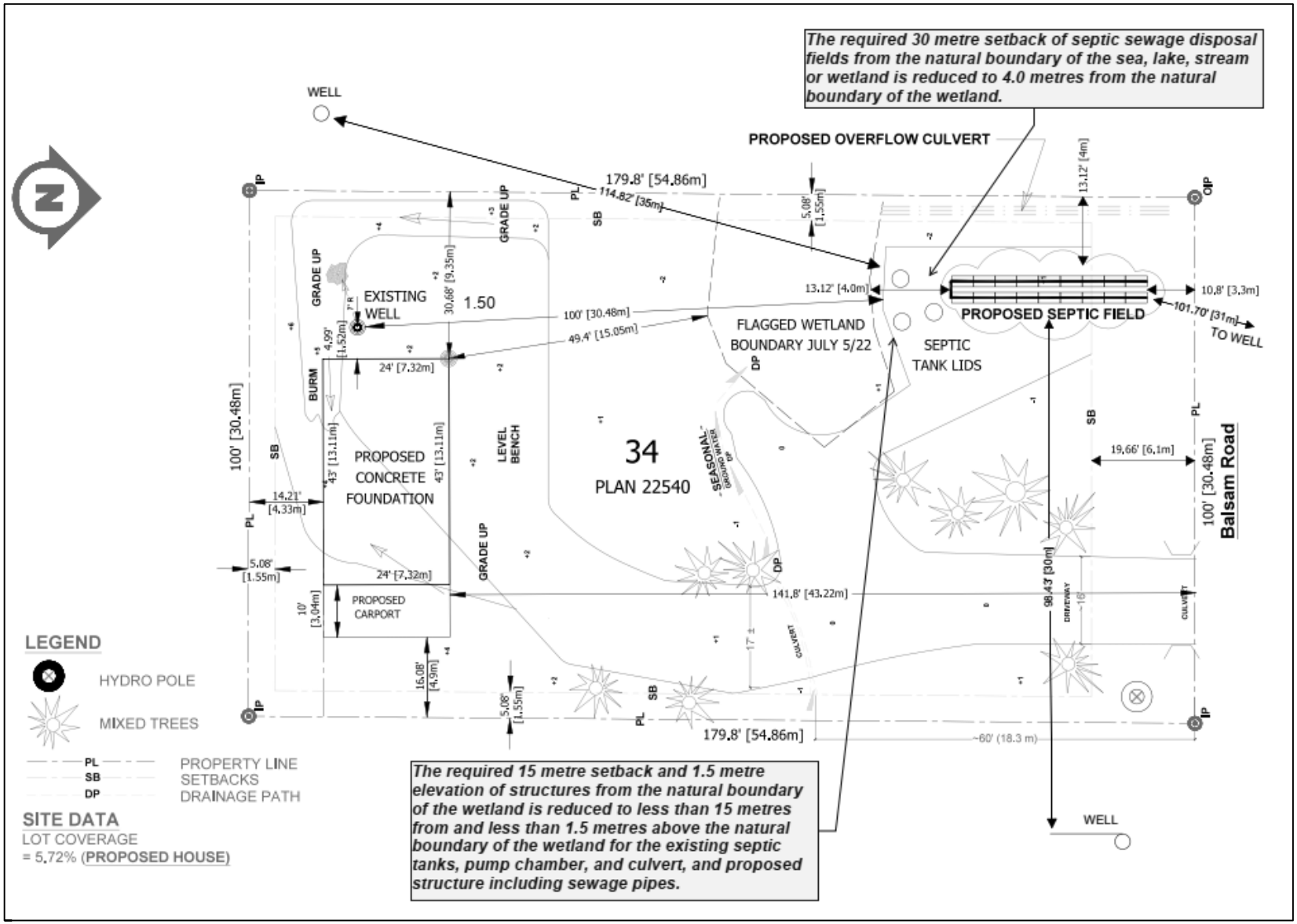
Deputy Secretary, Islands Trust **Date of Issuance**

IF THE DEVELOPMENT DESCRIBED HEREIN IS NOT COMMENCED BY THE XX DAY OF _____, 2024, THIS PERMIT AUTOMATICALLY LAPSES.

GABRIOLA ISLAND LOCAL TRUST COMMITTEE

DEVELOPMENT PERMIT GB-DVP-2022.5

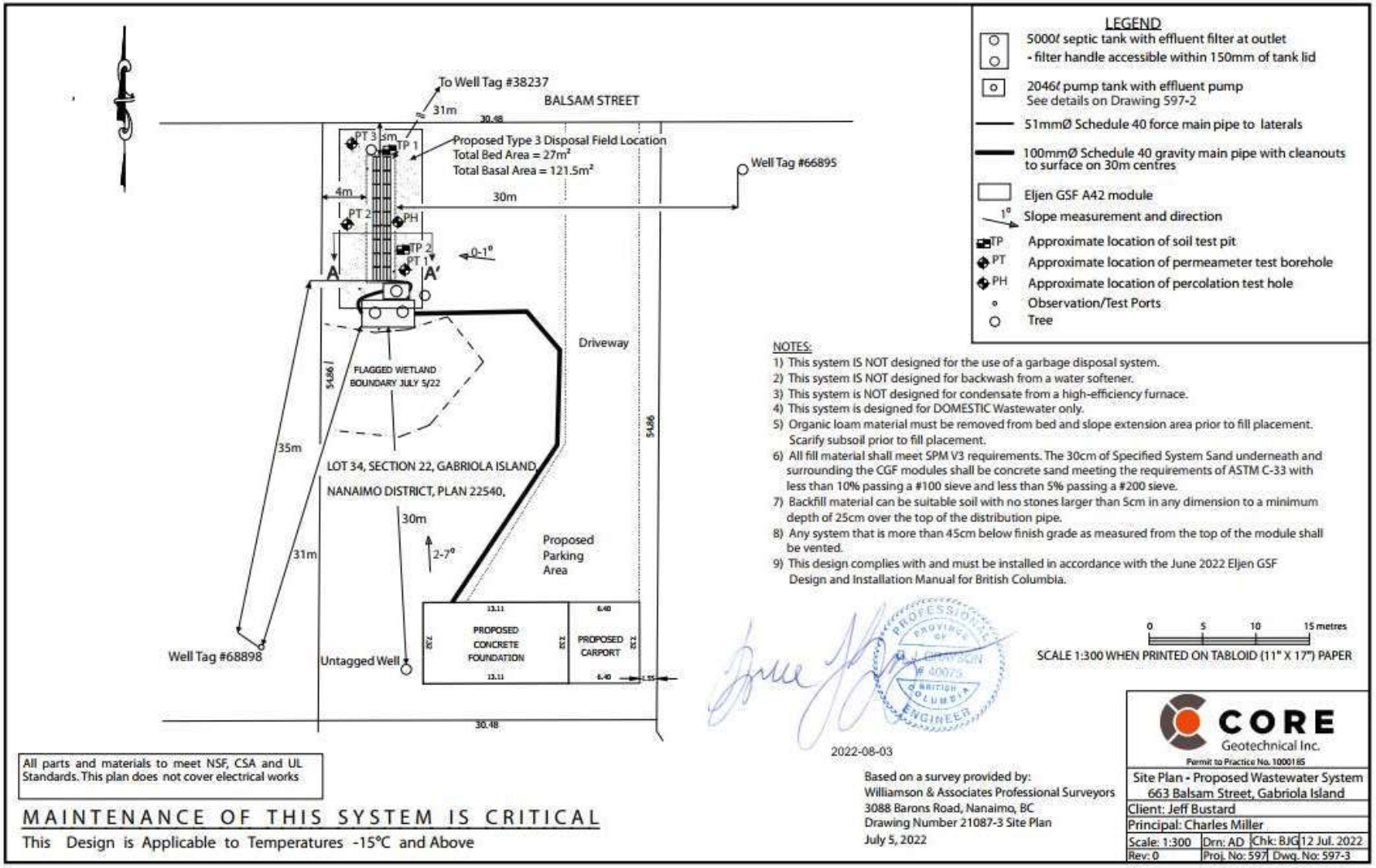
Schedule 'A' – Site Plan



GABRIOLA ISLAND LOCAL TRUST COMMITTEE

DEVELOPMENT PERMIT GB-DVP-2022.5

Schedule 'B' – Proposed Wastewater System



STAFF REPORT

File No.: GB-DVP-2017.1 & GB-DP-2017.2

DATE OF MEETING:	December 1, 2022
TO:	Gabriola Island Local Trust Committee
FROM:	Stephen Baugh, Planner 2 Northern Team
SUBJECT:	Baseline Erosion and Sediment Control Analysis Applicant: Robert Fenton Location: Acorn Island; PID 009-796-045; DISTRICT LOT 19 (FLAT TOP ISLANDS) NANAIMO DISTRICT

RECOMMENDATION

1. **That the Gabriola Island Local Trust Committee approve the Baseline Erosion and Sediment Control Analysis prepared by Great Pacific Engineering & Environment and attached to this report as Attachment 1 as sufficient to meet requirement 5(b) of Covenant CA7939129.**

REPORT SUMMARY

The purpose of this report is to present the Baseline Erosion and Sediment Control Analysis submitted by the owner of the subject property to the Gabriola Local Trust Committee (LTC) to determine if it is sufficient pursuant to Covenant CA7939129 registered on Title and granted to the Gabriola LTC by the owner. The covenant was granted by the owner prior to issuance of a Development Variance Permit (GB-DVP-2017.1) and Development Permit (GB-DP-2017.2) for the subject property.

Staff are recommending the LTC approve the Baseline Erosion and Sediment Control Analysis as sufficient.

BACKGROUND

Acorn Island is a private island located off the east coast of Gabriola Island. In 2017, Islands Trust received a Development Permit and Development Variance Permit application for the property as a result of bylaw enforcement action. The LTC made the following resolutions regarding those applications at the LTC meeting of November 28, 2019:

> ***GB-2019-117***
> ***It was MOVED and SECONDED***
> *that the Gabriola Island Local Trust Committee approve issuance of Development Variance Permit GB-DVP-2017.1 conditional upon confirmation of registration of the restrictive environmental covenant as amended by the Local Trust Committee on September 12, 2019 and the registration of a notice on the subject property land title pursuant to Section 32 of the Heritage Conservation Act for the protection of archaeological resources.*
> ***CARRIED***

GB-2019-118
It was MOVED and SECONDED
that the Gabriola Island Local Trust Committee approve issuance of Development Permit GB-DP-2017.2 following the issuance of GB-DVP-2017.1.
CARRIED

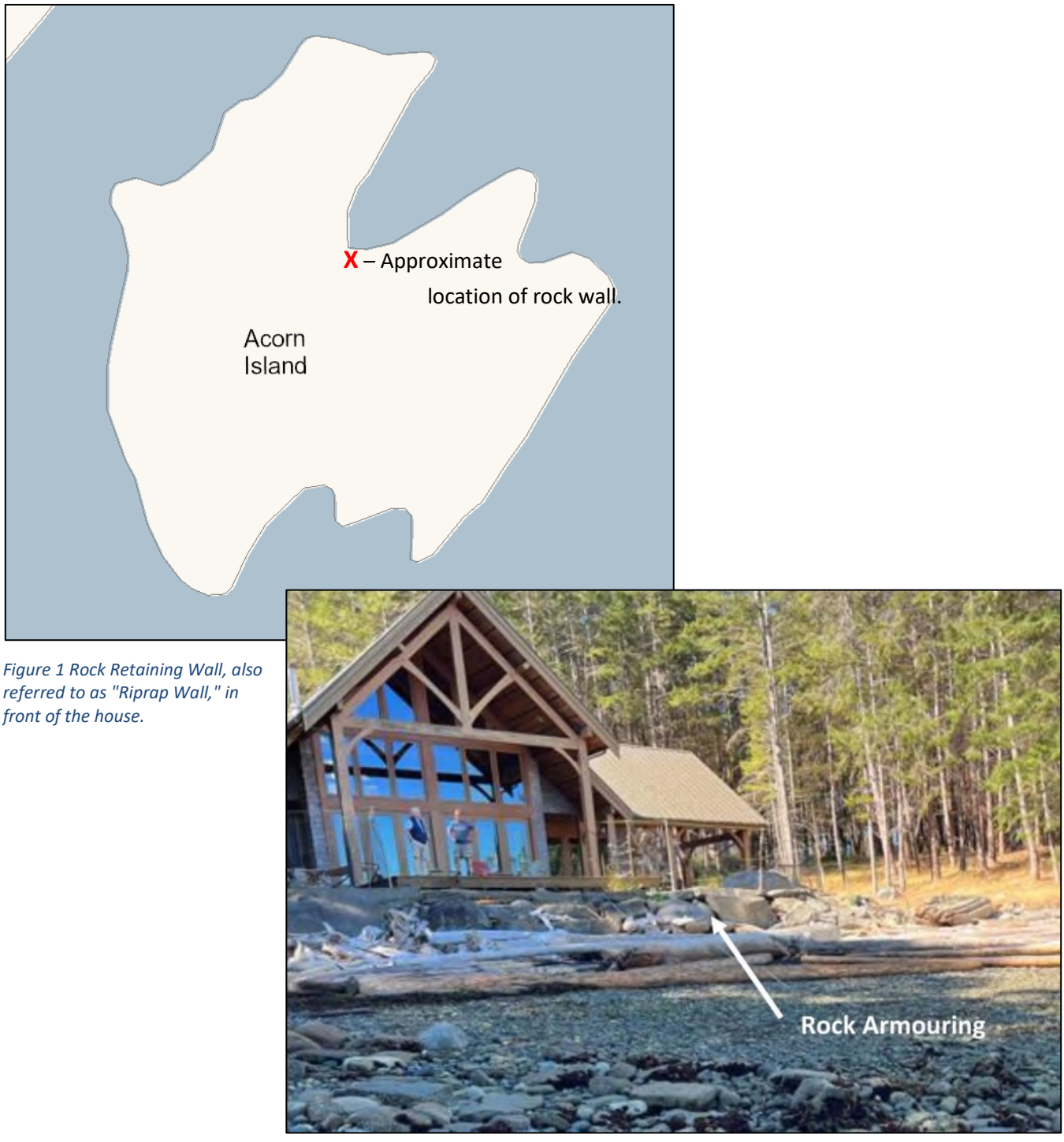


Figure 1 Rock Retaining Wall, also referred to as "Riprap Wall," in front of the house.

In April of this year staff received confirmation that both the environmental covenant and the Section 32 Heritage Conservation Act notice were both registered on title and as a result the DVP and DP were issued on April 28, 2022. Among the structures approved with these permits was an existing Rock Retaining Wall located along the shoreline in front of the house on the property.

Some of the requirements of the environmental covenant, CA7939129 (Attachment 2), require the submission of reports to the LTC for approval. This includes the previously approved revegetation plan, and the Baseline Erosion and Sediment Control Analysis that is the subject of this report. The revegetation plan was previously submitted to the LTC and approved with the following motion at the June 16, 2022 LTC meeting:

> ***GB-2022-049***
>
> ***It was MOVED and SECONDED***
>
> *that the Gabriola Island Local Trust Committee approve the revegetation plan prepared by JPH Consultants and attached to this report as Attachment 1 as sufficient to meet requirement 3(b) of Covenant CA7939129.*
>
> ***CARRIED***

To address requirement 5(b) of the Covenant the applicant has submitted the analysis which is attached to this report as Attachment 1.

> ***5(a)*** *within 3 months of the date of issuance of the Development Variance Permit, engage a hydrological engineer to prepare a baseline erosion and sediment control analysis of the Riprap Wall, and to monitor erosion and sedimentation processes in the vicinity of the wall for at least 5 years;*
>
> ***5(b)*** *within 6 months of the date of issuance of the Development Variance Permit, submit the analysis to the GILTC for its approval as to the sufficiency of the analysis*

The Covenant also states that the GILTC may withhold approval if the document does not achieve the purpose contemplated for the analysis. The purpose of the Baseline Erosion and Sediment Control Analysis is to provide a basis for future monitoring of the site in order to determine if the Riprap Wall is having a long-term cumulative negative impact on the surrounding shoreline.

ANALYSIS

Issues and Opportunities

The Covenant requires that the Baseline Erosion and Sediment Control Analysis be prepared by a hydrological engineer. The analysis is intended to provide baseline information on the impact of the Riprap Wall and recommend any future monitoring necessary to determine if the wall is having a cumulative negative impact on the surrounding shoreline.

Rationale for Recommendation

Staff find that the Baseline Erosion and Sediment Control Analysis meets the requirements of the covenant. The engineer's analysis states that the toe of the wall is located at the high water elevation for a large tide and the annual peak water level is slightly higher than this elevation. The result is that the waves reaching the wall are in shallow water and expected to be weak with reflected flows that are not strong enough to move the upper beach materials. The field observations by the engineer found that there was no erosion (scour) near the toe of the rock armouring.

Although the analysis anticipates that the rock wall is likely reducing erosion of the shoreline, it does recommend that a site inspection be conducted in five years since the interaction of the beach and structure is a long term phenomena and may not occur continuously. This recommendation is consistent with the requirement of the Covenant that erosion and sedimentation processes in the vicinity of the wall be monitored for at least five years.

ALTERNATIVES

The LTC may consider the following alternatives to the staff recommendation:

1. **Ask the applicant to provide an amended analysis.**

   The LTC may ask the applicant to amend the Baseline Erosion and Sediment Control Analysis if the document does not, in its reasonable opinion, achieve the purpose contemplated for the analysis. Staff note that if a qualified professional amends the plan, this would be done at the Owner's cost. If this alternative is selected, the LTC should state the reasons for withholding approval. Recommended wording for the resolution is as follows:

   1. *That the Gabriola Island Local Trust Committee withhold approval of the Baseline Erosion and Sediment Control Analysis submitted by Great Pacific Engineering & Environment for the follows reasons [insert reasons].*

   2. *That the Gabriola Island Local Trust Committee request the owner to submit a revised Baseline Erosion and Sediment Control Analysis prepared by Great Pacific Engineering & Environment, or another person with equivalent qualifications, that includes [insert information/alterations required to address deficiencies of report].*

NEXT STEPS

If the LTC agrees with the staff recommendation, the owner will conduct the recommended monitoring in five years and submit a report to the Local Trust Committee for approval at that time. Staff will update the Islands Trust application log with a monitoring note to requiring follow up with the owner(s) in 2027.

Submitted By:	Stephen Baugh, Planner 2	November 8, 2022
Concurrence:	Sonja Zupanec, RPP, MCIP, Acting Regional Planning Manager	November 14, 2022

ATTACHMENTS

1. Baseline Erosion and Sediment Control Analysis
2. Covenant CA7939129

Attachment 1

GREATPACIFIC ENGINEERING & ENVIRONMENT

202-2780 Veterans Memorial Parkway
Victoria, BC V9B 3S6
Phone: 778.433.2672
Web: www.greatpacific.ca
Email: gpinfo@greatpacific.ca

October 28, 2022

Robert Fenton Law Corporation
4604 Mate Road
Pender Island, BC V0N 2M2

Attention: Judith Weston c/o Mr. Robert Fenton

RE: Acorn Island – Coastal Erosion Assessment

1 Introduction

This report provides the results of an assessment of beach process dynamics in front of a house built on the shoreline of a cove on the eastern side of Acorn Island, BC. The assessment is performed to understand the metocean forcings active at the site and to predict the potential for erosion to the shore profile and recommend monitoring approaches.

Figure 1 Study area at Acorn Island, BC

2 Background

The house was built circa 2009 approximately 8 m from the high water mark at the tip of the cove (Figure 1). A short rock revetment was built along approximately 25 m of shoreline fronting the house.

GreatPacific was engaged to assess the effects of this development on beach processes, and the potential of beach erosion due to the construction of the rock armouring.

Photo 1 Photograph looking at the rock armouring and upper beach.

3 Site Characterization

3.1 General

The cove where the study area is located is only 150 m long and approximately 80 m wide at the entrance (Photo 2). The axis of the cove is aligned with northeast- southwest direction. While the shoreline of the cove is mostly characterized by rocky outcrops, a small pocket beach extends from the southwest end of the cove to approximately 70 m along the southeast shoreline. The cove seabed lies mostly above the low water level and subject to flooding and drying during diurnal tide cycles. Due to its alignment, it is mainly exposed to the NE and N storms but remains protected from the southerly and northwesterly storms, which are dominant in the southern Straits of Georgia. Accumulation of woody debris within the cove exhibits its poor flushing characteristics.

The rock armouring was constructed at the southwest end of the cove and provides protection of the backshore soils from storm induced shoreline erosion and wave run-up. The site photos and satellite images show a significant natural accumulation of woody debris in front of the shoreline (Photo 3). The photos and images do not show any sign of scour development or shore profile irregularity. There are exposed soils at the southwest corner of the cove where there is no rock armouring.

Photo 2 Photograph looking offshore at the beach comprised of a mixed size of materials.

Photo 3 Photograph looking northwest across the upper beach in the vicinity of the rock armouring.

