



Salt Spring Island Local Trust Committee

Regular Meeting Agenda

Date: Thursday, July 10, 2025
Time: 9:30 a.m.
Location: Meaden Hall
120 Blain Road, Salt Spring Island, BC

	Pages
1. CALL TO ORDER	9:30 AM - 9:35 AM
2. APPROVAL OF AGENDA	
3. TOWN HALL AND QUESTIONS	9:35 AM - 9:50 AM
4. DELEGATIONS - NONE	
5. TRUSTEE REPORTS	9:50 AM - 10:00 AM
Verbal Report	
6. CHAIR'S REPORT	10:00 AM - 10:05 AM
Verbal Report	
7. ISLANDS TRUST CONSERVANCY CHAIR'S REPORT	10:05 AM - 10:10 AM
Verbal Report	
8. CRD DIRECTOR'S REPORT	10:10 AM - 10:15 AM
Verbal Report	
9. PREVIOUS MEETINGS	10:15 AM - 10:20 AM
9.1 Draft Minutes of the Salt Spring Island Local Trust Committee	
9.1.1 <u>Draft Minutes of the June 5, 2025 SSI LTC Regular Meeting</u>	5
For Adoption	
9.2 Resolutions Without Meeting Report - None	
9.3 Draft Minutes of the Advisory Planning Commissions	
9.3.1 <u>Draft minutes of the June 19, 2025 AAPC Meeting</u>	13
For Information	

For Information

9.4 Local Trust Committee Public Hearing Record - None

10. CORRESPONDENCE 10:20 AM - 10:25 AM

Please visit the Applications and Projects pages on the Islands Trust website for recent public submissions.

For Applications, go to: <http://www.islandstrust.bc.ca/SSIapplications>

For Projects, go to: <http://www.islandstrust.bc.ca/SSIprojects>

10.1 CRD Director to LTC - Dated June 4, 2025 - Regarding GISRA Kings Lane Project 18

For Information

10.2 SS LTC Chair to Salt Spring Island Saturday Market Society - Dated June 6, 2025 - Regarding Amplified Music at the Salt Spring Saturday Market 20

For Information

11. BUSINESS ARISING FROM MINUTES 10:25 AM - 10:30 AM

11.1 Follow-Up Action List 21

Report dated July 2025

12. WORK PROGRAM

12.1 Active Projects List 25

Report Dated July 2025

12.2 Future Projects List 29

Report Dated July 2025

13. COMMUNITY INFORMATION MEETING - NONE

14. PUBLIC HEARING - NONE

.....BREAK UNTIL 12:00 NOON.....

15. APPLICATIONS AND REFERRALS 12:00 PM - 1:00 PM

15.1 PLRZ20250220 - J. Gauthier - 154 Kings Lane, SSI 32

Staff Report

15.2 PLRZ20240145 - J. Litke - 200 Colins Road, SSI 52

	Staff Report	
15.3	PLDP20250189 - D. Brown - 378 Lower Ganges RD, SSI	56
	Staff Report	
15.4	PLDP20250056, PLDP20250057, PLDP20250059 - B. Fossen - 235 Quarry Drive, 239 Quarry Drive, 434 Baker Road	84
	Delegated Development Permit Appeal Memo	
16.	LOCAL TRUST COMMITTEE PROJECTS - NONE	
17.	NEW BUSINESS	1:00 PM - 1:30 PM
17.1	SS-BL-547 - Meeting Procedures Bylaw	510
	Request for Decision	
17.2	SS-BL-548 - Public Notice Bylaw	514
	Request for Decision	
18.	REPORTS	
18.1	Policy and Standing Resolutions List	520
	For Information	
18.2	Open Applications Report	528
	Report dated July 2025	
18.3	Expense Reports	548
	Reports dated March, April and May 2025	
18.4	Islands Trust Conservancy Board Report	551
	Report dated June 2025	
19.	CLOSED MEETING	1:30 PM - 2:00 PM
19.1	Motion to Close the Meeting	
	That the Salt Spring Island Local Trust Committee close this meeting to the public subject to Community Charter Section 90 (1) (f) to discuss matters of law enforcement and that staff be invited to remain.	
19.2	Rise and Report	
	At the June 5, 2025 meeting the April 10, 2025 in-camera meeting minutes were adopted.	
20.	UPCOMING MEETINGS	