3.2 Topography

Survey data covering the cove bathymetry and shoreline topography were obtained. The elevation contours at the entrance of the cove are approximately at -2 m relative to Chart Datum (CD) and rise to the vegetation line at 6 m to 7 m CD along the shore (Figure 2). The CD is 3.2 m below the local Geodetic Datum (GD). Figure 3 shows a profile along the cove axis extended from the crest of the seawall.

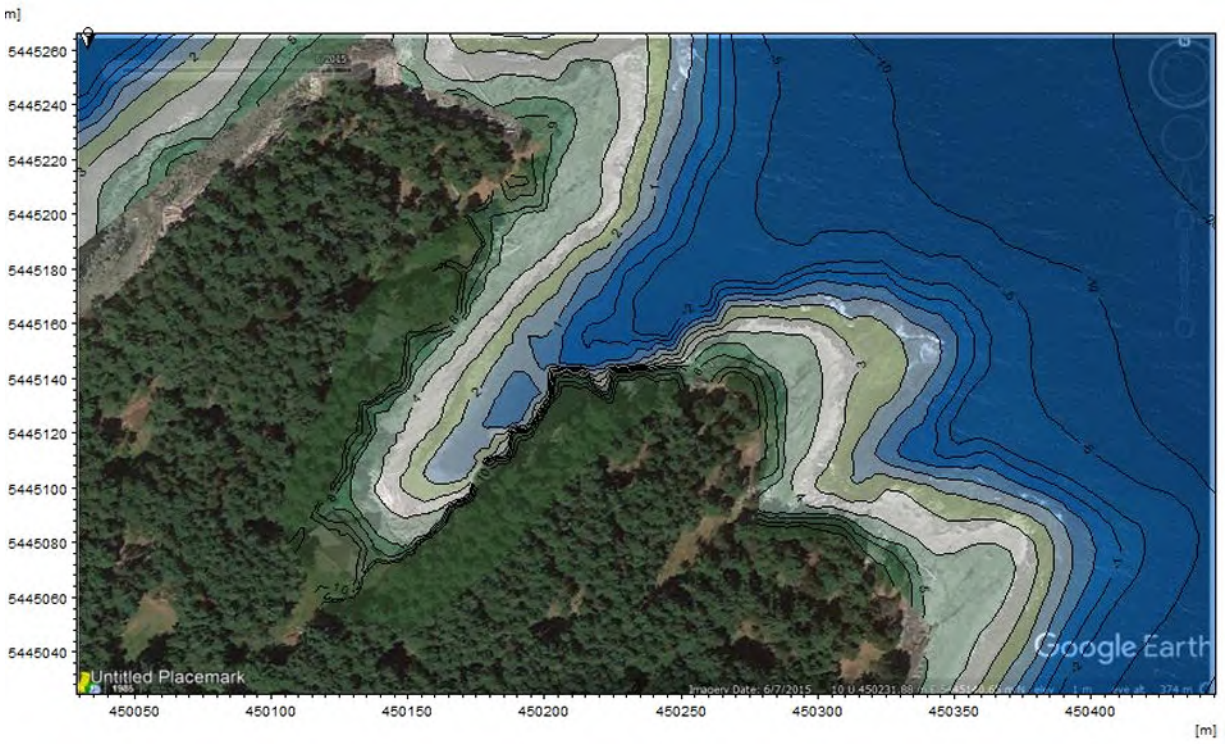


Figure 2 Bathymetry of the cove on the east side of Acorn Island

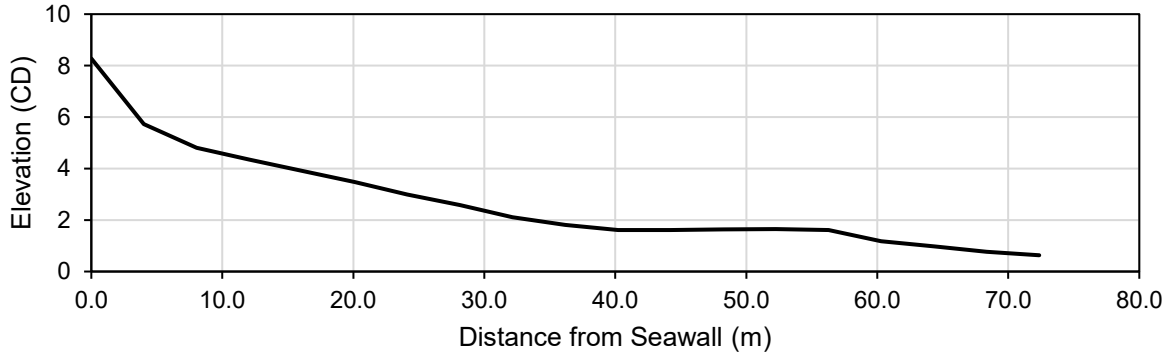


Figure 3 Profile along the cove axis extended form the crest of the seawall

3.3 Water Level

Tidal elevations at the study are considered the same as the nearest tidal station at Silva Bay. The elevations were obtained from the Canadian Tide and Current Tables, Volume 5, Fisheries and Oceans Canada, 2022, and are provided in Table 1.

Table 1 Tide Elevations for Silva Bay, Based on Point Atkinson, BC

Description	Abbreviation	Tide Level (m)	
		CD	GD
Higher High Water Level, Large Tide	HHWL,LT	5.1	1.9
Higher High Water Level, Mean Tide	HHWL,MT	4.6	1.4
Mean Water Level	MWL	3.2	0.0
Lower Low Water Level, Mean Tide	LLWL,MT	1.3	-1.9
Lower Low Water Level, Large Tide	LLWL,LT	0.2	-3.0

Historical water level records for Nanaimo were obtained from the online database of Fisheries and Oceans Canada (DFO). A tidal analysis program was used to remove the tide from the record and estimate the storm surge components corresponding to major storms. Subsequently, an extreme analysis was performed to combine peak storm surge heights and peak water levels, and the results of the analysis are provided in Table 2.

Table 2 Extreme water level and storm surge height

Return Period (Years)	Water Level (m)	Storm Surge Height (m)
1	5.2	0.6
10	5.5	0.9
50	5.7	1.1

A relative sea level rise of 0.3 m was predicted at the nearby location of North Saanich according to a median projection in 50 years by James et. Al. 2015. Such long term changes are not relevant for the present day focus of this study; however, it does highlight that ocean levels will naturally rise over time, contributing to natural erosion processes of sediment shorelines.

3.4 Currents

Tide and wind generated currents at the site were estimated to be fairly low due to the shallow depth and long, narrow shape of the cove, much lower than the larger wave-induced flow velocities offshore. Therefore, the effects of currents on beach sediment movement will be negligible and were not considered further.

3.5 Beach Sediments

Sediment samples were collected at four different locations across the beach between the high and low water lines (Appendix 1). Grain size analyses was performed for the fraction of the samples finer than 50 mm diameter and the larger fraction was measured separately. Sediment sizes for the collected samples are summarized in Table 3. The particle sizes are large on the steeper section of the beach near the high-water line than those from the flatter section.

Table 3 Beach material characteristics

Sample	Distance from Seawall	Grain Size (mm)		
		D84	D50	D16
1	76 m	40	0.4	0.2
2	42 m	>50	50	0.8
3	22m	>50	>50	9.5
4	8 m	36	10	2

3.6 Waves

Data and methodology used for the wave assessment inside the cove is provided in this section.

3.6.1 Wind

For the assessment of wave conditions for the study area, historical wind data were obtained from the Environment Canada (EC) online climate database for the Entrance Island weather station and Halibut Bank buoy station. The summary of the wind data sources is provided in Table 4.

Table 4 Wind Station Locations and Data Lengths

	Location	Data Length
Entrance Island	49.21° N, 123.81° WW	1994-2022
Halibut Bank	49°20'24" N 123°43'48" W	1992-2022

The cove is relatively more exposed to the storms from northeast and east directions. The Halibut Bank data is expected to capture the wind condition over the effective fetch extent due to its location. The data from this station also includes stronger easterly components which is essentially the outflow wind through the Fraser Valley. Therefore, the wind data from the Halibut Bank station is used for the wave assessment. Table 5 provides the wind occurrence frequency at Halibut Bank and Figure 4 shows the corresponding wind rose.

Table 5 Wind Occurrence Frequency in Percent for Halibut Bank (2008-2022)

Speed	Frequency (%)								
m/s	N	NE	E	SE	S	SW	W	NW	Total
0 - 3	3.778	2.208	3.656	4.6	2.506	1.86	3.54	4.183	26.329
3 - 6	2.974	0.547	7.596	9.684	1.919	0.802	6.574	6.846	36.942
6 - 9	0.566	0.218	8.738	6.517	0.815	0.268	5.843	3.658	26.624
9 - 12	0.12	0.061	3.908	1.966	0.129	0.039	1.104	1.003	8.329
12 - 15	0.015	*	0.951	0.34	*	*	0.063	0.225	1.609
15 - 18	*	-	0.08	0.038	*	-	*	0.028	0.154
18 - 21	-	-	*	*	-	-	-	*	*
21 - 24	-	-	*	-	-	-	-	-	*
24 - 27	-	-	*	-	-	-	-	-	*
27 - 30	-	-	-	-	-	-	-	-	-
>30	-	-	-	-	-	-	-	-	-
Total	7.455	3.037	24.932	23.148	5.376	2.974	17.13	15.948	100

Note: * indicates occurrences less that 0.001%

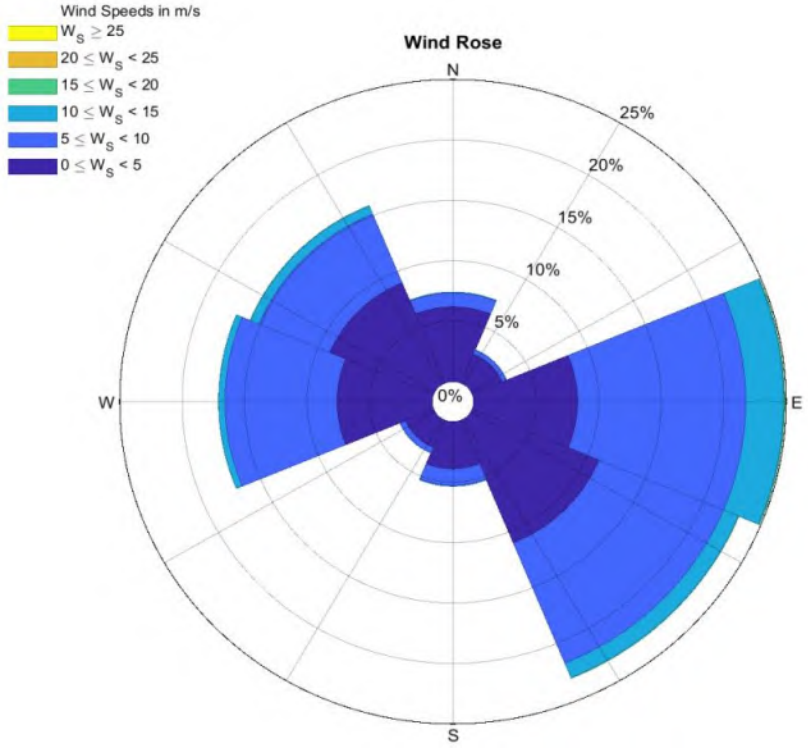


Figure 4 Wind Rose for Halibut Bank (2008-2022)

The extreme hourly wind speeds that are used to model the waves inside the cove, and which can potentially move beach sediments, are provided in Table 6.

Table 6 Extreme Winds for Key Fetch Directions

Return Period (Years)	Wind Speed (m/s)	
	NE	E
1	7.8	13.3
10	11.8	19.9
50	13.5	23.0

3.6.2 Storm Wave Modelling

A spectral wave (SW) model MIKE 21 SW was used for simulating extreme waves for the study area, by utilizing wind data discussed in the previous section. MIKE 21 SW is DHI's state-of-the-art third generation spectral wind-wave model. The model simulates wave growth due to wind action, as well as direction and wave height transformation due to refraction and shoaling as a result of water depth variations, and it includes decay due to white-capping, bottom friction and wave breaking in shallow water. The effects of wave-current interaction, non-linear wave-wave interaction and diffraction are also included, and areas which dry out can be included within the model. Due to its unique unstructured flexible mesh technique, MIKE 21 SW is particularly suited for simultaneous, i.e. in one single model domain, wave modelling at regional scale and local scales.

The MIKE 21 SW model was used to simulate waves for the 1 and 10-year return period storms from the NE direction. The wave simulations were performed using the peak water levels of corresponding return period (as provided in Table 2).

The simulated distribution of significant wave height (Hs) for 1- and 10-year return periods from the east direction are shown in Figures 5 and 6, respectively.

The results for the 10-year return period easterly storm shows that the significant wave height is 2.2 m outside the cove entrance, but it reduces rapidly entering the cove as the wave breaks at shallower depths before proceeding to the toe of the key wall with wave height of 0.3 m. The result of the 1 year return period storm also shows a similar wave condition when it reaches the shallower depth within the cove, which demonstrates that wave heights are essentially depth limited near the toe of the wall during major storms. Photo 3 visually shows how the waves within the cove drop down significantly in size when there are larger waves offshore.

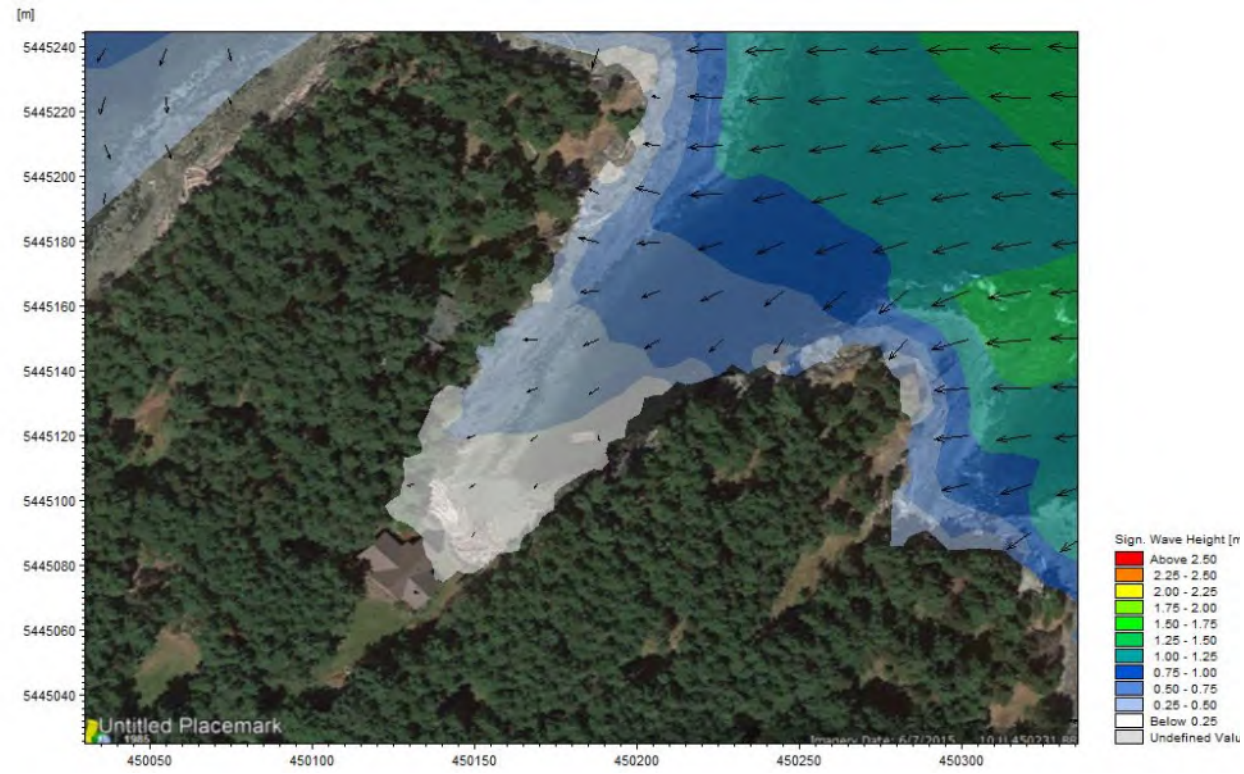


Figure 5 Simulated distribution of significant wave height for annual E storm

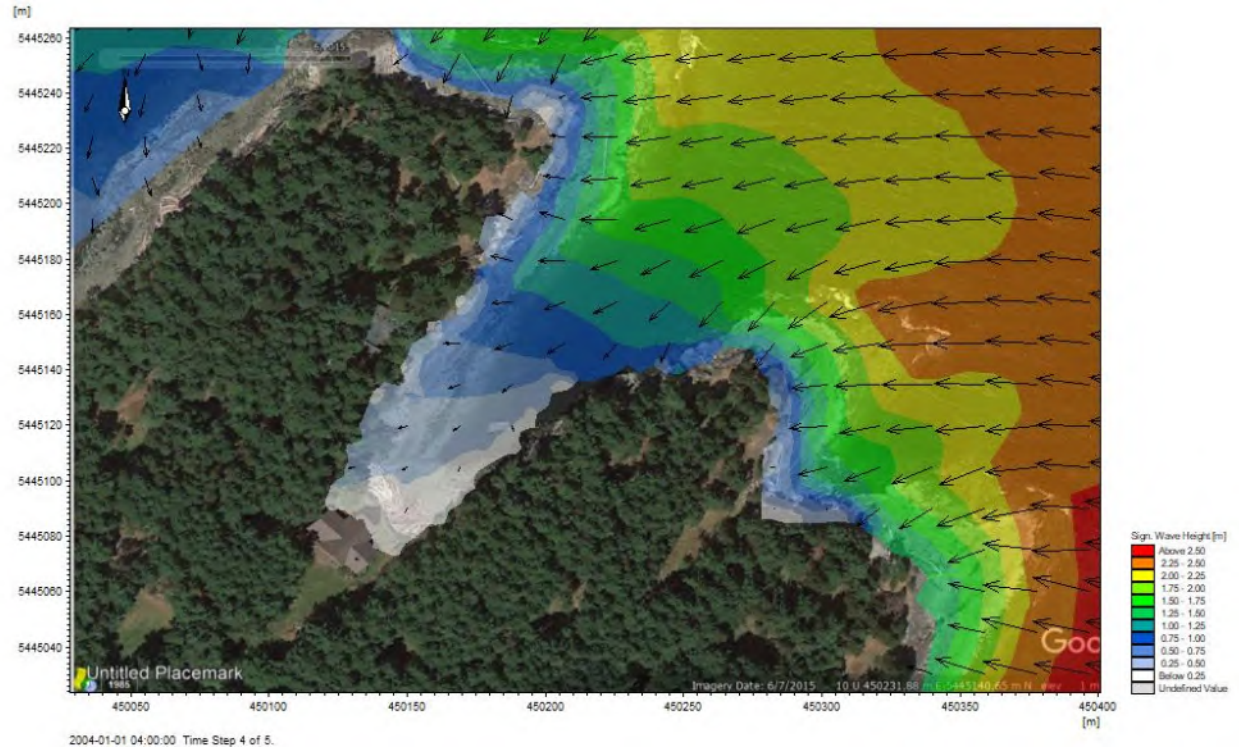


Figure 6 Simulated distribution of significant wave height for 10-year E storm

4 Erosion Assessment

Beach sediments at the toe of seawalls can experience wave induced scour during storms (CEM 2008). The extent of such scour mainly depends on the position of the wall with respect to the low water line, the type of beach material and wave exposure. During major storms, wave induced cross-shore currents transport the scoured material in the seaward direction often forming bars parallel to the structure. Within a moderate-wave environment, often the scoured beach profile is restored particularly where the exposure is not too extreme and scoured sediment is not lost from the area (Krauss 1988). It is also reported, based on field observations, that scours are found to be minimum in front of rock built dissipative walls (van Rijn 2012).

The toe of the rock armouring was located at the HHWLT elevation. The annual peak water level is slightly higher than this elevation. In such shallow water depths, broken waves reaching the toe are expected to be weak and the reflected flows would not be strong enough to move pebble dominant upper beach materials. This conclusion is consistent with the field observations (photos) showing no scour near the toe of rock armouring. It is noted that the rock armouring has been in place for approximately 15 years, likely sufficient time for erosion to be evident if it were significant. In our opinion, the rock armouring is likely reducing erosion of the shoreline as opposed to inducing erosion of the beach or adjacent shorelines. In future, as seal levels rise, exposed soil shorelines will have increased susceptibility to natural erosion processes.

5 Monitoring

The interaction of beach and structure is a long term phenomena as it may not occur continuously, but rather in an episodic fashion, dependent on the occurrence of certain storm events coinciding with certain tide conditions. A site inspection is recommended again in five years (summer 2027) to verify this assessment.

6 Summary

Shoreline rock armouring was placed at the head of the Acorn Island cove. This study investigated the interaction of the beach in front of the rock armouring with waves at high water level using a wave model. The toe of the rock wall in the study area is located at the HHWLT elevation. The waves within the cove are mostly depth limited and are estimated to be less than 0.3 m as they reach the toe of the wall. The annual peak water level, which is contributed by the joint occurrence of tide and storm surge, is slightly higher than the toe elevation. In such water depth, broken waves reaching the toe are expected to be weak and the reflected flows are not strong enough to move pebble dominant upper beach materials. Based on our site observations and subsequent analysis, in our opinion, the rock armouring is unlikely to induce significant erosion.

Sincerely,

Hammad Mir, P.Eng.
Senior Coastal Engineer

Review By:

Jason Clarke, P.Eng.
Coastal Environment Specialist

7 References

Canadian Tide and Current Tables, Volume 5, Juan de Fuca Strait and Strait of Georgia, Canadian Hydrographic Service, Fisheries and Oceans Canada, 2022.

CEM (2008) Coastal Engineering Manual, Part III, Chapters 1-6, EM 1110-2-1100, US Army Corps of Engineers.

Kraus, N.C. (1988) "The Effects of Seawalls on the Beach: An Extended Literature

Review." Journal of Coastal Research, Spec. Iss., No. 4, Autumn.

Van Rijn, L.C., (2012) Principles of sedimentation and erosion engineering in rivers, estuaries and coastal seas. Aqua Publications, The Netherlands (www.aquapublications.nl)

Shore Protection Manual, US Army Corps of Engineers, 1984.

Appendix 1 Grain Size Analysis and Rock Measurements

RYZUK GEOTECHNICAL
ENGINEERING & MATERIALS TESTING

28 Crease Avenue
Victoria, B.C.
V8Z 1S3
Tel: 250-475-3131
Fax: 250-475-3611
mail@ryzuk.com

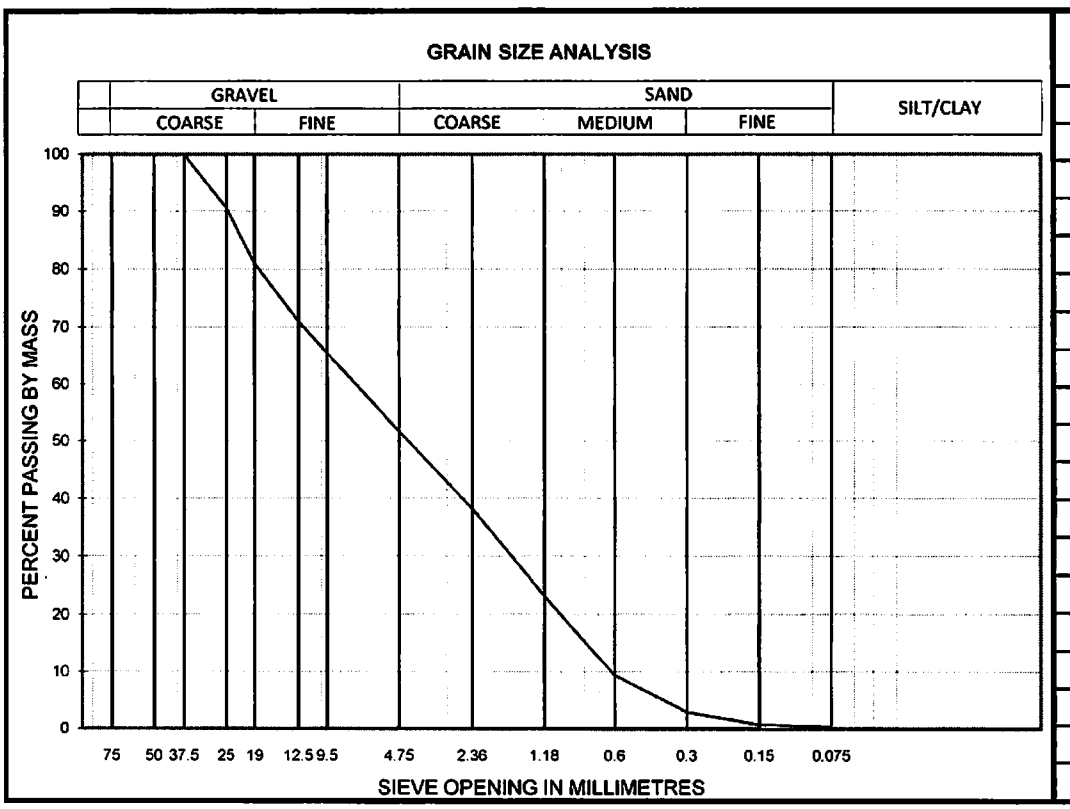
Aggregate Gradation Analysis

Project No.: 8-8449-2
Project: Materials Testing- Project # 1114-001

Client: Great Pacific Engineering and Environment

Contact: Jason Clark
Email/Fax No. jason.clark@greatpacific.ca
Copy to: Email/Fax:

SAMPLE I.D.: L#1792 SAMPLE TYPE: Marine Sediment SAMPLED BY: Client
DATE SAMPLED: 09-Sep-22 DATE RECEIVED: 12-Sep-22 DATE TESTED: 14-Sep-22
TEST METHOD: ASTM C136, D1140 SOURCE: 8M



SIEVE SIZE	PERCENT PASSING	SPEC % PASS.
150.0	100.0	-
75.0	100.0	-
50.0	100.0	-
37.5	100.0	-
25.0	90.6	-
19.0	80.9	-
12.5	71.1	-
9.5	65.5	-
4.75	51.7	-
2.36	38.3	-
1.180	23.2	-
0.600	9.4	-
0.300	3.0	-
0.150	0.7	-
0.075	0.4	-

SAMPLE DESCRIPTION: Sand and gravel

COMMENTS: Wash sieve

Per: RSL

20130MDM

RYZUK GEOTECHNICAL
ENGINEERING & MATERIALS TESTING

28 Crease Avenue
Victoria, B.C.
V8Z 1S3
Tel: 250-475-3131
Fax: 250-475-3611
mail@ryzuk.com

Aggregate Gradation Analysis

Project No.: 8-8449-2
Project: Materials Testing- Project # 1114-001

Client: Great Pacific Engineering and Environment

Contact: Jason Clark
Email/Fax No. jason.clark@greatpacific.ca
Copy to: Email/Fax:

SAMPLE I.D.: L#1793 SAMPLE TYPE: Marine Sediment SAMPLED BY: Client
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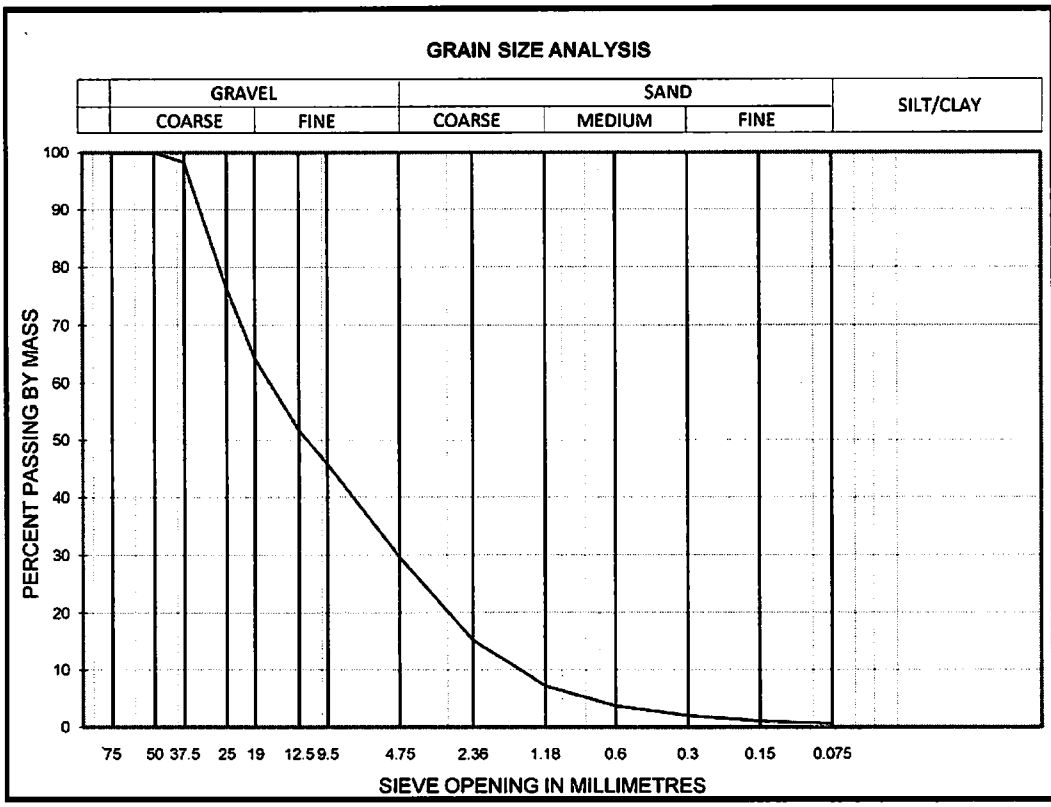

SIEVE SIZE	PERCENT PASSING	SPEC % PASS.
150.0	100.0	-
75.0	100.0	-
50.0	100.0	-
37.5	98.3	-
25.0	76.4	-
19.0	64.2	-
12.5	51.8	-
9.5	45.8	-
4.75	29.6	-
2.36	15.4	-
1.180	7.2	-
0.600	3.7	-
0.300	2.0	-
0.150	1.0	-
0.075	0.5	-

SAMPLE DESCRIPTION: Sandy gravel

COMMENTS: Wash sieve

Per:

2013DM/DM

RYZUK GEOTECHNICAL
ENGINEERING & MATERIALS TESTING

28 Crease Avenue
Victoria, B.C.
V8Z 1S3
Tel: 250-475-3131
Fax: 250-475-3611
mail@ryzuk.com

Aggregate Gradation Analysis

Project No.: 8-8449-2
Project: Materials Testing- Project # 1114-001

Client: Great Pacific Engineering and Environment

Contact: Jason Clark
Email/Fax No. jason.clark@greatpacific.ca
Copy to: Email/Fax:

SAMPLE I.D.: L#1794 SAMPLE TYPE: Marine Sediment SAMPLED BY: Client
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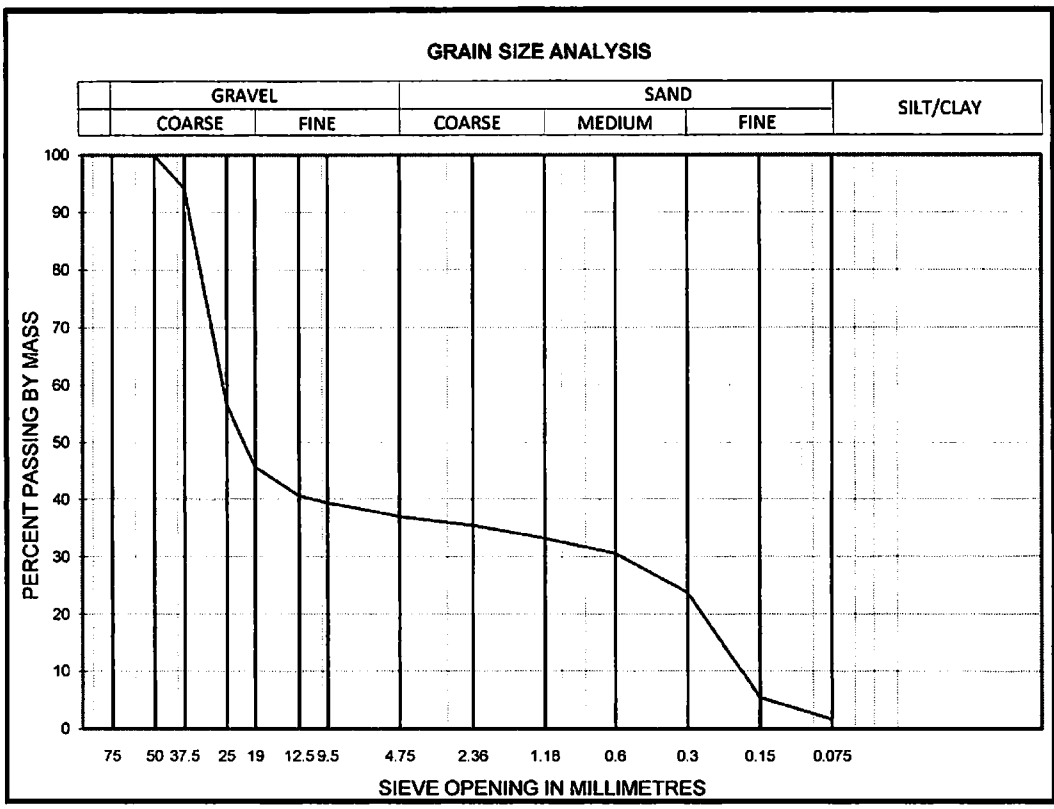

SIEVE SIZE	PERCENT PASSING	SPEC % PASS.
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75.0	100.0	-
50.0	100.0	-
37.5	94.1	-
25.0	56.7	-
19.0	45.6	-
12.5	40.6	-
9.5	39.4	-
4.75	37.0	-
2.36	35.4	-
1.180	33.2	-
0.600	30.6	-
0.300	23.7	-
0.150	5.5	-
0.075	1.7	-

SAMPLE DESCRIPTION: Gravel and sand, trace silt

COMMENTS: Wash sieve

Per:

2013GRADM

RYZUK GEOTECHNICAL
ENGINEERING & MATERIALS TESTING

28 Crease Avenue
Victoria, B.C.
V8Z 1S3
Tel: 250-475-3131
Fax: 250-475-3611
mail@ryzuk.com

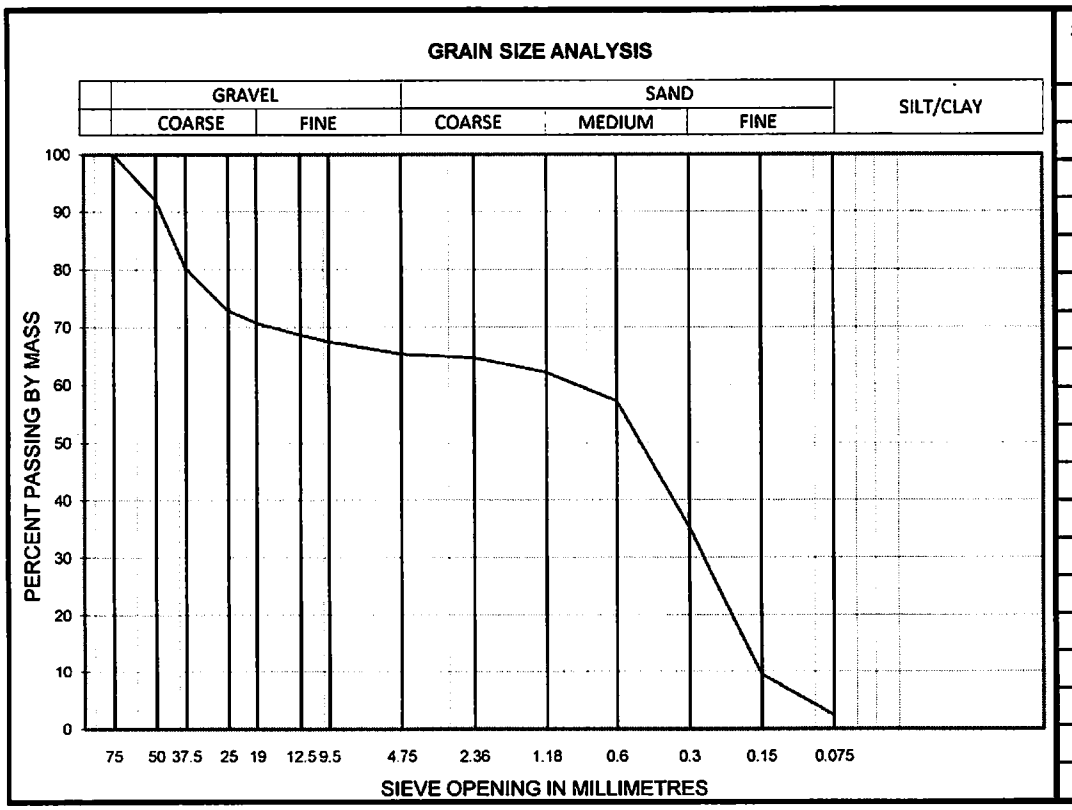
Aggregate Gradation Analysis

Project No.: 8-8449-2
Project: Materials Testing- Project # 1114-001

Client: Great Pacific Engineering and Environment

Contact: Jason Clark
Email/Fax No. jason.clark@greatpacific.ca
Copy to: Email/Fax:

SAMPLE I.D.: L#1795 SAMPLE TYPE: Marine Sediment SAMPLED BY: Client
DATE SAMPLED: 09-Sep-22 DATE RECEIVED: 12-Sep-22 DATE TESTED: 14-Sep-22
TEST METHOD: ASTM C136, D1140 SOURCE: 76M



SIEVE SIZE	PERCENT PASSING	SPEC % PASS.
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75.0	100.0	-
50.0	92.0	-
37.5	80.2	-
25.0	72.9	-
19.0	70.7	-
12.5	68.7	-
9.5	67.5	-
4.75	65.4	-
2.36	64.7	-
1.180	62.2	-
0.600	57.2	-
0.300	35.3	-
0.150	9.5	-
0.075	2.4	-

SAMPLE DESCRIPTION: Gravelly sand, trace silt

COMMENTS: Wash sieve

Per: RSL

2013CMDM

Acorn Island Grain Size Sampling

Rocks that were removed from grain size samples prior to lab analysis (by Ryzuk)

09-Sep-22

Measurements in mm

Station No.	Axis A	Axis B	Axis C
76 m	grain size sample (11881 g total - no rocks removed)		
42 m	grain size sample (8916 g - excluding rocks below)		
	50	40	25
	95	60	45
	80	50	45
	65	45	30
	85	65	30
	65	40	30
	80	55	20
	90	60	25
	90	65	25
	85	65	35
	65	45	40
	75	55	25
	70	70	20
	55	35	25
	80	55	40
	70	70	50
	65	35	20
	70	55	40
	65	60	25
	70	60	35
	65	60	35
	65	55	45
	70	45	45
	70	50	35
	65	60	20
	65	55	30
22 m	(grain size sample 9756 g - excluding rocks below)		
	75	50	40
	55	45	30
	100	60	45
	60	55	55
	120	70	45
	70	40	30
	75	65	45
	65	45	40
	70	40	30
	140	90	60
	60	40	30
	200	120	100
	170	130	95
	65	40	35
8 m	(grain size sample 12296 g - excluding rocks below)		
	55	40	30
	45	45	20
	55	50	35
	65	40	15
	80	45	25
	50	40	25
	55	35	25
	55	35	20
	65	40	30
	70	30	30
	60	40	35
	50	35	25
	60	40	30
	55	45	25

FORM_C_V25 (Charge)

VICTORIA LAND TITLE OFFICE

LAND TITLE ACT
FORM C (Section 233) CHARGE
GENERAL INSTRUMENT - PART 1 Province of British Columbia

Dec-18-2019 18:24:15.001

CA7939129

Your electronic signature is a representation that you are a designate authorized to certify this document under section 168.4 of the *Land Title Act,* RSBC 1996 c.250, that you certify this document under section 168.41(4) of the act, and that an execution copy, or a true copy of that execution copy, is in your possession.

Lisa Ehrlich 93ST4R
Digitally signed by Lisa Ehrlich 93ST4R
Date: 2019.12.18 18:22:09 -08'00'

1. APPLICATION: (Name, address, phone number of applicant, applicant's solicitor or agent)

Salvador Davis and Co.
Notaries Public
101 - 9830 Second Street
Sidney BC V8L 3C6

LTO File No. 10166
Phone No. 250-656-3951

Document Fees: $74.16

Deduct LTSA Fees? Yes ☑

2. PARCEL IDENTIFIER AND LEGAL DESCRIPTION OF LAND:

[PID] [LEGAL DESCRIPTION]

009-796-045 **DISTRICT LOT 19 (FLAT TOP ISLANDS) NANAIMO DISTRICT**

STC? YES ☐

3. NATURE OF INTEREST CHARGE NO. ADDITIONAL INFORMATION

Covenant

4. TERMS: Part 2 of this instrument consists of (select one only)

(a) ☐ Filed Standard Charge Terms D.F. No. (b) ☑ Express Charge Terms Annexed as Part 2

A selection of (a) includes any additional or modified terms referred to in Item 7 or in a schedule annexed to this instrument.

5. TRANSFEROR(S):

JUDITH MARY WESTON

6. TRANSFEREE(S): (including postal address(es) and postal code(s))

GABRIOLA ISLAND LOCAL TRUST COMMITTEE

700 NORTH ROAD
GABRIOLA ISLAND BRITISH COLUMBIA
V0R 1X3 CANADA

7. ADDITIONAL OR MODIFIED TERMS:

8. EXECUTION(S): This instrument creates, assigns, modifies, enlarges, discharges or governs the priority of the interest(s) described in Item 3 and the Transferor(s) and every other signatory agree to be bound by this instrument, and acknowledge(s) receipt of a true copy of the filed standard charge terms, if any.

Officer Signature(s)	Execution Date			Transferor(s) Signature(s)
	Y	M	D	
Robert Fenton Barrister & Solicitor 9888 Canal Road South Pender Island, BC V0N 2M3 250-629-6774	19	11	27	Judith Mary Weston

OFFICER CERTIFICATION:

Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the *Evidence Act*, R.S.B.C. 1996, c.124, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the *Land Title Act* as they pertain to the execution of this instrument.