The next regular meeting of the Salt Spring Island Local Trust Committee is scheduled for 9:30 a.m. on September 11, 2025 at the Legion Meaden Hall, 120 Blain Road, Salt Spring Island.

20.1 Special Meeting Resolution

That the Salt Spring Island Local Trust Committee request staff to schedule an electronic Special Meeting to discuss the OCP/LUB Project Update at 2:00pm on Thursday August 28, 2025 with a viewing location for the public at the Salt Spring Island United Church - Upper Hall, 111 Hereford Avenue, Salt Spring Island, BC.

21. ADJOURNMENT



Salt Spring Island Local Trust Committee

Minutes of Regular Meeting

Date: Thursday, June 5, 2025
Location: Meaden Hall
 120 Blain Road, Salt Spring Island

Members Present: Timothy Peterson, Chair
 Jamie Harris, Local Trustee
 Laura Patrick, Local Trustee

Staff Present: Chris Hutton, Regional Planning Manager
 Chris Buchan, A/Island Planner (electronic)
 Milad Panahifar, Planner 1 (electronic)
 Oluwashogo Garuba, A/Planner 2
 Rob Pingle, Planning Technician
 Lisa Millard, Meeting Administrator/Recorder (electronic)

Others Present: There were approximately 5 members of the public present

1. CALL TO ORDER

Chair Peterson called the meeting to order at 9:32 a.m. He introduced himself, the Trustees, and staff. Chair Peterson acknowledged that the Local Trust Committee is meeting in the territory of the Coast Salish First Nations and recognized that June is Indigenous History Month.

2. APPROVAL OF AGENDA

The following addition to the agenda was presented for consideration:

- 17.1 North Salt Spring Waterworks District Request to Province Letter Dated May 16, 2025

By general consent the agenda was adopted as amended.

3. TOWN HALL AND QUESTIONS

There were no public comments.

4. DELEGATIONS

4.1 Mairi Welman, Co-Chair – Salt Spring Solutions

The delegate provided an overview of the outcome of their community engagement project on housing and highlighted the following:

- Topics of engagement included clustered housing, readying Ganges village for increased housing, and enabling accessory dwellings in appropriate locations;
- Engagement methods included focus groups for renters, employers, workers, and the insecurely housed, one-on-one phone interviews with landlords,

developers, and investors, and an online public survey which garnered 657 responses;

- 70% of survey respondents supported clustered housing to preserve rural areas, 71% supported enabling accessory dwelling units in appropriate locations, and 73% believe increasing housing in Ganges is necessary to address housing needs;
- There is community preference for prioritizing non-market rental housing and cautious resource management;
- Planners and developers indicated pre-zoning could help streamline permitting and approval processes;
- Landlords of legal and illegal market rental housing noted formalizing illegal suites would increase the availability of safe and compliant housing;
- There is consistent support for alternative housing models such as tiny home communities, cooperative housing, and clustered housing; and
- They will submit a final report of their findings as part of the Official Community Plan engagement process.