FORM_D1_V25

LAND TITLE ACT
FORM D

EXECUTIONS CONTINUED

Officer Signature(s)	Execution Date Y	M	D	Transferor / Borrower / Party Signature(s)
Leslie Rebecca McErlean Commissioner for Taking Affidavits in British Columbia 700 North Road Gabriola, BC V0R 1X3 Commission Expires June 30, 2022 (as to both signatures)	19	11	28	Gabriola Island Local Trust Committee by its authorized signatory: Name: Daniel John Rogers Name:Scott Colbourne

OFFICER CERTIFICATION:
Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the *Evidence Act*, R.S.B.C. 1996, c.124, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the *Land Title Act* as they pertain to the execution of this instrument.

SECTION 219 COVENANT

TERMS OF INSTRUMENT – Part 2

WHEREAS:

A. The Owner is the registered owner of District Lot 19 Nanaimo District ("Lot 19"); and
B. Lot 19 is within a development permit area designated for the protection of the natural environment, its ecosystems and biological diversity in the Gabriola Island Official Community Plan, and is identified as a rare woodland habitat in the Sensitive Ecosystem Inventory of the Province of British Columbia; and
C. The Owner or the Owner's predecessors in title constructed certain structures on Lot 19, including a residential dwelling and a boulder wall, which activities impacted the natural environment; and
D. Lot 19 is the subject of a Biophysical Survey prepared by Kayt Chambers R.P. Bio. dated May, 2017, a copy of which is attached to this Agreement as Schedule A (the "Biophysical Survey"); and
E. Lot 19 is also the subject of a Mitigation and Compensation Measures addendum prepared by Kayt Chambers R.P. Bio. dated June 26, 2017, a copy of which is attached to this Agreement as Schedule B (the "Addendum");
F. The Addendum provides recommendations regarding the restoration and enhancement of the environment of Lot 19 that was impacted by construction activities, and recommends that such measures be set out in a conservation covenant or other protection instrument for the Land; and
G. The Owner has applied to the Gabriola Island Local Trust Committee (GILTC) for certain authorizations for the activities that may have disturbed the natural environment, and wishes in connection with the applications to grant the covenants set out in this Agreement pursuant to s. 219 of the *Land Title Act*;

NOW THEREFORE in consideration of the premises and the sum of $1.00 now paid by the GILTC to the Owner (the receipt and sufficiency of which are acknowledged by the Owner), the parties agree as follows:

Interpretation

1. In this Agreement

"Development Variance Permit" means a development variance permit issued by the GILTC pursuant to application GB-DVP-2017.1;

"GILTC" means the Gabriola Island Local Trust Committee

"Land" means the land described in item 2 of Part 1 of this General Instrument;

"Riprap Wall" means that certain boulder wall described in and depicted on page 15 of

the Biophysical Survey;

"Species at Risk" means a threatened or endangered species as defined under the *Species at Risk Act* (Canada).

Restoration and Enhancement of Riparian Habitat

2. The Owner must not occupy any residential dwelling on the Land, or allow or permit any other person to occupy any residential dwelling on the Land, unless the Owner has complied with the recommendations regarding Riparian Vegetation Loss set out in Section 5.1 of the Addendum.

3. Without limiting the generality of Section 2, the Owner must do the following:

   (a) engage a member of the British Columbia Society of Landscape Architects with experience in landscaping with plants native to the southern Gulf Islands, to prepare a revegetation plan in respect of the area of the Land that was disturbed by the construction of the dwelling house and the Riprap Wall, which plan shall include the provision of compensatory habitat in respect of riparian habitat that has been destroyed or degraded by the construction of the dwelling house and the Riprap Wall, the removal of non-native vegetation, and the planting of species listed in Section 4.1.1.1 of the Addendum;

   (b) within 3 months of the date of issuance of the Development Variance Permit, submit the revegetation plan to the GILTC for its approval as to the sufficiency of the plan;

   (c) within 12 months of the date of issuance of the Development Variance Permit, implement the plan under the supervision of the landscape architect; and

   (d) maintain all plantings so as to ensure the survival of all transplanted vegetation, replacing as required any specimens that do not survive transplantation.

Protection from Erosion

4. The Owner must not occupy any dwelling house on the Land unless the Owner has complied with the recommendations regarding Marine Shoreline Erosion set out in Section 5.2 of the Addendum.

5. Without limiting the generality of Section 4, the Owner must do the following:

   (a) within 3 months of the date of issuance of the Development Variance Permit, engage a hydrological engineer to prepare a baseline erosion and sediment control analysis of the Riprap Wall, and to monitor erosion and sedimentation processes in the vicinity of the wall for at least 5 years;

(b) within 6 months of the date of issuance of the Development Variance Permit, submit the analysis to the GILTC for its approval as to the sufficiency of the analysis;

(c) at the conclusion of the monitoring period specified in subsection (a), or earlier if the hydrological engineer determines that the ultimate impact of the wall can be evaluated with reasonable certainty, engage the hydrological engineer to prepare a report setting out the engineer's conclusions as to whether the Riprap Wall is causing long-term negative impact on the stability of the adjacent shoreline and the engineer's recommendations as to measures that are required to mitigate or, if practicable, eliminate any such impact;

(d) submit the report to the GILTC for its approval as to the sufficiency of the report and recommendations;

(e) implement the hydrological engineer's recommendations under the supervision of the engineer within a reasonable time; and

(f) if recommended by the hydrological engineer, engage the hydrological engineer or another suitably qualified person to monitor, for the period of time recommended by the hydrological engineer, and report to the Owner and the GILTC on the effectiveness of the erosion control or mitigation measures that have been undertaken.

Protection of Sensitive Habitats and Species at Risk

6. The Owner must not do, or permit any other person to do, any of the following on any portions of the Land that are described in section 7:

(a) operate any motorized vehicle except an all-terrain vehicle (ATV) or utility task vehicle (UTV) that is operated exclusively within a grass and dirt trail that is no-wider than 1.5 metres and has the route shown by the thick black line on the map attached to this Agreement as Schedule C.

(b) deposit any earth, fill or other material for the purpose of filling in or raising the level of the Land or for any other purpose;

(c) remove or damage any vegetation, except to comply with this Agreement or any condition contained in any development permit issued by the GILTC, or to remove a specimen of a plant species that is not native to the Land;

(d) remove or displace any soil or beach material, unless the work is being done in the course of an archaeological assessment authorized under the *Heritage Conservation Act* and in accordance with the terms of any permit issued under that Act; or

(e) construct, erect or place any building, modular home, mobile home or unit,

improvement or structure of any kind.

7. The areas of the Land to which section 6 applies are the following:

   (a) areas within 15 m landward of the natural boundary of the Land as defined in the *Land Act*;

   (b) areas within 15 m of the seasonal wetlands identified in the Biophysical Survey as Swamp #1 and Swamp #2;

   (c) areas within 15 m of the year-round freshwater pond identified in the Biophysical Survey;

   (d) areas within 100 m of the leaf canopy of any specimen of Garry oak;

   (e) areas within 100 m of the trunk of any tree that contains a nest of an eagle; and

   (f) areas within 100 m of any portion of the habitat of any specimen of a Species at Risk of whose existence the Owner is aware, or ought reasonably to be aware.

General Terms and Conditions

8. The Owner shall be entitled to a discharge of this Agreement, at the cost of the Owner, if the GILTC has not issued the Development Variance Permit within 12 months of the date of registration of this Agreement in the Land Title Office.
9. The Owner shall be entitled to a modification of this Agreement to delete sections 2 through 5 with the exception of 3 (d), at the cost of the Owner, if the Owner's obligations under those sections have been fully discharged.
10. Where this Agreement refers to the approval of a plan, analysis or report by the GILTC, the GILTC may withhold approval if the document does not, in its reasonable opinion, achieve the purpose contemplated for such a plan, analysis or report by the Biophysical Survey or the Addendum, and may for that purpose engage the author of the Biophysical Survey and Addendum or another person having equivalent qualifications, at the Owner's cost, to provide advice.
11. The Owner will indemnify and save the GILTC harmless from all actions, causes of action, claims, demands, suits, losses, damages, debts, accounts, liabilities, costs, expenses and compensation of any kind, including fees of solicitors and other professional advisors, arising out of any breach, violation or non-performance by the Owner of the covenants set out in this Agreement.
12. No term, condition, covenant or other provision or breach of this Agreement will be considered to have been waived by the GILTC unless such waiver is expressed in writing by the GILTC and any such waiver is not a waiver of any other term, condition, covenant, or other provision or any other breach of this Agreement.

13. This Agreement extends to, is binding upon and enures to the benefit of the parties and their respective heirs, executors, administrators, successors and assigns.
14. In this Agreement, unless the context otherwise requires, the singular includes the plural and the masculine includes the feminine gender and a corporation.
15. This Agreement will be interpreted according to the laws of the Province of British Columbia.
16. Where there is a reference to an enactment of the Province of British Columbia or Canada in this Agreement, that reference includes a reference to any subsequent enactment of the Province of British Columbia or Canada of like effect and, unless the context otherwise requires, all statutes referred to in this Agreement are enactments of the Province of British Columbia.
17. If any section of this Agreement, or any part of a section, is found to be illegal or unenforceable, that part or section, as the case may be, will be considered separate and severable and the remaining parts or sections, as the case may be, will not be affected and will be enforceable to the fullest extent permitted by law.
18. This Agreement will be registered as a charge against the Land pursuant to section 219 of the *Land Title Act*.

" SCHEDULE "A"

Acorn Island Biophysical Survey – May, 2017

For The Gabriola Island Local Trust Committee (Islands Trust) on behalf of Chris and Judy Weston

By Kayt Chambers, R.P.Bio., Baynes Sound Environmental

Statement of Qualifications

Kayt Chambers is a professional biologist (R.P.Bio. #1967) with over two decades of field biology experience. She has worked as a field technician in marine, freshwater, and terrestrial environments in a range of habitats within the Pacific Northwest region. Specifically, Kayt has conducted site inventories for marine intertidal areas, riparian areas (marine and freshwater), and constructed (and natural) wetlands. Her work with species-at-risk includes sampling for fish, mollusks, and amphibians.

TABLE OF CONTENTS:

1.0 INTRODUCTION

The owners of Acorn Island have built a house and deck on the footprint of a residential building adjacent to the backshore of a narrow marine inlet on the northeast side of the island (refer to the Site Survey Plan). As part of the construction of the house and deck, shoreline protection was installed along the backshore in the form of a riprap rock wall (Figures 1 and 2).

This report is a summary of a Site Background Analysis and Preliminary Site Inventory as per the requirements of the Gabriola Island Local Trust Committee, Development Permit (DP) area for the Flat Top Islands (refer to map in Appendix A).

Figure 1. Subject house built on beachfront.

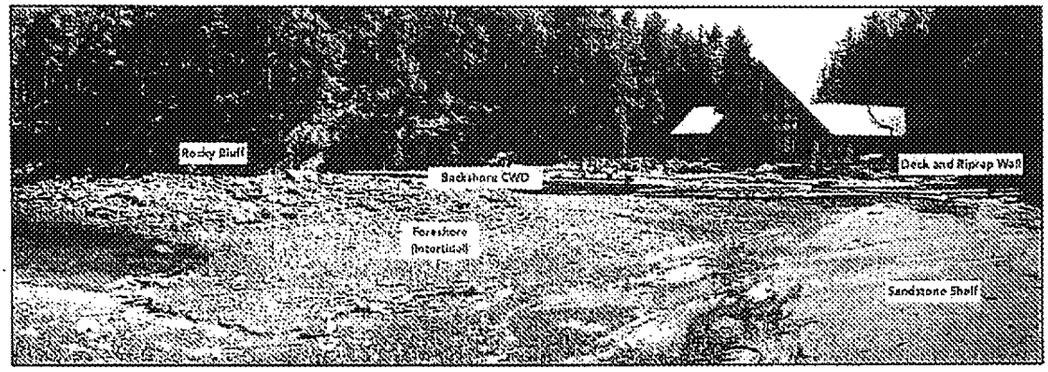
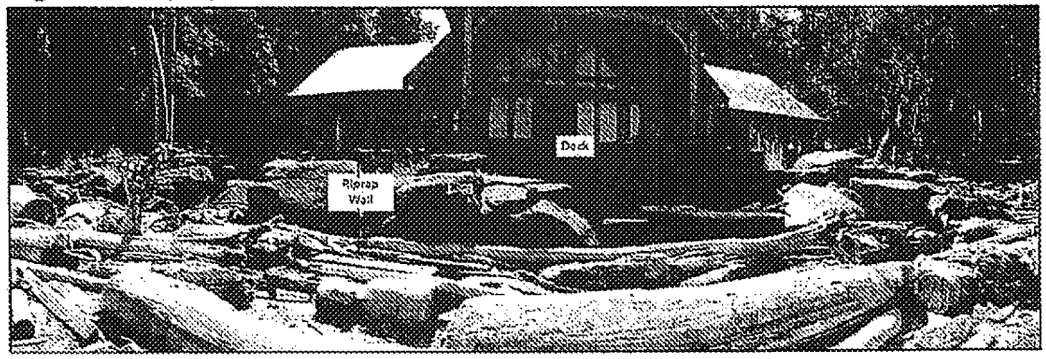


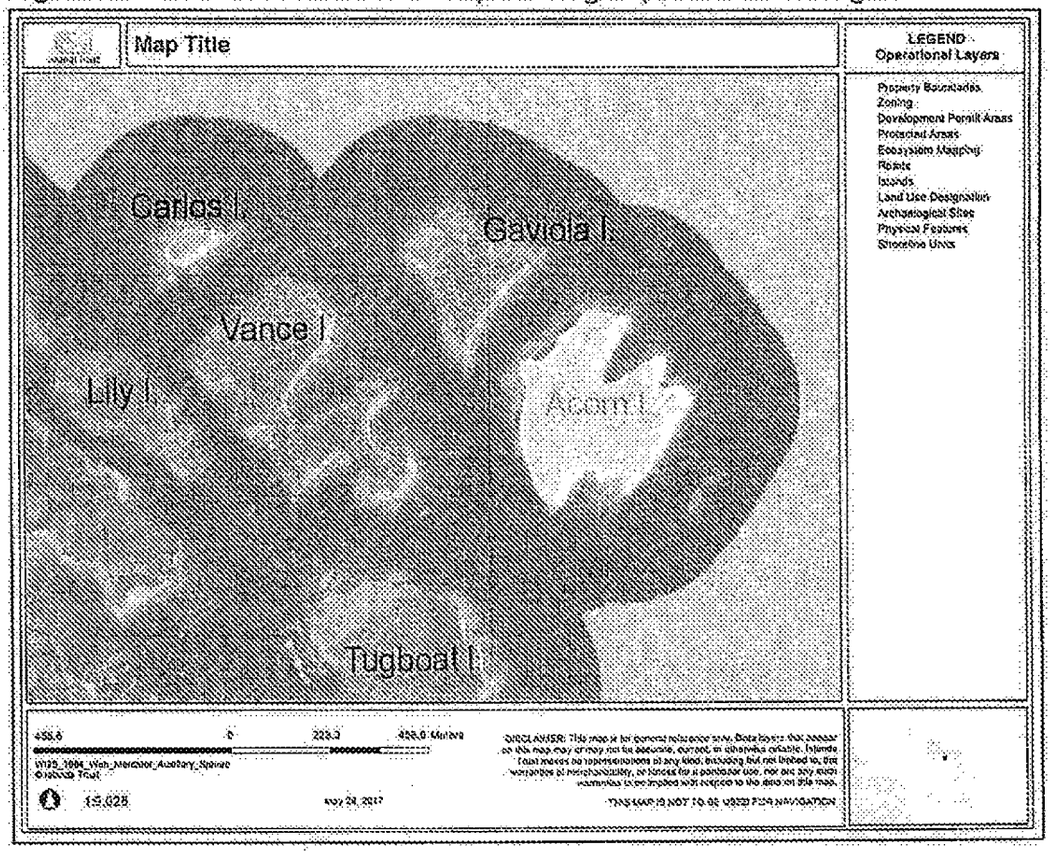
Figure 2. Riprap wall constructed on backshore habitat of shoreline.



1.1 Site Background Analysis:

Acorn Island is a 24-acre island located in the Georgia Strait off the southeast end of Gabriola Island (Figure 3). It is one of a dozen islets called the Flat Top Islands that are located at the entrance to Silva Bay, and one of the only in this group that is designated as *Woodland Habitat* by the provincial Sensitive Ecosystem Inventory (SEI)[1] (refer to Appendix B for SEI Atlas Mapsheet 92G012).

Figure 3. Acorn Island in the Flat Top Island group, Strait of Georgia.



SEI Woodland Habitats are dry, open ecosystems consisting of between 10-25% tree cover with mixed stands of Garry oak/Arbutus, Garry oak/Douglas-fir and/or Arbutus/Douglas-fir. The open forest cover can be an indicator of shallow soils and bedrock outcroppings, creating a diversity of habitats that attract a wide range of species.

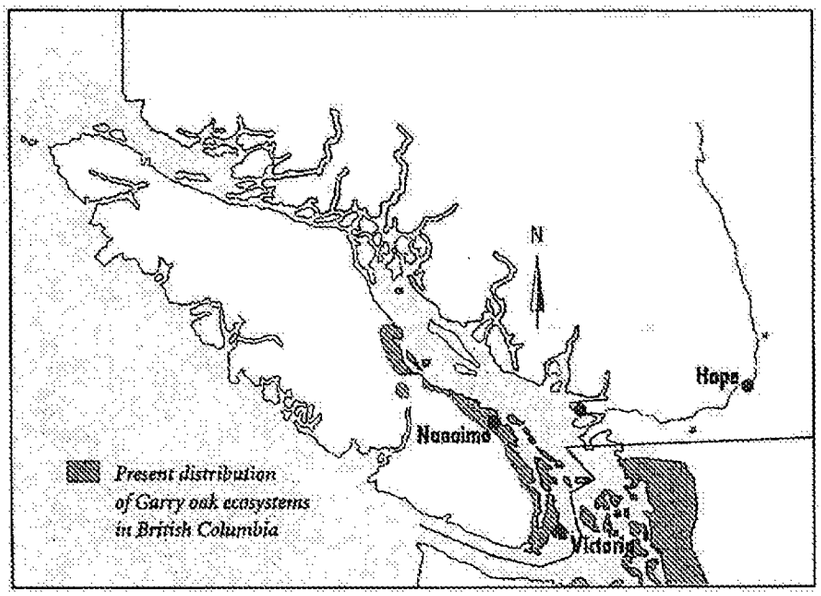
[1] Ministry of Environment EcoCat: The Ecological Reports Catalogue. Sensitive Ecosystem Inventory Maps (http://a100.gov.bc.ca/pub/acat/public/viewReport.do?reportId=2124) as retrieved on 29-May-17.

This report is a summary of a biophysical assessment of the habitat surrounding the subject house, deck and riprap wall recently built by the owners of Acorn Island. Recommendations for habitat restoration and enhancement are given in Section 6.0.

1.1.1 SAR and Sensitive Ecosystem Occurrences

Numerous organisms with species-at-risk (SAR) status are associated with Garry Oak Ecosystems on islands within this region. For example, according to the Garry Oak Ecosystem Recovery Team (GOERT), the SAR that inhabit these threatened ecosystems include nearly 70 plant species, 20 invertebrates (insects and other species), 15 birds, 3 mammals, and 2 reptiles[2]. The distribution of these ecosystems is limited to the southeast coast of Vancouver Island and nearby Gulf Islands in British Columbia, as well as a small area in the lower mainland (refer to Figure 4).

Figure 4. Garry Oak Ecosystem Distribution



[2] Garry Oak Ecosystem Recovery Team, Species-at-Risk list (http://www.goert.ca/publications_resources/species_at_risk.php) as retrieved on 16-May-17.

As part of the regulatory requirements under the Islands Trust Official Community Plan for Gabriola Island (and the Flat Top Islands), a Development Permit is required for land development prior to construction. As well, sensitive ecosystems such as those associated with Garry oaks require field assessment prior to a proposed development under the federal *Species-at-Risk Act (SARA)* and/or the provincial *Wildlife Act* to allow for adequate mitigation planning.

The Garry Oak Ecosystem Recovery Team (GOERT) is a provincial organization with a mandate to protect and recover the threatened Garry oak and associated ecosystems[3].

According to GOERT, Garry oak ecosystems found in this region include "*a complex of closely related coastal bluff, maritime meadow, vernal pool, grassland, rock outcrop and transitional forest ecosystems*". A multi-species approach is employed under GOERT to maximize the protection of as many threatened species with common biological characteristics and/or habitat requirements as possible.

1.1.2 Site Description

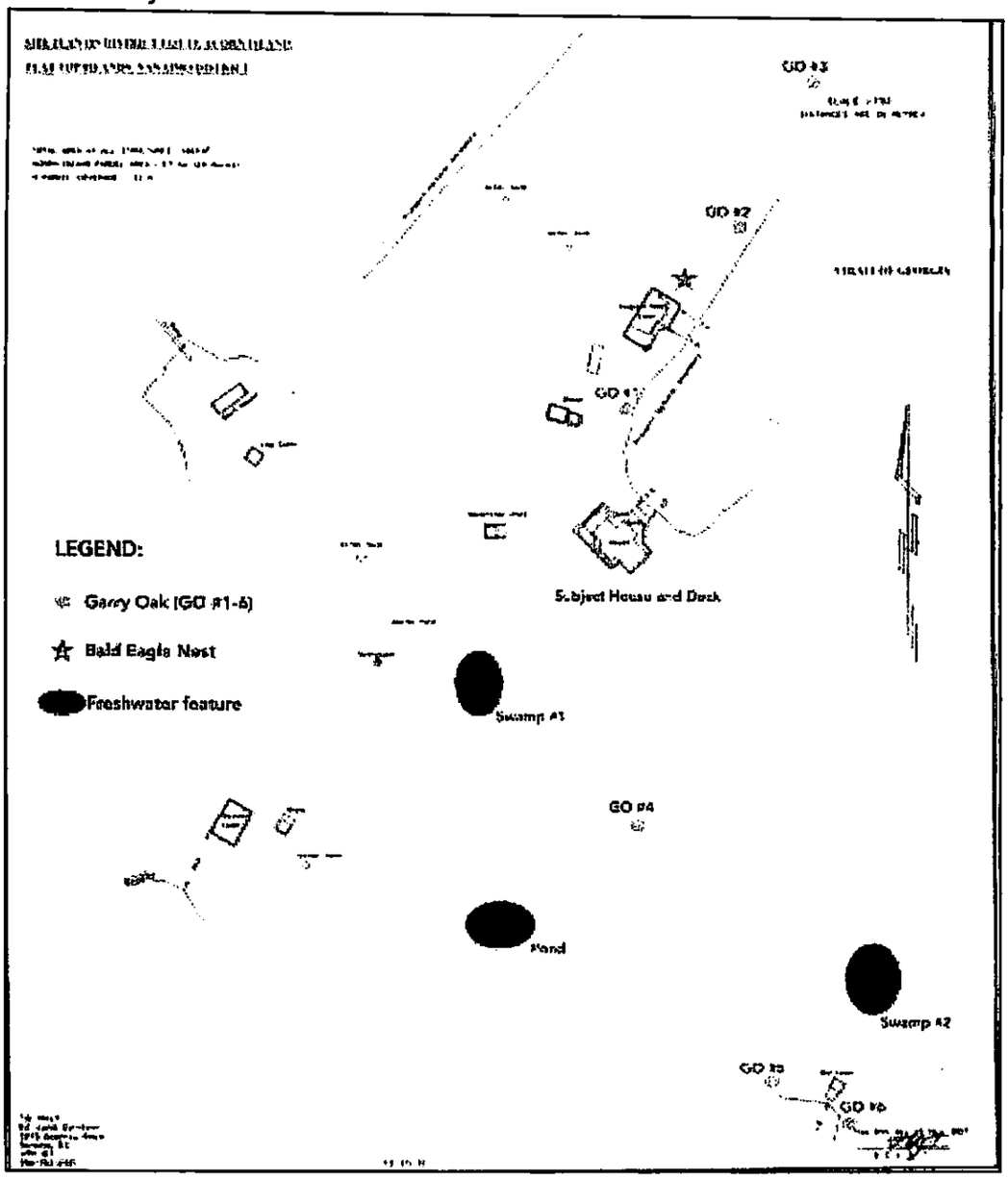
As previously described, the house is adjacent to the shoreline of a narrow inlet on the northeast side of Acorn Island (Photo 1). The inlet is defined by sandstone shelf on the northwest side (Photo 2) and sandstone bluff on the southeast side (Photo 3). The narrow bay at the foot of the inlet (adjacent to the house) contains a small pocket of fine sediments (sand/gravel/shell) covered in coarse woody debris (CWD).

A deck extends from the northeast side of the house to the shoreline, and a riprap rock wall was built in the backshore between the deck and the beach (Photo 4). The riparian area surrounding the house is landscaped with lawn and some ornamental conifer bushes and grasses (Photos 5 and 6).

Refer to Section 3.1 for a detailed description of the beach and property surrounding the house.

[3] Garry Oak Ecosystem Recovery Team (http://www.goert.ca/about/index.php) as retrieved on 16-May-17.

Site Survey Plan:



Note: Garry oaks, Eagles nest, and water feature locations are approximate only.

1.1.3 Raptor and Heron Nests

The provincial Best Management Practices (BMPs) for development activity near established Bald eagle (*Haliaeetus* leucocephalus) nests[4] and Great-blue heron (*Ardea Herodias*) nests[5] were reviewed prior to this field survey.

1.1.4 Fish-bearing Watercourses

The provincial Fish Inventories Data Queries (FIDQ) resource[6] was checked prior to this field survey. FIDQ provides easy access to BC lake, stream and fish data from the provincial BC Geographic Data Warehouse (BCGW).

2.0 METHODS

Prior to the field survey, a background review of environmental information for Acorn Island and the surrounding region included reference to:

i. The provincial Conservation Data Centre (CDC) Species and Ecosystem database[7],
ii. The Ministry of Environment Ecological Reports Catalogue (EcoCat) Sensitive Ecosystem Inventory,
iii. The Best Management Practices for Garry Oak and Associated Ecosystems[8],
iv. The Environmental Guidelines for Urban and Rural Land Development in British Columbia (Develop With Care: Section 4, Environmentally Valuable

[4] The Environmental Guidelines for Urban and Rural Land Development in British Columbia: Fact Sheet #10 Bald Eagles and Ospreys (http://www.wildlifetree.ca/docs/Fact-Sheet-10-eagles-osprey.pdf) as retrieved on 30-May-17.
[5] The Environmental Guidelines for Urban and Rural Land Development in British Columbia: Fact Sheet #11 Great blue herons (http://www.env.gov.bc.ca/wld/documents/bmp/devwithcare/Fact-Sheet-11-herons.pdf) as retrieved on 30-May-17.
[6] Ministry of Environment Fish Inventories Data Queries (http://a100.gov.bc.ca/pub/fidq/searchWatershedDictionary.do) as retrieved on 16-May-17.
[7] Conservation Data Centre BC Species and Ecosystems Explorer (http://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data-centre/explore-cdc-data/species-and-ecosystems-explorer) as retrieved on 01-May-17.
[8] Best Management Practices for Garry Oak and Associated Ecosystems (http://www.goert.ca/documents/GOERT-BMPs.pdf) as retrieved on 16-May-17.

Resources)[9], and

v. The Stewardship Series Coastal Shore Stewardship: A Guide for Planners, Builders, and Developers on Canada's Pacific Coast[10].

2.1 Survey Targets:

A property designated as Woodland Habitat (i.e., mixed stands of Garry oak/Arbutus, Garry oak/Douglas-fir and/or Arbutus/Douglas-fir) in the Georgia Strait by the SEI Atlas has the potential to have numerous species-at-risk (some of which can be difficult to locate in the field). As such, the target species for this preliminary site survey included any plants or animals that are known to have SAR status or are unusual in this bioregion.

2.2 Field Survey:

The field survey of Acorn Island was designed with reference to the provincial Develop With Care (2014) Bio-Inventory Terms of Reference document[11]. Assessment of the main house site involved a detailed search for Environmentally Valuable Resources (EVRs) within the marine intertidal and riparian habitats surrounding the subject house on May 17th, 2017.

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[9] Develop With Care: Section 4, Environmentally Valuable Resources (http://www.env.gov.bc.ca/wid/documents/bmp/devwithcare/DWC-Section-4.pdf) as retrieved on 16-May-17.

[10] Provincial Stewardship Series. Coastal Shore Stewardship: A Guide for Planners, Builders and Developers (http://www.llbc.leg.bc.ca/public/pubdocs/bcdocs/368207/part1.pdf) as retrieved on 16-May-17.

[11] Develop With Care, Appendix B: Bio-Inventory Terms of Reference (http://www.env.gov.bc.ca/wid/documents/bmp/devwithcare/DWC-Appendices-A-F.pdf) as retrieved on 16-May-17.

3.0 RESULTS

3.1 Preliminary Site Inventory

3.1.1. Plant Community

The plant species assemblage and predominant forest cover on Acorn Island closely resemble the Coastal Douglas-fir Moist Maritime (CDFmm/02) sub-variant Douglas-fir/Arbutus plant community. Garry oak trees are present but widely dispersed (refer to the Site Survey Plan) and the majority of the forest cover on the island exceeds the 10-25% that defines an SEI Woodland Habitat (see Photos 7 and 8).

The tree species observed (in approximate order of higher to lower dominance) includes Douglas-fir (*Pseudotsuga menziesii*), Arbutus (*Arbutus menziesii*), Shore pine (*Pinus contorta* var. *contorta*), Trembling aspen (*Populus tremuloides*), Garry oak (*Quercus garryana*), Bigleaf maple (*Acer macrophyllum*), Saskatoon (*Amelanchier alnifolia*), and Red alder (*Alnus rubra*).

The shrub species observed are Salal (*Gaultheria shallon*), Common snowberry (*Symphoricarpos albus*), Oceanspray (*Holodiscus discolor*), and the invasive English Holly (*Ilex aquifolium*).

The forb species observed are Broad-leaved stonecrop (*Sedum spathulifolium*), Scouring-rush (*Equisetum hyemale*), Dull Oregon-grape (*Mahonia nervosa*), Sword fern (*Polystichum munitum*), Bracken fern (*Pteridium aquilinum*), Common rush (*Juncus effusus*), *Carex* sp., and various grass and moss species.

None of the SAR plant species commonly associated with Garry Oak Ecosystems were observed. This lack of observation does not verify the absence of these rare organisms, however.

3.1.2. Marine Habitat

The shoreline of Acorn Island is characterized by a series of sandstone shelves, low elevation rocky bluffs, and pocket bays with cobble/gravel/shell sediment accumulations.

The marine biota observed on the intertidal beach in front of the subject house includes Rockweed (*Fucus distichus*), Bull kelp (*Nereocystis leutkeana*), Sea cauliflower (*Leathesia difformis*), the invasive Wireweed (*Sargassum muticum*), Sea lettuce (*Ulva lactuca*), Hairy shore crabs (*Hemigrapsus oregonensis*), Purple shore crabs (*Hemigrapsus nudus*), a Red rock crab (*Cancer productus*), Pacific oysters (*Crassostrea gigas*), Little-brown barnacles (*Chthamalus dalli*), Sitka periwinkles (*Littorina sitkana*), Checkered periwinkles (*Littorina scutulata*), Pacific blue mussels (*Mytilus trossulus*) and Aggregating anemones (*Anthopleura elegantissima*).

A number of unidentified marine birds were also observed.

3.1.3. Topography and Terrestrial Habitat

Acorn Island is characterized as a low relief and composed of the relatively young *Gabriola formation* sandstone bedrock[12].

The forest displays evidence of shallow topsoil with the relatively small stature of the Douglas-firs and other tree species. The stunted growth of this forest could also be attributed to the wind and saline conditions resulting from exposure to the Georgia Strait.

Terrestrial vertebrate species observed include Mule deer (*Odocoileus hemionus*), Canadian geese (*Branta canadensis*), and a variety of songbirds.

The provincial Wildlife Tree Atlas[13] has documented two Bald eagle nests on the eastern side of Acorn Island. A third nest was observed above the small cabin called the Eagles Nest Cabin (Photo 9) near the main house, but no eagles were observed in the nest.

The provincial Best Management Practices (BMPs) for development activity near established Bald eagle (*Haliaeetus* leucocephalus) nests[14] in rural areas

[12] Gabriola Land & Trails Trust – Gabriola's Geology (http://www.galtt.ca/geology.html) as retrieved on 27-May-17.
[13] BC Wildlife Tree Atlas (http://www.wildlifetree.ca/atlas.html) as retrieved on 16-May-17.
[14] The Environmental Guidelines for Urban and Rural Land Development in British Columbia: Fact Sheet #10 Bald Eagles and Ospreys (http://www.wildlifetree.ca/docs/Fact-Sheet-10-eagles-osprey.pdf) as retrieved on 30-May-17.

recommends a minimum of a 100-m buffer distance from nest tree to proposed construction. For Great-blue heron (*Ardea Herodias*) nests[15], the minimum buffer distance is 200-m. No Great-blue heron nests (i.e., rookeries) were observed, however.

The provincial Fish Inventories Data Queries (FIDQ) resource[16] was checked prior to the site survey. No fish-bearing watercourses were documented for Acorn Island and no drainages suitable as anadromous fish habitat were observed.

3.1.4. Land-uses

A variety of small residential and storage buildings exist on the island (refer to the Site Plan). The land-uses are apparently limited to seasonal residency and recreation. There was no observed evidence of resource extraction or other new development on the island.

3.1.5. Hydrology

The observed freshwater features include a couple of seasonal, rain-fed swamps (Photos 10 and 11), and a man-made shallow pond (Photo 12) that provides year-round drinking water. There were no freshwater streams or other drainage features observed.

Drainage off the main house is directed into a perimeter drain[17] while the deck appears to be constructed to allow some infiltration between slats.

The septic field is built to receive both the sewage and grey water discharge from the main house[18].

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[15] The Environmental Guidelines for Urban and Rural Land Development in British Columbia: Fact Sheet #11 Great blue herons (http://www.env.gov.bc.ca/wld/documents/bmp/devwithcare/Fact-Sheet-11-herons.pdf) as retrieved on 30-May-17.
[16] Ministry of Environment Fish Inventories Data Queries (http://a100.gov.bc.ca/pub/fidq/searchWatershedDictionary.do) as retrieved on 16-May-17.
[17] Personal communication with Michael Zane on 27-May-17.
[18] Personal communication with Michael Zane on 17-May-17.

3.1.6. Slope Stability

The riprap rock wall is located at the interface of the backshore and the upland terrestrial habitat. A small amount of shoreline erosion is evident adjacent to the riprap rock wall (Photo 13), and shoreline stability concerns like this are probably prompted the installation of the riprap wall in front of the main house by the owners.

The subject shoreline is best categorized as a Rocky Shore habitat type as described in the provincial Coastal Shore Stewardship document[19]:

A rocky shore typically consists of a solid rock bench across the intertidal zone, that may or may not extend up to the high tide line. Thin gravel and boulder veneer deposits are often found on these benches, but usually cover less than 10 percent of the intertidal area. This type of shore can also be a near vertical rock cliff that may extend above and below the intertidal zone. Sand, gravel and cobble sediment deposits often form small beaches near the high tide line. Rocky shores are resistant to erosion and do not provide a significant supply of unconsolidated sediment to the coast.

[19] Provincial Stewardship Series. Coastal Shore Stewardship: A Guide for Planners, Builders and Developers on Canada's Pacific Coast (http://www.llbc.leg.bc.ca/public/pubdocs/bcdocs/368207/part1.pdf) as retrieved on 16-May-17.

3.2 Photos:

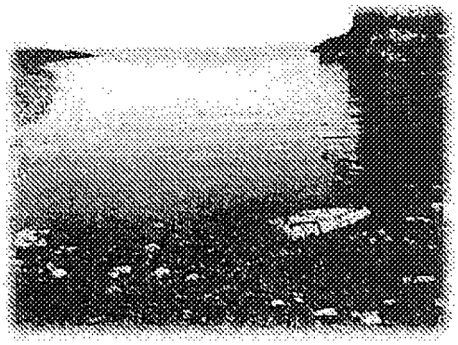


Photo 1. Narrow bay in front of subject house.

Photo 2. Sandstone shelf bedrock is on northwest side of inlet.

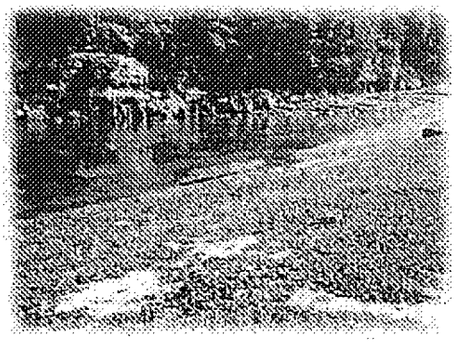


Photo 3. Sandstone bluff in background is on the southeast side of inlet.

Photo 4. Riprap rock wall built on backshore between the deck and beach.

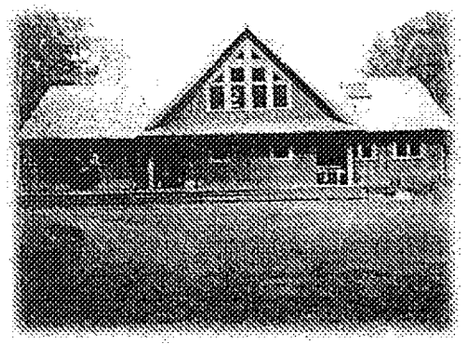


Photo 5. Backside of house showing lawn area.

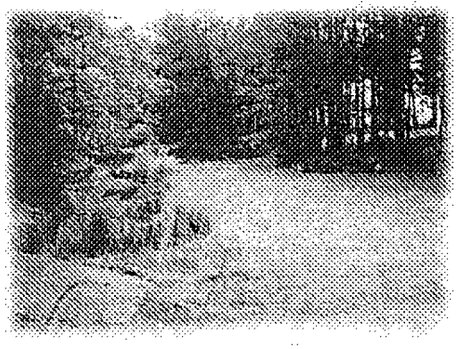


Photo 6. Landscaped area behind subject house.

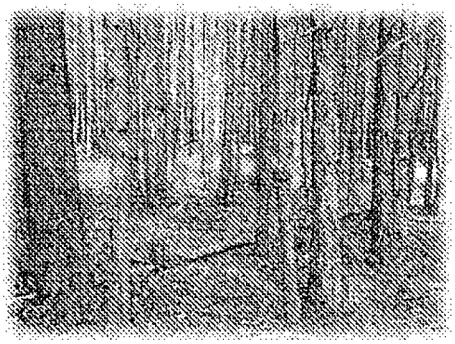


Photo 7. Dominant forest type found on Acorn Island.

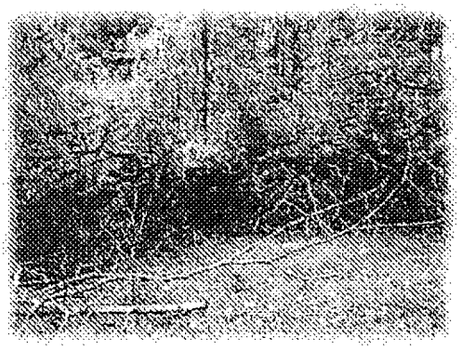


Photo 10. Seasonal wetland in thicket behind the subject house.

Photo 8. Garry oak tree found in the Douglas-fir dominant forest in the middle of Acorn Island.

Photo 11. Seasonal wetland behind the Old Cabin on south side of island.

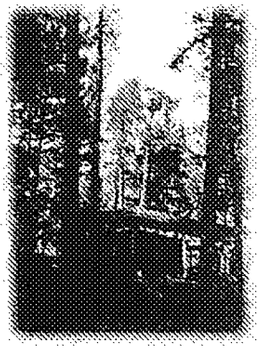


Photo 9. Bald eagles nest above Eagels Nest Cabin.

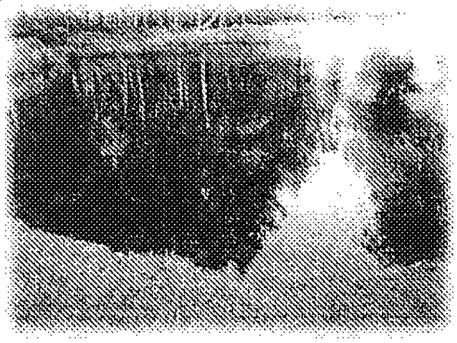


Photo 12. Year round pond located between Old Cabin and Bayview Cabin on south side of island.

Photo 13. Minor erosion is evident on the backshore adjacent to the riprap wall.

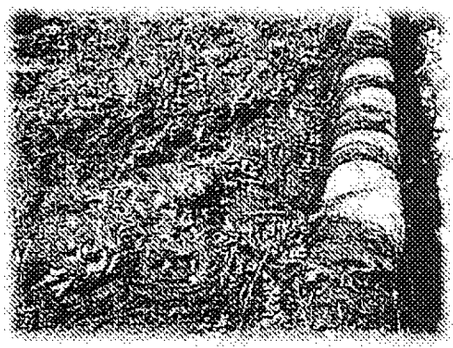


Photo 14. Invasive Japanese wireweed washed up on subject beach.

Photo 15. The subject beach is clogged with driftwood.

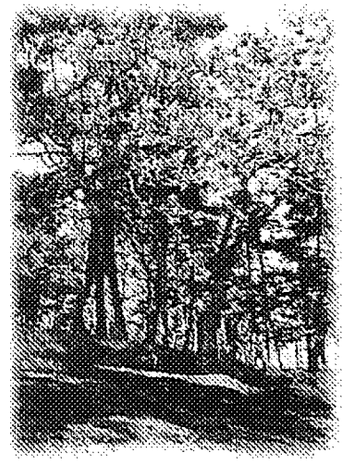


Photo 16. Garry oak tree on shore of inlet in front of subject house.

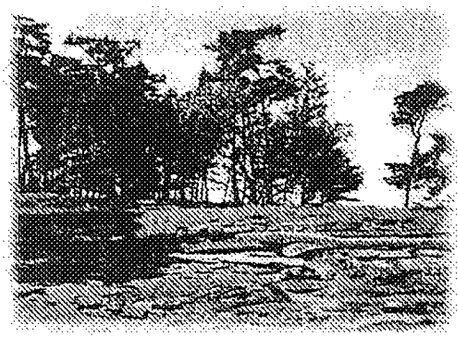


Photo 17. Single Garry oak tree on headland to northeast of subject house.

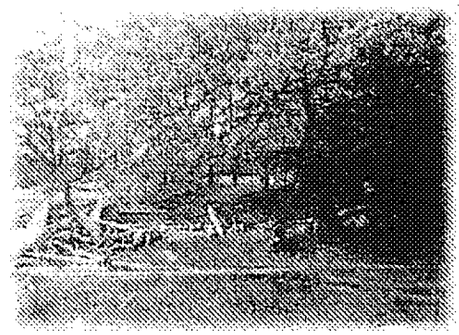


Photo 18. Garry oak tree on south shoreline of island near Old Cabin

4.0 DISCUSSION

4.1 Marine Intertidal Habitat:

As stated in the provincial Develop With Care: Environmentally Valuable Resources document[20]:

The "coastal zone" is the area where interaction of the sea and land processes occurs; where terrestrial ecosystems meet marine ecosystems and where freshwater mingles with saltwater. It is an area of high biological values used by shorebirds, otter, crab, young salmon, heron, and many, many more species. To maintain these biologically rich and productive places, the coastal zone needs: (a) natural erosion and deposition patterns for continued longshore drift, which keeps the beaches and spits intact; (b) natural vegetation along the backshore for bank stability, shelter and shade (e.g., forage fish eggs); and (c) drift logs, rocks, vegetation and other natural components washed up by the tides and deposited by streams.

The subject beach is a small pocket beach with fine sediment protected by a narrow, rocky inlet. The inlet has a northeast aspect and is probably impacted by waves from northerly winter storms. Storm surge waves occur when the wind and pressure generated by a storm act on a large body of shallow, coastal water, creating waves one-metre on average above the normal high tide.[21]. Fortunately, in this case, the coastline is extremely deep off the prevailing wind sides of Acorn Island (i.e., north and east), and the inlet is narrow which acts to diffuse much of the oncoming wave energy. As such, shoreline erosion is less of an issue than if the house fronted on an open beach.

The shoreline bio-inventory revealed that the invasive brown seaweed Japanese wireweed (*Sargassum muticum*) inhabits the inlet. Japanese Wireweed (Photo 14) is a large, fast growing brown seaweed that forms dense monocultures. It

[20] Provincial Develop With Care: Environmentally Valuable Resources document (http://www.env.gov.bc.ca/wld/documents/bmp/devwithcare/DWC-Section-4.pdf) as retrieved on 31-May-17.

[21] Provincial Stewardship Series. Coastal Shore Stewardship: A Guide for Planners, Builders and Developers (http://www.llbc.leg.bc.ca/public/pubdocs/bcdocs/368207/part1.pdf) as retrieved on 31-May-17.

impedes boat traffic and swimmers, and reproduces via floating fragments and can be spread easily[22]. Otherwise, no marine SAR or other invasive species were observed.

The fine sediment types (sand/gravel/shell) in the pocket bay adjacent to the subject development are favourable for forage fish spawning, but the site is very isolated and clogged with driftwood (CWD) which impedes access by these fish (Photo 15). The lack of accessibility and small habitat area make it very unlikely that this site serves as valuable forage fish spawning habitat.

4.2 Upland Habitat:

The SEI Woodland Ecosystem designation for Acorn Island can be refined to the Douglas-fir/Shore pine/Arbutus (CDFmm/02) plant community[23] based on estimates of the tree canopy coverage (%) and species assemblage. It is important to note that this forest type can include Garry oaks as a sub-dominant species as found on the subject property (see Photos 8 and 16-18).

The CDFmm/02 plant communities are typically:

i. The driest of the forested communities in the CDFmm subzone.
ii. Small patch communities (5-50 ha) with a tree layer dominated by Douglas-fir and Arbutus.
iii. With a canopy cover ranging from 40 to 90%.
iv. With a minor component of Shore pine and/or Garry oak present.
v. With a shrub layer including Oceanspray, Dull oregon-grape, Common snowberry, tall Oregon-grape, baldhip rose, and Saskatoon berry.
vi. With a herb layer including a number of graminoids (e.g., Western fescue, Alaska oniongrass, Blue wildrye, California brome, Long-stoloned sedge, and Many-flowered wood-rush), as well as Pacific sanicle, Big-leaved

[22] Invasive Species Council of British Columbia, Aquatic Invasive Plants (http://bcinvasives.ca/documents/Aquatic_Invasive_Plants_-_Plant_Notes.pdf) as retrieved on 31-May-17.
[23] BC's Coast Region: Species & Ecosystems of Conservation, Plant Community: Douglas-fir/Arbutus (http://ibis.geog.ubc.ca/biodiversity/factsheets/pdf/plant%20communities/douglasfir_arbutus_cdfmm02.pdf) as retrieved on 29-May-17.

sandwort, Purple peavine, White fawn lily, Trailing blackberry, and bracken fern.

vii. The moss layer is variable within the plant community (1-40% cover) and is most prevalent on outcrop bedrock areas where trees and shrubs are unable to establish. The moss layer features Electrified cat's-tail moss, Oregon beaked-moss, Step moss and various Clad lichens.

As previously mentioned, two seasonal wetlands were also observed on Acorn Island. These freshwater habitats require further investigation to determine if rare or sensitive plants are present. One of these wetlands is situated within 100-m of the subject house (refer to the Site Survey Plan).

It is noteworthy that there were no invasive, non-native plants observed other than the occasional English holly bush on the island (although further investigation may reveal other invasive species present).

4.3 Garry Oak Ecosystems:

As stated in the Sensitive Ecosystem Inventory (East Vancouver Island and Gulf Island 1993-1997) document[24]:

Historically, frequent lightning-induced wildfires, aboriginal burning, and elk and deer grazing prevented coniferous forests from crowding out the oak woodlands. Fires thinned out competing coniferous species, recycled nutrients into the soil, released and scarified seeds, and maintained the open woodland canopy for sunlight to enter. All of these processes are critical to maintaining woodland health and the natural cycles in the ecosystem.

On Acorn Island, it is likely that the forest has become conifer dominated through a lack of these processes at work in recent history. The observed Douglas-fir/Shore pine/Arbutus (CDFmm/02) plant community does not exclude Garry oak trees and is an ecosystem that is associated with Garry Oak Ecosystems (i.e., it may contain some of the rare SAR associated with them).

[24] SEI East Vancouver Island and Gulf Islands 1993-1997: Volume 1: Methodology, Ecological Descriptions, and Results (http://a100.gov.bc.ca/appsdata/acat/documents/r2124/SEI_4206_rpt1_1111625239116_8be42252200c4f0283b18cac66eed366.pdf) as retrieved on 31-May-17.

4.4 Species-at-Risk:

There is a possibility that rare SAR exist on Acorn Island. The Bald eagles nests and the occasional Garry oak tree were the only observed sign of SAR present in this preliminary field survey. Both the forest understory and the wetland habitats require a more detailed field investigation to determine SAR presence or absence.

5.0 CONCLUSIONS

This assessment has revealed several important ecological aspects of Acorn Island. The time available for the field investigation was limited and therefore does not meet the scope requirements of a complete bio-inventory. It has, however, pointed at habitat conditions that do not support the presence of a Garry Oak Ecosystem, but rather an undisturbed coniferous forest. The absence of fire on Acorn Island has probably allowed the Douglas-fir/Shore pine/Arbutus (CDFmm/02) plant community to become the dominant forest type while Garry oak trees remain scarce.

The target species for this preliminary site survey included any plants or animals that are known to have SAR status or unusual in this bioregion. Garry oak trees and Bald eagles nests were encountered (both species are provincially yellow-listed), and require stewardship on Acorn Island. Although other SAR were not encountered in this field investigation, they may be present. A more detailed field investigation is required to confirm the presence or absence of SAR on this property.

Two seasonal wetlands were identified by an abundance of *Carex* spp. growth and visible standing surface water. These habitats, along with the man-made pond, may reveal rare species assemblages upon further investigation. No freshwater drainage or other feature was observed that would be favourable habitat for anadromous salmonids.

The marine foreshore habitat (including the intertidal beach area) in front of the subject house may be negatively impacted by the riprap rock wall installation. Hard, vertical structures such as this remove riparian vegetation from the backshore environment, eliminate natural habitat complexity along the shoreline, and simplify intertidal habitats. Without baseline information about the former condition of these habitats prior to the shoreline hardening, it is difficult to measure the extent of the impacts.

6.0 RECOMMENDATIONS

6.1 Habitat Restoration

The voluntary efforts of landowners and citizens are essential to the conservation and enhancement of sensitive and other important ecosystems such as marine shorelines. Restoration of the riparian backshore habitat on a site where shoreline hardening has occurred requires specific localized actions:

i. Install natural vegetation along the backshore for bank stability, shelter and shade;
ii. Use a 'soft' option such as a soil bio-engineering solution to address further shoreline erosion;
iii. Avoid constructing retaining walls—they often transfer wave energy to neighbouring shorelines and restrict wildlife access to the waterfront;
iv. Avoid clearing the backshore of native vegetation—it can encourage the establishment of nuisance or non-native species, which can grow quickly and eliminate native species;
v. Remove non-native, invasive plant species in backshore and riparian habitats (including landscaped areas) and allow (or plant) natural, native plants to grow there.

6.2 Habitat Enhancement

If the Islands Trust determines that the subject riprap wall has had a net negative impact on the shoreline at the house site and requires compensation on Acorn Island, habitat enhancements involving the maintenance or creation of the following could be employed:

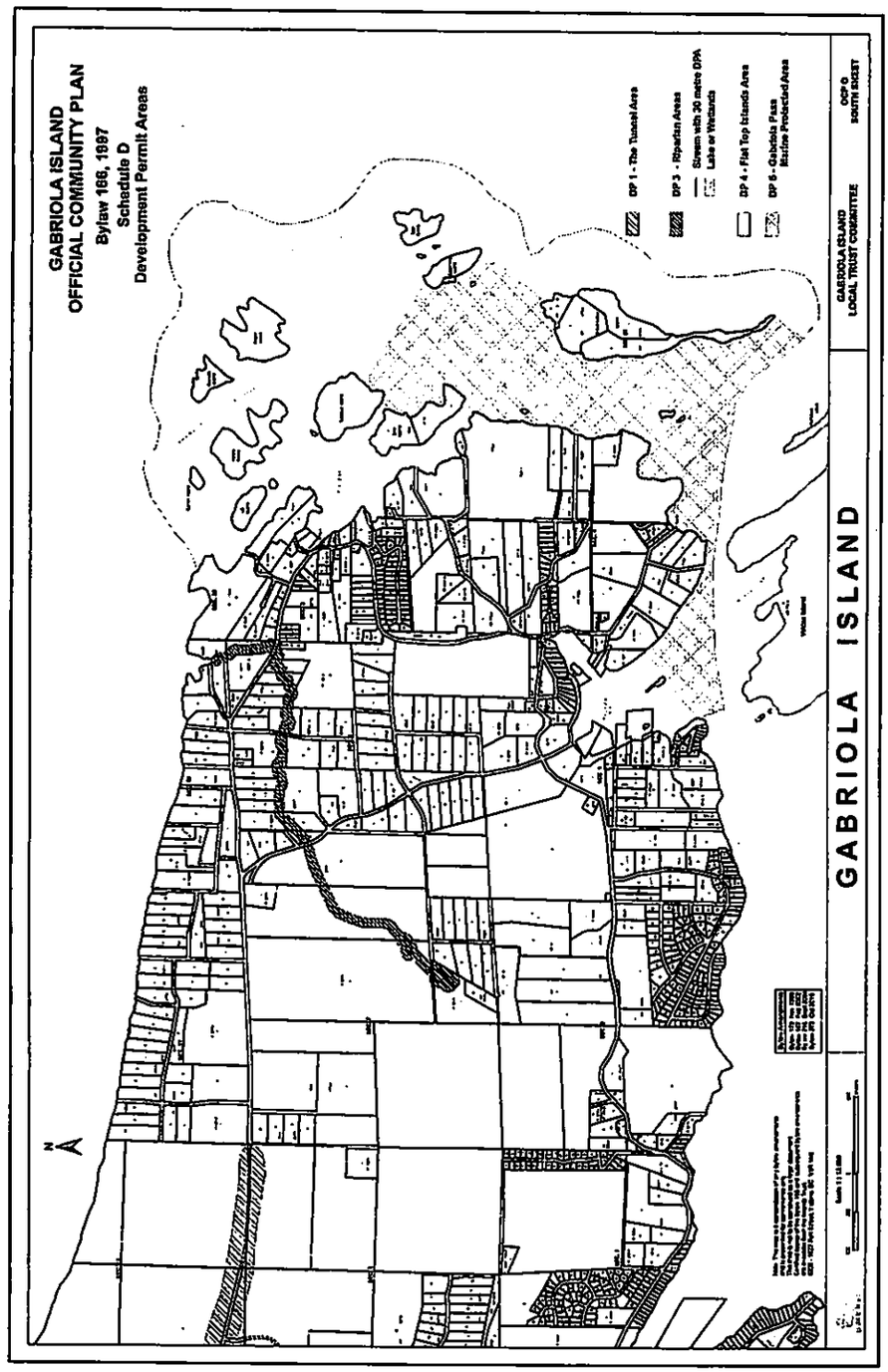
- Low gradient, natural shorelines;
- Riparian areas free of migratory barriers such as walls or other structures;
- Intact riparian forests free from invasive species that provide shade to the shoreline.

Private landowners are encouraged by local governments and conservation organizations to become active stewards of rare or threatened species and/or

ecosystems if they possibly inhabit their lands[25]:

> *Federal policy for identification and protection of critical habitat emphasizes "cooperation and stewardship first" – recognizing that while "SARA contains strong mechanisms and powers for the federal government to directly and unilaterally regulate the protection of residence and critical habitat in Canada, cooperative, voluntary measures must be viewed as the first option to securing the protection required for these crucial elements to species recovery." This approach is reiterated in the 2005 Canada-British Columbia Agreement on Species at Risk which affirms as principles that: "stewardship by land and water owners and users is fundamental to preventing species from becoming at risk and in protecting and recovering species that are at risk"; "cooperative, voluntary measures are the first approach to securing the protection and recovery of species at risk"; and "Canada and British Columbia are committed to carrying out consultations with those who may be directly affected by protection and recovery of species at risk."*

[25] GOERT Questions and Answers: Legislation and Policy for the Protection of Garry Oak Ecosystems (http://www.goert.ca/documents/QandA_Legislation_and_Policy.pdf) as retrieved on 16-May-17.



APPENDIX A: Gabriola Island DP 4 for the Flat Top Islands

APPENDIX B: SEI Atlas Mapsheet 92G012

SCHEDULE "B"

GABRIOLA ISLAND LOCAL TRUST COMMITTEE
DEVELOPMENT PERMIT GB-DP-2017.2 (WESTON)

Schedule "C" – Baynes Sound Environmental, Supplemental Letter

Baynes Sound Environmental
PO Box 1017
Cumberland, B.C.
V0R 1S0

June 26th, 2017

Attn: Local Trust Committee, Gabriola Island, Islands Trust

RE: Recommended Mitigation and Compensation Measures for the Riprap Wall and House Installed in the Backshore on Acorn Island

1. Introduction:

This is letter is an addendum to the Acorn Island Biophysical Survey Report (submitted May, 2017) to provide detailed recommendations for mitigation and compensation of the backshore habitat impacted by the installation of a riprap rock wall and house on this property. Specifically, the estimated impacts to riparian vegetation, shoreline stability, and rare or threatened species habitats on Acorn Island are addressed.

The field survey for this assessment was conducted in the post-construction phase which means that the baseline habitat conditions are not known for the site. It is important to mention that the original habitat conditions are estimates from observations of adjacent shoreline and riparian habitat areas near the site. It's also important to keep in mind that an older house existed in the same location before this development occurred.

For an overview of the site and the subject development, refer to Section 1.0 of the survey report.

2. Methods:

Refer to the Acorn Island Biophysical Survey Report (May, 2017), Section 2.0 for a summary of the methods used for this habitat assessment.

3. Results:

Refer to the Acorn Island Biophysical Survey Report, Section 3.0 for a summary of the results found by this habitat assessment.

4. Discussion

As stated in the biophysical report for this property, the forest type on Acorn Island resembles a Coastal Douglas-fir Moist Maritime (CDFmm/02) sub-variant Douglas-fir/Arbutus plant community.

Garry oak trees are widely dispersed on the island along with other confirmed sensitive habitat features including: two seasonal wetlands, a year-round pond, Bald eagle nest(s), and pocket beaches along the marine shoreline that appear suitable for forage fish spawning.

For the purposes of this study, these features have been grouped into the following three categories based habitat type and ecosystem function.

4.1 Riparian Vegetation

4.1.1. Ecosystem Function and Estimated Impacts

Riparian vegetation is important for the proper functioning condition of all aquatic habitats. It serves to provide shade, water retention, erosion control and wildlife habitat.

In the case of the subject house and riprap wall, most of the riparian vegetation has been removed along the marine shoreline and requires remediation. The riparain areas around the two seasonal wetlands and the year-round freshwater pond on the island appears intact and well-functioning.

4.1.1.1 Marine Shoreline

The riparian zone extends approximately 15 m from the high-high-tide line in a marine environment. This zone is where shoreline stability is formed (or lost), and where a unique assemblage of riparian plants with salinity tolerance become established.

Adjacent to the subject site, the undisturbed marine riparian zone is composed of a mix of Douglas-fir (*Pseudotsuga menziesii*), Arbutus (*Arbutus menziesii*), Shore pine (*Pinus contorta* var. *contorta*), Garry oak (*Quercus garryana*), and Bigleaf maple (*Acer macrophyllum*). Shrubs include Salal (*Gaultheria shallon*), Common snowberry (*Symphoricarpos albus*), and Oceanspray (*Holodiscus discolor*).

The riprap rock wall and house have eliminated most of the riparian vegetation within the footprint of this development, while replacing some of this area with non-native plant species.

4.2 Marine Shoreline Stability

4.2.1. Ecosystem Function and Estimated Impacts

The shoreline of Acorn Island is characterized by a series of sandstone shelves, low elevation rocky bluffs, and pocket bays with cobble/gravel/shell sediment accumulations. The subject house and riprap wall are located adjacent to a small pocket bay at the head of a narrow inlet that is naturally confined by sandstone bedrock and bluff.

In general, localized shoreline stability is enhanced by hard shoreline structures (such as bedrock) and well-rooted riparian vegetation (see Section 4.1 above). These features function to prevent sediments from eroding from the immediate shoreline (as a result of tidal action or storm surge events), but often transfer wave energy to adjacent shorelines causing erosion nearby.

Shoreline sediment accumulations that result from shoreline erosion can negatively impact intertidal habitat areas by infilling interstitial spaces important for invertebrates (and other species), and/or changing the beach sediment composition completely.

There is a small amount of shoreline erosion evident adjacent to the subject riprap rock wall that appears to be adding a small volume of fine sediment and organic matter to the adjacent pocket beach.

The subject riprap rock wall is located along a soft sediment (i.e., non-bedrock) interface along the backshore and the upland terrestrial habitat, but does not span the entire length of the fine sediment shoreline of this inlet. Although the wall is likely preventing an increase in shoreline erosion by protecting the softer ground at the head of the inlet, it is also likely transferring wave energy outward to the shoreline segments not protected by bedrock (as evidenced by erosion mentioned above).

Shoreline stability concerns like the erosion described above are what prompted the landowners to install the riprap wall in front of their new house, as well as concern for beach wood accumulation under the new deck. It's important to note that similar shoreline protections are in place naturally at this site by way of the sandstone bedrock lining most of the inlet.

4.3 Rare or Threatened Species

4.3.1 Ecosystem Function and Estimated Impacts

Maintaining biodiversity and unique habitats for rare or threatened species on private property like this is important for maintaining functional ecosystem(s) across wider landscapes. It is important to remember that a lack of observation of a rare or threatened species in an area does not confirm its absence unless the field investigation has targetted a particular species.

Garry Oak trees were observed on the subject property but do not represent a Garry Oak Ecosystem in this location. Bald Eagle presence on Acorn Island was also evident by the confirmed nest within 100-m of the subject house (refer to Section 2.2.3 of the biophysical report for more detail).

5. Conclusions:

For the shoreline and riparian area impacted by the construction of the subject house and riprap wall, the following measures are recommendations to mitigate and compensate for

estimated habitat losses, and should be written into a conservation covenant(s) or other protection measures by the Islands Trust for this property.

5.1 Riparian Vegetation Loss:

In the case of the subject development, most of the native riparian vegetation was removed along the marine shoreline and this habitat loss requires localized remediation.

The riparian zone extends from the high tide line to 15-m inland and requires a natural density of native trees and shrubs to provide required shade, erosion control and wildlife habitat along the shoreline.

A variety of seedling trees and shrubs should be transplanted into the riparian zone around riprap wall and house (see Section 4.1.1.1. of this report for a list of suggested species). The owners should hire a professional Landscaper with expertise in Native Plant Landscaping to produce a plan designed to restore or compensate for losses in shoreline vegetation function around the development site.

5.1.1. Garry Oak Trees:

It is unclear whether any Garry oak trees were removed during the subject development, but for future construction it is recommended that a Protected Root Zone is established for each individual Garry oak tree nearby by installing a circle of protective fencing around the dripline of each tree[1]. Lateral roots of Garry Oak trees can extend beyond the dripline by as much as twice the crown radius, so it is important to protect as large an area as possible around the tree with fencing prior to the start of construction.

5.1.2. Bald Eagle's Nest Trees:

The provincial Best Management Practices (BMPs) for development activity near established Bald eagle (*Haliaeetus* leucocephalus) nests[2] in rural areas recommends a

[1] The Best Management Practices for Garry Oak and Associated Ecosystems (http://www.goert.ca/documents/GOERT BMPs.pdf) as retrieved on 16 May 17.
[2] The Environmental Guidelines for Urban and Rural Land Development in British Columbia: Fact Sheet #10 Bald Eagles and Ospreys (http://www.wildlifetree.ca/docs/Fact Sheet 10 eagles osprey.pdf) as retrieved on 30 May 17.

minimum of a 100-m buffer distance from nest tree to proposed construction and these setbacks must be established prior to approval of any proposed future development.

5.2 Marine Shoreline Erosion

5.2.1. Shoreline Stability

There is little evidence that the subject shoreline has been de-stabilized as a result of the installation of the riprap wall aside from a little erosion adjacent to the wall on one end. The gaps between the wall ends and the beginning of the sandstone bedrock that constrains the shoreline on either side of the wall could be protected with a soft-engineered approach such as a log-crib structure if the erosion becomes more pronounced. A baseline erosion and sediment control study should be established in the present and monitored in the future to determine if the riprap wall is having long-term, cumulative negative impact on the surrounding shoreline.

If it is found that there is a net-negative impact, then the owner will need to hire a bioengineering specialist with experience in shoreline stabilization for specific design and installation requirements for this site.

5.2.2. Forage Fish Spawning Habitat:

The loss of fine sediment recruitment from the shoreline by the wall for forage fish spawning habitat is not a large concern given the small area of this pocket beach and the high volume of beach log accumulation in the high intertidal area which likely acts to prevent spawning. It is important to mention that forage fish spawning activity has not been confirmed on Acorn Island and that compensatory measures will not be recommended unless spawning is confirmed.

5.3 Impacts to Species-at-Risk Habitat

No Species-at-Risk (SAR) habitat aside from Garry Oak trees and Bald Eagles nests were identified in this preliminary biophysical assessment. A more detailed field investigation may reveal SAR on Acorn Island although it will not be possible to confirm whether or not SAR were directly impacted by the subject development. As such, it is recommended that the following sensitive habitats be protected in the future by the following buffers (with

conservation covenant(s) or other protection measures developed by the Islands Trust on this property):

- The two seasonal wetlands should receive a 15-m riparian buffer setback.
- The year-round freshwater pond should receive a 15-m riparian buffer setback.
- All marine shorelines should receive a 15-m riparian buffer setback.

The setback areas for all three habitat types should restrict future development and motorized vehicle access, and be designed to provide maximum protection for sensitive SAR possibly residing in these areas.

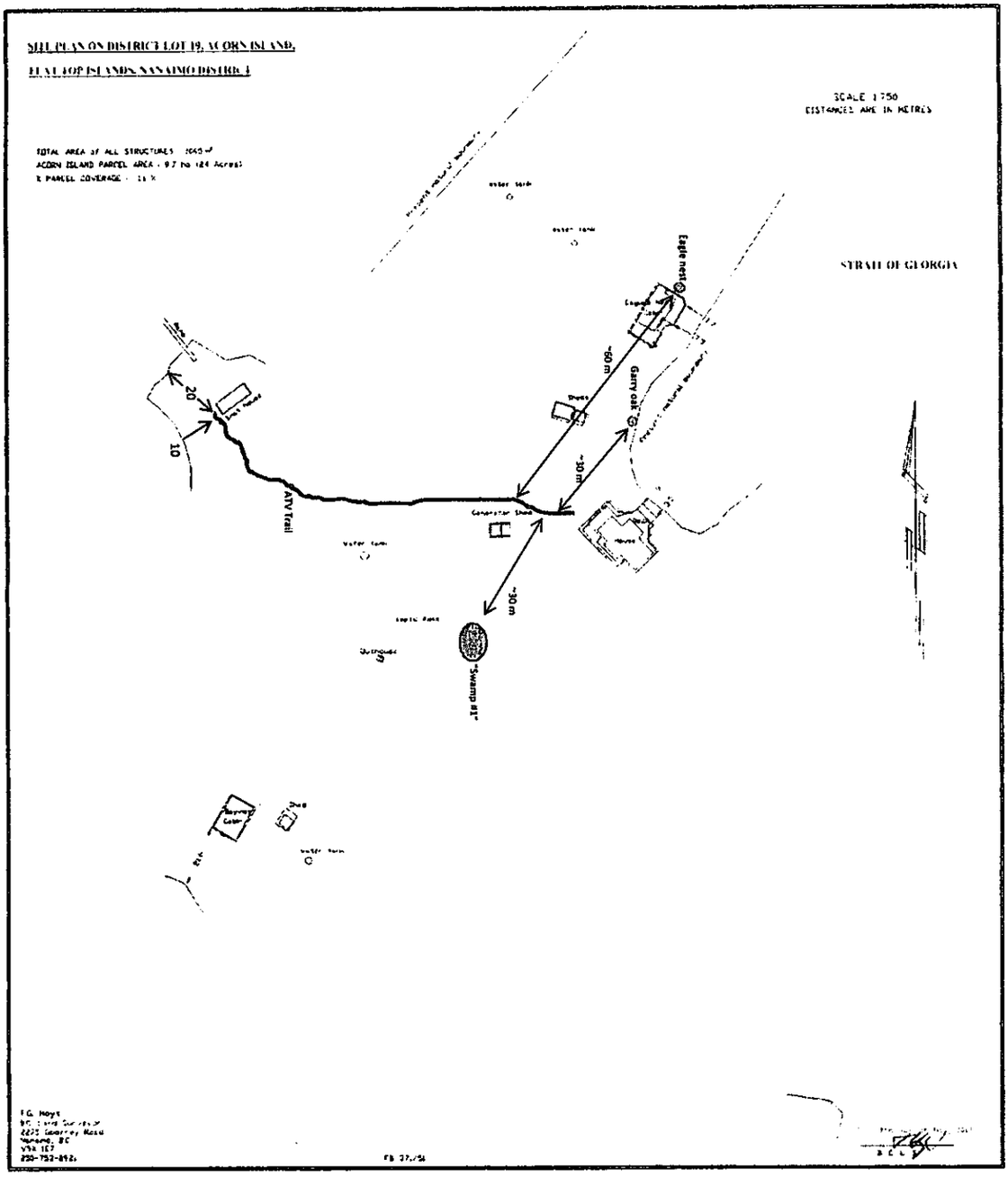
Please do not hesitate to contact me if you have any questions.

Sincerely,

Kayt Chambers, R.P.Bio.
kayt.chambers@gmail.com
(250) 650-5143

SCHEDULE C

ATV/UTV ACCESS ROUTE



Budget Funding Request
Short-Form Business Case

Completion of this form initiates a request to the management team for allocation of budget funds. The form is to be completed and submitted at the start of the decision making process. The business case forms part of the Annual Budget Process (refer to Islands Trust Council Budget Process Policy 6.3.i).

TO BE COMPLETED BY INITIATOR

Initiated by:
Heather Kauer
On behalf for the GB LTC

Business Area:
Gabriola Island Local Trust Committee – LTC projects

Name of Request:

GB LTC – Gabriola OCP and LUB Targeted Review Project

2023-2024 - $60,000.00

Budget Source (select all that apply):

■ **Specific Project Funding** (select all that apply)
- ■ Third Party Contractors
- ☐ Staff Travel Expense
- ☐ Staff Overtime Expense
- ☐ New Staff Member – Temporary for project
- ☐ Computer Hardware/Software

☐ **Furniture & Equipment**

☐ **Computer Hardware/Software/Supplies**

☐ **New Staff Resources** (see Staff Costing Tool)
- ☐ **Permanent**
- ☐ **Temporary**

Temp Duration: _____

■ **Other – please describe:** Consultants, Honoraria for First Nations for on-going meetings and participation, technology, mapping, facility rental, engagement meetings and materials, printing, posting and distribution of communication materials.

Date of Funding Request: September 29, 2022

GB LTC Resolution: September 29, 2022:

Funding Required for (date range):
April 2023 – March 31, 2024

ISSUE/OPPORTUNITY:

The Gabriola Island OCP and LUB Comprehensive Review is a top priority project aimed at modernizing and updating the documents. This review process and resulting amendments to the OCP and LUB would address issues and provide opportunities as follows:

- Strengthen relations with First Nations, honouring the Islands Trust Reconciliation Action Plan 2019-2022 by undertaking early and meaningfully engagement with Snuneymuxw First Nation, and others, working to align land use planning policies and regulations with First Nations interests and First Nations-led planning and policy initiatives.
- Update Gabriola Island's OCP and LUB, which have not been substantially updated since 1997 and 1999 respectively, and to be reflective of reconciliation and First Nations engagement, including acknowledgement of First Nations treaty and territorial rights and title, including place, context and inherent rights.
- Aligns and advances the Islands Trust Strategic Plan Objective "to preserve and protect marine ecosystems" and Strategy to "undertake a review of Local Trust Committee-Bowen Islands Municipality foreshore policies and regulatory bylaws and develop model policy and regulatory bylaws for the protection of the foreshore and nearshore," by specifically reviewing and strengthening Gabriola shoreline protection policies and regulation.
- Aligns and advances the Islands Trust Strategic Plan Objective "Preserve, protect and advocate for forest and terrestrial ecosystems", by reviewing and strengthening Gabriola forest protection policies and regulations as guided by the Islands Trust Toolkit for the Protection of the Coastal Douglas-fir Zone and Associated Ecosystems.

The completion of a project of this scale will rely on a successful public engagement process which requires support from a skilled engagement professional with expertise in indigenous and non-indigenous engagement and land use planning policy and regulation review. The completion of this project will also rely on mapping and geospatial data, along with ecological and indigenous expertise to assist with analysis.

Background:

The first phase of this project will take place in fiscal 2023-2024 and be dedicated to engagement activities for the OCP-LUB comprehensive review. Drafting and processing bylaws is anticipated to take place in 2024-25.

The LTC is seeking the funds to support the first phase with this business case.

PROJECTED RESULTS/DELIVERABLES:

Funding Request for Phase 1: Coordination with First Nations to develop project scope and preliminary public engagement (2023-24)		
Consultant Contract	Spring 2023	$40,000
First Nation early and meaningful engagement / project scoping	Summer/Fall 2023	$10,000
Public Engagement	Fall / Winter / Spring 2023-24	$10,000
Funding Request for Phase 1: Legislative Process and Implementation (2023-2024)		
1st reading, further engagement, referrals to First Nations and agencies	Spring 2024	$3,000.00
Legal Review	Summer 2024	$5,000.00
Consideration of changes and 2nd reading	Summer 2024	

Community Information Meeting and Public Hearing	Summer/Fall 2024	$3,000.00
3rd reading	Fall 2024	
Forward to Executive Committee and Ministry of Municipal Affairs	Fall 2024	
Final Adoption	Winter 2024/25	
Bylaw amendment communications		$2,000.00

RISK ASSESSMENT:

- Factors potentially affecting the timing of project deliverables:
  - Regional Planning Team capacity to manage the project in 2023/2024 and 2024/2025 along with other competing LTC projects that are yet to be approved for that timeframe;
  - Capacity and available expertise to support mapping and data needs within the budget;
  - Other staffs' capacity to provide support to the project in 2023/2024 and 2024/2025;
  - First Nation capacity and interest to engage may not align with project timelines;

ALTERNATIVES CONSIDERED:

Option 1: Increase/no level of involvement of engagement consultant

Increased involvement

- More robust consultation with multiple events, all undertaken by consultant; increased possibility of building trust with indigenous and non-indigenous communities;
- Bylaws drafted by consultant and/or by staff;
- Over $60,000.00 overall budget, which may require use of Surplus or special property tax requisition
- Timeline of 2-3 years, likely less than current proposal; would continue into next political term.

No involvement

- Minimal consultation undertaken by staff, hampering possibility of building trust with indigenous and non-indigenous communities;
- Bylaws drafted by staff;
- Under $40,000 overall budget;
- Extend timeline to 2.5 – 4 years or longer;

Option 2: Limit review to select topic areas in a targeted review

- Risk that OCP continues to not reflect current and future community needs;
- Possible timeline would continue to into next political term;
- Would likely result in decrease in overall budget, but not significantly.

CRITICAL SUCCESS FACTORS:

- See Risk Assessment above for critical success factors and risks involved.

RECOMMENDED OPTION:
The present funding request is for $60,000.00 for fiscal 2023/24 to allow the Gabriola Island OCP-LUB project to progress to begin Phase 1.

COST/BENEFIT ANALYSIS:

Quantitative Analysis:
$60,000.00 for fiscal 2023/2024 for Phase 1
Assumes a consultant-led comprehensive review of the Gabriola OCP and LUB

Qualitative Analysis:
If no action is taken, Gabriola Island forests, shorelines and indigenous heritage are at risk of continued degradation from future rural development and housing affordability will continue to be an issue.

PURCHASING PROCEDURE:

- RFP for consultant

PROPOSED IMPLEMENTATION STRATEGY:

- See Projected Results/Deliverables above.

Initiator Name and Title _____ Date _____

Reviewed by: Name and Title _____ Date _____

REVIEWED BY MANAGEMENT TEAM:	
Date received:	**Approved:** ☐ **YES** ☐ **NO**

Next steps:

- If approved by management:
  - the business case will be forwarded to FPC for review in October of each year.
  - the funding for the request will be included in Draft 1, Version 1 of the budget which is reviewed by FPC in October of each year, and the business case forwarded to FPC.
- If not approved by management:
  - the business case wil be forwarded to FPC for information in October of each year, but not included in the budget draft.

From: [redacted]
Sent: Sunday, October 30, 2022 12:47 PM
To: northinfo <northinfo@islandstrust.bc.ca>; Kees Langereis <klangereis@islandstrust.bc.ca>; Scott Colbourne <scolbourne@islandstrust.bc.ca>; Dan Rogers <drogers@islandstrust.bc.ca>
Cc: 'Tobi Elliott' [redacted]
Subject: RE: Regarding Draft Standing Resolution on Enforcement of Non-Compliant Dwellings

Good afternoon all.
While I have not seen the draft minutes of last week's meeting, I understand that the resolution passed, in a form that helps address the concerns raised below. I am very happy to hear that.

However, I continue to consider that much greater specificity is required as to how the exceptions may be applied, to ensure no one is unfairly or arbitrarily rendered homeless as a result of the exceptions being very broad in their expression. As you may know, I have an extensive background in legislative drafting. It is a basic principle of such drafting that any provision restricting an activity or penalizing individuals for an activity must be clear, objective and comprehensive, so as to minimize the risk both of legal challenge and unfair or inappropriate treatment of citizens.

I therefore encourage the LTC as part of next steps on this important matter to prioritize the development, in consultation with the public, of a policy and procedures for the implementation of the exceptions in practice.

Sincerely,
Katherine Gordon

Katherine Gordon LLB (Hons)
Consultant: Negotiations, Facilitation, Engagement and Strategy, Canada and New Zealand
Crown Chief Negotiator, Treaty of Waitangi Negotiations
Board member, Copyright Licensing New Zealand
Affiliate Member, Governance NZ
[redacted]

From: Tobi Elliott [redacted]
Sent: Monday, October 31, 2022 8:55 AM
To: [redacted]
Cc: northinfo <northinfo@islandstrust.bc.ca>; Kees Langereis <klangereis@islandstrust.bc.ca>; Scott Colbourne <scolbourne@islandstrust.bc.ca>; Dan Rogers <drogers@islandstrust.bc.ca>; [redacted]
Subject: Re: Regarding Draft Standing Resolution on Enforcement of Non-Compliant Dwellings

Hi Katherine,

Thank you for the note and encouragement to develop clear, fair and objective policies around these kind of exceptions.

I am glad that Trustees took into account the 2 rounds of consultation with the public, through the HAPC and APC, letters from the public, and feedback from bylaw officer Manager Dingman in order to draft a much stronger standing resolution than the one that came out of Salt Spring. I hope we can continue refining it to ensure there is no risk of a legal challenge, or unfair treatment of citizens.

I believe the wording of the final standing resolution that did pass included a recommendation to the next Trustees to do just that: d) Recommend that the next LTC conduct a community consultation regarding this standing resolution. Though they can't direct or constrain incoming Trustees to do any work, the recommendation is there to take up if the Trustee-elects choose to pursue this course of action. Given the fairly large amount of work before us, I wonder if can be rolled into the broader community processes of consultation we would be undertaking with a comprehensive OCP review?

As Trustee Colbourne said on Thursday (something to the this effect): we don't want to keep working on the band-aid for the problem, we need to do the work to fix the systemic issues, which are the lack of safe, secure and affordable housing options in our communities.

Welcome your thoughts and input as always, Katherine!

Tobi

Tobi Elliott
Candidate for Islands Trust Local Trustee
[redacted]

I am an uninvited guest thankful to live, work and be a treaty partner in the treaty lands and territories of the Snuneymuxw, Snaw-naw-as, Stz'uminus, Halal, Lyackson, Cowichan, Penelakut, and Lake Cowichan First Nations.

From: Timothy Maika
Sent: Thursday, November 10, 2022 12:22 PM
To: northinfo
Subject: Alternatives to Fire Dept. Collecting and Burning Yard waste in MOTI Gravel Pit.

Please forward to newly elected Islands Trust Trustees once their email addresses are approved. Thank you.

This letter is addressed to the Gabriola Fire Department as well as the Gabriola Islands Trust Committee and Regional District of Nanaimo Representative for Gabriola.

I was disappointed to see that the Gabriola Fire Department is once again collecting and presumably will be burning what is a very large pile of yard waste at the gravel pit near the South end fire hall.

I would like to suggest that there are many safer/healthier options available, or that could be explored, that would allow property owners to dispose of their woody debris in a more responsible manner and not result in polluting our air, releasing large amounts of toxic particles and carbon dioxide into the atmosphere and wasting all that energy that is released in burning.

Here are just a couple of alternatives to open burning:

1. Have landowners take responsibility for their yard waste and either chip or compost it on site, or take it to a composting or solid waste facility in Nanaimo. This is not a huge financial burden and there are a number of local firms that are equipped to pick up and transport yard and construction waste.
   In my business as a residential builder, I include responsible disposal of any construction waste as a small cost to any project. The facilities in Nanaimo are equipped to handle waste on a large scale while mitigating any negative impact on the environment, all the while producing a valuable resource from the organic material in the form of compost or as hog fuel for industry.
2. Organise a collection site where the landowners pay a fee to offset transportation costs and have local dump truck owners haul the material to collection facilities in Nanaimo. Most dump trucks are running empty to town and this service could offset their transportation costs.
   Note: I am not in favour of establishing a large composting facility on Gabriola as it is very difficult to find a location for such noisy and potentially smelly industrial activity that will not impact a residential area on our small Island. We are accustomed as a community to having a strong transportation connection to greater Vancouver Island and are fortunate that we can take advantage of the composting and waste facilities there for a relatively small cost.

As we all know, open burning pollutes the air and negatively impacts the health of residents, pets and wildlife. I believe that open burning is no longer an acceptable way to dispose of unwanted organic material, and we should take advantage of and support the cleaner, more environmentally responsible options that are available in our region.

Regards,

Timothy Maika

November 25, 2022

Gabriola Island Local Trust Committee

700 North Road

Gabriola, BC V0R 1X3

(sent by email as an attachment, and by Registered Mail)

Attn: Tobi Elliot, Susan Yates

I am Bruce Thomson, property owner on Gabriola since 1977, at present living at 1717 South Road. I've been living there with my partner since 1990. In 1994 he built the current dwelling (named Madrona Cottage) using locally-sourced materials. In addition, since May of 1998, I am a proud participant of "Naturescape BC" under the Habitat Conservation Trust Fund.

Our residence is situated adjacent to "tle ltxw" (pronounced klay al tooxw – thank you Dave Bodaly), which was/is a "special, wealthy, or rich place" and a significant historical site for his people.

It is also my understanding of what he has told me of his people's beliefs – that my own are much like theirs: to live in harmony with the natural elements, and maintain them reasonably for future generations. (The first "greeners", I believe, and certainly how I feel and want to live my life).

When the "others" came into this area it was developed into the "Jenkins Farm", and in the 1960s a further attempt to develop as the "Jenkins Farm Subdivision" (proposed 550 lots!), which was denied by the provincial government at the time.

In the 1990s we vowed to "put the nature back" on this lot, and reduce our footprint here, with a nod to indigenous forebears. Recently we have achieved 89% foliage/tree cover, and only 11% structures.

You would think this would have had the support and blessings of the Gabriola LTC over the years. But this has not been so. The Gabriola LTC have been acting contrary to our aims, and actually acting as the developers here!

In 1999, despite opposition, the "Home Occupation" bylaw was adopted, replacing the June 1993 bylaw, which we felt was perfectly adequate for the needs of this island. This removed the previous graduated approach, which allowed one bedroom on smaller lots and more bedrooms on larger lots, in favour of an "anything goes" approach. At the March 27-29, 2007 Islands Trust general meeting at the Haven, we presented a statement protesting the adoption of this bylaw, and showed by text and drawings how it is physically impossible to accommodate 2 home occupations, especially on a half-acre lot, with parking requirements and the structures they might require, and still comply with all side yard, septic field, and water well setbacks.

In the presentation we stated “How can the autonomous decision-making of each island support the requirement of the act to preserve and protect all of the islands, that is, the islands as a whole. And: “I do not suspect that there is a rush to adopt the outrageously generous support for accommodation-based business that exists on Gabriola. How can the Trust as a whole allow land use that encourages such large (albeit temporary) population increases at the very time of year when water supplies are stressed to the limit?’ And: If each of you takes the approach that your people need different things, then the Trust will never preserve and protect all the islands. It will fail at its mandate.”

The Gabriola LTC response was to defend this over development as being necessary for Gabriolans to “earn an income”. The bylaw remained in place: 2 home occupations per ½ acre lot, no additional taxes, no oversight. Just purchase a half acre and go for it! At this point my partner became so disgusted with the LTC that he has refused to attend any meetings since.

So, that leaves me to carry on the fight. And as I have noted in previous communications, it was because of the establishment of the Islands Trust by the Dave Barrett government that I chose to purchase a lot here in 1977. I lived in New Westminster for my working years, and truly believed that my heart’s haven on Gabriola would be preserved and protected for my retirement.

Finally – it has been suggested by others in the past that I engage in legal means to try to force the Gabriola LTC to follow their mandate. This is not my way – I believe in government’s ability to do the right thing. As such, I have written to Premier Horgan on this and to her Majesty the Queen prior to her passing. I’m prepared to do the same with Premier Eby and King Charles, as I understand they both are committed to preserving our environment.

I would prefer, however, that you spare me the effort, and give me, the environment, and the SSRIs on Gabriola a birthday gift at the meeting on December 1st, by repealing bylaw 177.

Thank you.

Respectfully,

Bruce Thomson

Att: Dec 2006 June Harrison, The Flying Shingle Editorial note re: Wildwood Estates

Gabriola Island Zoning Bylaw No. 7, June 1993

Sep 14, 2018 Doug Routley, C.A. to me

Oct 18, 2018 email x 2 re: Naturescape sign replacement

ISLANDS TRUST CONSERVANCY

HIGHLIGHTS OF ISLANDS TRUST CONSERVANCY OCTOBER 6, 2022 BOARD MEETING

NOTE: For more detail on Conservancy meetings, including meeting minutes, please visit https://islandstrust.bc.ca/whats-happening/meetings-and-events/

1. ORGANIZATION UPDATES/TEAM

- ***This meeting was the last Islands Trust Conservancy (ITC) Board meeting prior to the Islands Trust elections. Up to three new Board members will be elected at the first Trust Council meeting. ITC Board members appointed by the Minister of Municipal Affairs will continue on the ITC Board and are unaffected by local government elections.***
- The ITC Manager provided an update on the local government election, noted ITC staff are preparing orientation materials for incoming trustees.
- The ITC Board continues to have a vacancy for one Ministerial appointment. The posting for the vacancy closed on October 7, 2022 and the ITC Board is awaiting news from the Crown Agencies and Board Resourcing Office regarding a potential new member.

2. STRATEGIC PLANNING/ADMINISTRATION

- ITC Board considered a proposed budget for the 2023/24 fiscal year. The proposed budget included an approximate 13% increase for ITC a. The increase is comparable to other Islands Trust departments and includes BCGEU tentative agreement salary increases and a business case for capacity funding for First Nations Engagement for development of a five-year ITC Plan (2026-2030). ITC Board approved the draft 2023/24 ITC Budget as presented and directed staff to provide it for inclusion in the Islands Trust draft 2023/24 budget.
- ITC Board received an update regarding the Trust Council meeting, including notice that Trust Council gave first, second and third reading to a revised Natural Area Protection Tax Exemption Program (NAPTEP) Fees Bylaw and Guidelines for Executive Committee sponsorship of NAPTEP application fees. **These guidelines and the revised bylaw will allow the ITC Board and NAPTEP applicants to apply to the Executive Committee for sponsorship (waiver) of NAPTEP fees.**

3. COVENANT AND PROPERTY ACQUISITIONS

- ITC Board approved a covenant over the Sandy Beach Nature Reserves (Keats Island) in favour of TLC The Land Conservancy of British Columbia and the Sunshine Coast Conservation Association.
- ITC Board approved and expansion for the Nighthawk Hill NAPTEP Covenant (North Pender Island), subject to receiving an updated Baseline Documentation Report that is acceptable to staff. Once the covenant is registered, staff will register a revised Natural Area Exemption Certificate on the land title.

4. COVENANT AND PROPERTY MANAGEMENT

- ITC Board approved a request for tree planting by the Pender Islands Parks and Recreation Commission in Enchanted Forest Covenant (South Pender Island).

5. COMMUNICATIONS AND OUTREACH

- Trustee Smith will attend the Conference of the Parties (COP) to the UN Convention on Biological Diversity December 7–19, 2022 and will highlight ITC work at COP15.
- A copy of the recent Covenant Landholder Newsletter Fall 2022 was provided to the ITC Board. This is a newsletter for landholders of ITC conservation covenants.

6. FUNDRAISING AND CONSERVANCY SUPPORT

- ITC Board approved an Opportunity Fund Grant award of $5,400 to the Thetis Island Nature Conservancy for delivery of their Nature Stewards Program on Thetis Island.

To find out more about Islands Trust Conservancy and our current goals, t donate to our Opportunity Fund, or to subscribe to email updates, visit our website: https://islandstrust.bc.ca/conservancy/

Shortcuts of interest:

- **Goals:** https://islandstrust.bc.ca/conservancy/conservation-planning/
- **Opportunity Fund:** (context) https://islandstrust.bc.ca/conservancy/supporting-local-conservancies/opportunity-fund-grants/ ; (to donate online) https://islandstrust.bc.ca/donate-to-conservancy/
- **Request key updates via email:** https://islandstrust.bc.ca/subscribe/ (NB: by scrolling down, you may also add your home address for a free hardcopy of the Heron newsletter, published three times per year)

Applications

Development Permit

File Number	Applicant Name	Date Received	Purpose
GB-DP-2022.3	Scrimshaw, Laird	01-Nov-2022	PID: 023-931-167 New SFD. Civic address: 390 Daniel Way, Gabriola Island, BC.

Planner: Margot Thomaidis

Planning Status

Status Date:

Development Variance Permit

File Number	Applicant Name	Date Received	Purpose
GB-DVP-2022.3	Pink, Thomas	23-Jun-2022	PID: 008-828-067 Shoreline protection variance. Civic address: 1160 The Strand, Gabriola Island, BC.

Planner: Margot Thomaidis

Planning Status

Status Date: 08-Sep-2022

Planner reviewing file.

Status Date: 08-Jul-2022

File opened & assigned. Waiting for Site survey.

File Number	Applicant Name	Date Received	Purpose
GB-DVP-2022.4	Woodside, Mark & Gail	30-Jun-2022	PID: 008-828-059 Foreshore protection variance. Civic address: 1170 The Strand, Gabriola Island, BC.

Planner: Margot Thomaidis

Planning Status

Status Date: 08-Sep-2022

Planner reviewing file.

Status Date: 08-Jul-2022

File opened & assigned. Waiting for survey.

Applications

Development Variance Permit

File Number	Applicant Name	Date Received	Purpose
GB-DVP-2022.5	Jeff Bustard and Asako Tsujino	08-Aug-2022	Application to vary setback of septic tanks and field from Natural boundary of a wetland. PID: 003-330-435, 663 Balsam Street, Gabriola Island

Planner: Margot Thomaidis

Planning Status

Status Date: 05-Sep-2022
Planner reviewing file.

Status Date: 31-Aug-2022
File open and assigned. Waiting for e-transfer.

Status Date: 31-Aug-2022
E-transfer received.

File Number	Applicant Name	Date Received	Purpose
GB-DVP-2022.7	Mike Lightbody	28-Sep-2022	PID: 004-503-198 Requesting reduced side setback for garage/office above. Civic address: 97 Malaspina Drive, Gabriola Island, BC.

Planner: Stephen Baugh

Planning Status

Status Date:

Applications

Rezoning

File Number	Applicant Name	Date Received	Purpose
GB-RZ-2022.1	Alley Enterprises Ltd. (Patricia Maloney Consulting)	07-Jun-2022	PID: 023-005-629 Change zoning to accommodate multiple changes in use. Civic address: 750 Tin Can Alley, Gabriola Island, BC.

Planner: Sonja Zupanec

Planning Status

Status Date: 08-Jul-2022

File opening procedure finished and file given to planner.

Temporary and Industrial Use Permit

File Number	Applicant Name	Date Received	Purpose
GB-TUP-2022.1	Garner, Kevan & Julia	06-Jan-2022	PID: 003-330-460 Temporary Use Permit renewal of GB-TUP-2018.1. Civic: 671 Balsam Street, Gabriola Island, BC.

Planner: Anthony Fotino

Planning Status

Status Date: 20-Jul-2022

File reassigned

Status Date: 25-May-2022

Planner awaiting additional information from applicant.

Status Date: 02-Feb-2022

Planner reviewed application. Applicant was advised that supplemental information is required to complete the application.

Islands Trust

LTC EXP SUMMARY REPORT F2023

Invoices posted to Month ending September 2022

620 Gabriola	Invoices posted to Month ending September 2022	Budget	Spent	Balance
65000-620	LTC "Trustee Expenses"	643.00	0.00	643.00
LTC Local				
65200-620	LTC - Local Exp - LTC Meeting Expenses	3,708.00	2,484.15	1,223.85
65210-620	LTC - Local Exp - APC Meeting Expenses	399.00	246.00	153.00
65220-620	LTC - Local Exp - Communications	1,000.00	0.00	1,000.00
65230-620	LTC - Local Exp - Special Projects	612.00	0.00	612.00
TOTAL LTC Local Expense		5,719.00	2,730.15	2,988.85
Projects				
73001-620-4097	Gabriola Housing Options & Impacts	1,500.00	0.00	1,500.00
73001-620-4105	Gabriola Ecological Protection Zone	1,500.00	1,008.00	492.00
TOTAL Project Expenses		3,000.00	1,008.00	1,992.00

Gabriola Island Local Trust Committee Policies & Standing Resolutions

No	Meeting Date	Resolution No.	Issue	Policy and Description
1.	June 14, 2018	GB-2018-040	Processing non-medical cannabis retail license applications	**It was MOVED and SECONDED** that the Gabriola Island Local Trust Committee adopt the following standing resolution with respect to the processing of non-medical cannabis retail license applications: • Proposed or amended licenses for non-medical cannabis retail establishments require an application to the Local Trust Committee; • The application process shall comprise a public consultation component, which includes at least one notification to neighbours, one public meeting, posting of public notices and one advertisement in a local periodical; • The public consultation process shall be determined by the Local Trust Committee after initial review of the proposal; and • However, as a minimum, the Local Trust Committee will mail or otherwise deliver a notice to all owners and residents of properties within a 500 metre radius of the subject property where the establishment is proposed at least 10 days before adoption of a resolution providing comment on the application. The required notice shall include the following information: • Name of the applicant and a description of the proposal in general terms; • The location of the proposed establishment and the subject site; • The place where, and date and time when, both a public meeting will be held and a resolution of the local trust committee considered; • The name and contact information of the Islands Trust planning staff member who can provide copies of the proposed or amended license application; and • How public comments may be submitted to the Local Trust Committee.
2.	November 22, 2018	GB-2018-122	Applications for Federal Cannabis License	**It was MOVED and SECONDED** that the Gabriola Island Local Trust Committee requests that Notices of Intention to Apply for a Federal Cannabis License be forwarded to the Local Trust Committee upon receipt by the Islands Trust.
3.	February 28, 2019	GB-2019-031	First Nations - Community Reconciliation	**It was MOVED and SECONDED** that the Gabriola Island Local Trust Committee adopt the following standing resolution: Whereas the Local Trust Committee seeks to engage in Reconciliation with local

				First Nations, governments and the island community by honouring the Truth and Reconciliation Commission Calls to Action, United Nations Declaration on the Rights of Indigenous Peoples, Draft Principles that Guide the Province of British Columbia's Relationship with Indigenous Peoples, and Islands Trust First Nations Engagement Principles, the Local Trust Committee endeavours to: a) Annually, write a letter to First Nations, (re)introducing Trustees and Staff and provide a schedule of known Local Trust Committee meetings for the upcoming year, as well as provide an update of current projects and advocacy activities; b) For various Local Trust Committee meetings, invite elders from local First Nations to attend and provide a traditional welcome to the territory; c) Work with First Nation governments on cooperative initiatives, including and not limited to, language, place names, territorial acknowledgements, and community education on Coast Salish and local First Nations' cultural heritage and history; d) Work with First Nation governments on engagement principles for inclusive land use, marine use and climate change planning; advocacy, protection and stewardship; and knowledge and information sharing protocols; and e) Establish and maintain government to government dialogue with First Nations, now and into the future, based on respect and recognition of Aboriginal rights and title, treaty rights, and First Nations' traditional territories within the Islands Trust Area.
4.	April 11, 2019	GB-2019-038	Limited Public Markets Enforcement	**It was MOVED and SECONDED** that the Gabriola Island Local Trust Committee adopt the following standing resolution with respect to limited public markets: a) Islands Trust Bylaw Enforcement Staff are directed to not enforce Section B.6.2 of Gabriola Island Land Use Bylaw No. 177, 1999 when limited public markets are operated indoors, but rather to inform the operators of the applicable land use regulations; b) This enforcement policy does not permit violation of the Land Use Bylaw and the Gabriola Island Local Trust Committee may at any time, by resolution, modify or rescind this policy or give direction to expand enforcement activities.
5.	April 11, 2019	GB-2019-040	S219 Covenant	**It was MOVED and SECONDED**

			Signatories	that the Gabriola Island Local Trust Committee adopt the following standing resolution: that the Gabriola Island Local Trust Committee is authorized to enter into section 219 covenants, in the form of the 'Model Covenant for Secondary Suites' attached and in satisfaction of subsection B.6.6.8 of the Gabriola Island Land Use Bylaw No. 177, provided that such covenants must be executed on behalf of the Local Trust Committee by two members of the Local Trust Committee.
6.	January 23, 2020	GB-2020-002	Consultation for Communication Towers	**It was MOVED and SECONDED** that the Gabriola Island Local Trust Committee adopt the "Model Strategy for Antenna Systems" prepared by the Local Planning Committee of the Islands Trust, as the Gabriola Local Trust Committee strategy to assess any future potential tower proposals in the Gabriola Local Trust Area.
7.	July 30, 2020	GB-2020-053	Proactive unlawful STVR enforcement	**It was MOVED and SECONDED** that the Gabriola Island Local Trust Committee adopt as a standing resolution to authorize proactive enforcement of unlawful Short Term Vacation Rentals.
8.	October 27, 2022	GB-2022-089	Defer enforcement on all existing non-compliant dwellings being used for residential purposes except…..	**It was MOVED and SECONDED** a) that the Gabriola Island Local Trust Committee note that given the lack of housing options on Gabriola, Bylaw Staff will defer enforcement on all existing non-compliant dwellings being used for residential purposes except in the following circumstances: i. It is determined that there are risks to health and safety; ii. It is determined that sewage is not being disposed of in an approved septic or sewage disposal system; or that septic or sewage disposal systems are beings used in excess of capacity or ability as a result of non-compliant dwellings; iii. It is determined that there is contamination of wells or other drinking water sources; iv. Non-permitted residential uses are in water zones or environmentally sensitive areas; v. That the Gabriola Island Local Trust Committee may give direction to resume enforcement on activities on any property that poses risk to the health and safety of residents or to the environment. b) Nothing in this enforcement policy should be interpreted as giving permission to violate the Land Use Bylaw and the Gabriola Island Trust Committee may change this policy at any time and may give direction to expand enforcement activities at any time.

				c) The Gabriola Local Trust Committee will review this standing resolution at a minimum of once per year with updates from the Bylaw Compliance and Enforcement Manager to measure results and impacts, as amended. d) That the Gabriola Local Trust Committee recommend to the incoming Gabriola Local Trust Committee that it conduct a community consultation regarding the Standing Resolution.

Workprogram

Welcome, Becky McErlean

Work Program Application

Gabriola Island

Reports

FUAL (6) Future Projects (2) Active Projects (3)

Add Record Archive

Priority	Activity	Received Date	Target Date	Responsibility
3rd Priority	**Description**: Gabriola Island Comprehensive OCP and LUB Review **Activity**: - Establish opportunities to incorporate First Nations perspectives on indigenous housing needs and intergovernmental collaboration for effective decision making. - Consider new Development Permit areas for water conservation; form and character; and protection of biodiversity. - Consider and incorporate RCP goals as part of the housing project. - Develop an island wide water sustainability plan that builds on the RDN water budget data, rainwater catchment and requirements of the Water Sustainability Act. - Review definitions of 'affordable' and 'attainable'housing. - Review OCP policies respecting affordable, rental, seniors, special needs housing, social needs, social well-being and social development; develop a new 'housing first' policy. - Review amenity zoning and housing agreements; density bank policies; opportunities for rental zoning. - Consider secondary suites on lots smaller than 2hectares. - Consider OCP designations, density provisions, LUB regulations, and Development Permit guidelines for multi-dwelling housing and mixed use buildings. - Review OCP and LUB to improve protection of coastal areas; development of a comprehensive DPA for shorelines in the Gabriola Island Local Trust Area - Hazardous areas/Steep Slopes DPA: Consider hazardous areas and steep slopes development permit area designation; consider how to address areas of potentially problematic soils, shoreline erosion, and localized areas of steep terrain - Consider implementing Eelgrass protection regulations - Gabriola Village Plan: Undertake a comprehensive review of policies and regulations with respect to the Gabriola Village Core - Green Energy: Consider policy and regulatory mechanisms to encourage green and renewable energy - Review bylaws with respect to temporary use permits for commercial vacation rentals - Review of temporary sawmill regulations - Definition of personal use of animals for SRR zoned lots - Review of how cisterns, solar panels and parking are regulated as structures subject to lot coverage calculations - Review of section B.2.1.1 for variances within DP3 - Review minimum average parcel size calculations in LUB and OCP to ensure consistent and supportive of more than 5% dedication of parkland - Review definition and regulations for limited public market, and INI zone uses pertaining to market sales - correction to WC3 mapped location to coincide with Green Wharf - Water Resource Planning: Review of water requirements at the time of subdivision - Protection of the Coastal Douglas-fir and Associated Ecosystems: An Islands Trust Tool Kit (2018): Implementation of the report recommendations into OCP policy and LUB regulations.			

- Accessory Buildings: Review of regulations pertaining to the order of construction of accessory buildings on lots.
- Review options to allow cannabis production in zones other than 'agriculture' and possible ways to regulate odour, noise, water use and light pollution related to agricultural activities when permitted in a zone.
- Recognize areas of cultural significance - consider designation of a Heritage Conservation Areas or adopt Heritage Bylaws to protect heritage cultural resources similar the projects completed on South Pender and Saturnina.
- Review regulations to ensure flexibility for housing options in ALR are consistent with recent ALC changes.

2nd Priority	**Description**: Review and update Development Approval Information (DAI) bylaw **Activity**: Update Gabriola Island Bylaw No. 150, DAI Bylaw. Include new DPAs.	16-Jun-2022
1st Priority	**Description**: Develop Ecological Protection Zone **Activity**: Research and develop a new ecological protection zone as part of the Parks (P) OCP designation. Update zoning of Coats Marsh.	

Workprogram

Welcome, Becky McErlean

Home | Administrative Services | Committee Services | Local Planning Services | TAPIS | Time Collection

Work Program Application

Gabriola Island | Reports

FUAL (6) | Future Projects (2) | Active Projects (3)

Add Record | Archive

Received Date	Description	Responsibility

Description:
DeCourcy Island OCP and LUB Review

Activity:
Review OCP and regulatory bylaws; establish an Advisory Planning Commission. Topics include: park areas without park zoning; zoning; DAI Bylaw; subdivision policies and regulations.

Description:
Snuneymuxw Relationship Building

Activity:
Strengthen relationship with Snuneymuxw First Nation.