4.2 Linda Adams, Vice-Chair – Gulf Islands Seniors Residence Association (GISRA)

The delegate spoke to the following:

- the Association owns property on Kings Lane where the Salt Spring Island Health Centre is located along with modular units currently being used for temporary supportive housing;
- The property was acquired with intent to build another affordable housing complex for seniors and the Local Trust Committee rezoned the property in 2020 for that use plus a medical clinic with a maximum of 12 medical practitioners;
- They have determined that housing model is no longer viable while at the same time understanding there is urgent need for workforce housing;
- A rezoning application has been submitted seeking to amend the current zoning to allow affordable housing that is not limited to seniors, maintain the existing housing agreement registered on the property with some minor language amendments, allow a more flexible range of office types with intent to increase primary care services, remove the maximum number of medical practitioners permitted, and introduce amendments that would facilitate subdivision of the clinic portion of the property; and
- Due to provincial funding application deadlines and urgent need for housing, they are asking the Local Trust Committee to fast track their rezoning application.

5. TRUSTEE REPORTS

Trustee Harris reported Trust Council will be meeting on Salt Spring Island June 17-19 and MLA Rob Botterell will be providing a presentation. He invited interested members of the public to attend the meeting to express concern regarding MLA Botterell's comments published in the Driftwood which critiqued Trust Council's request for a governance review.

Trustee Patrick reported the following:

- Witnessed the Tsawout First Nation leadership attend Salt Spring Island to celebrate land back adjacent to their reserve;

- Recognized the efforts of the Salt Spring Foundation campaign to raise funds for the parcel of land that has been acquired by the Tsawout First Nation;
- Attended the May 15 Local Community Commission meeting to hear a delegation from the consultant hired for the Commission's developing housing strategy;
- Attended joint Local Community Commission / Local Trust Committee meeting;
- Met with Transition Salt Spring to discuss the Official Community Plan and Land Use Bylaw project;
- Attended Trust Program Committee, CAO Performance Evaluation Committee, and Committee of the Whole meetings;
- Attended the Tiny Home on Wheels Steering Committee to discuss next steps;
- Attended the Southern Gulf Island Forum and Cross Border Forum meetings and;
- Participated in a CBC Radio interview on water conservation and drought.

6. CHAIR'S REPORT

Chair Peterson reported the following:

- Ongoing attendance at Trust Program Committee meetings to continue work on Islands Trust Policy Statement amendments;
- Attended Committee of the Whole meeting to discuss the 2023 Governance Review;
- Attended joint Local Community Commission / Local Trust Committee meeting;
- Executive Committee is focussed on the upcoming Trust Council meeting being held on Salt Spring Island;
- The 2026/27 pre-budget consultation engagement has commenced with an online survey available on the website; and
- Upcoming attendance at Islands Trust and Tsawout First Nation Feast and Gathering.

7. Islands Trust Conservancy Board Chair's Report

Islands Trust Conservancy Board Chair Gauvreau provided a report and highlighted the following:

- The Conservancy has launched a campaign to celebrate its 35th anniversary which is being promoted on the website, through social media, in local newspapers, and at booths at Pender, Salt Spring, and Gabriola Island fall fairs;
- They are currently 115 properties under conservancy protection including 34 nature reserves and 81 properties with conservation covenants;
- The spring edition of the Heron newsletter has been released; and
- Highlights of the recent Islands Trust Conservancy Board meeting were provided.

8. CRD DIRECTOR'S REPORT - None

9. PREVIOUS MEETINGS

9.1 Draft Minutes of the Salt Spring Island Local Trust Committee

9.1.1 Draft Minutes of the May 8, 2025 Salt Spring Island Local Trust Committee Regular Meeting

By general consent, the Salt Spring Island Local Trust Committee Minutes of May 8, 2025 were adopted.

9.2 Resolutions Without Meeting Report - None

9.3 Draft Minutes of the Advisory Planning Commissions - None**9.4 Local Trust Committee Public Hearing Record - None****10. CORRESPONDENCE**

Correspondence received concerning current applications or projects is posted on the LTC webpage

10.1 Honorable Minister R. Kahlon Letter - Dated May 28th 2025 regarding SSI LTC's request to opt-in to the principal resident requirement

Received for information.

10.2 P. Prince Email - Dated May 14th 2025 to LTC with Saturday Market Society, CRD Administrator and MP - Regarding no amplified music policy

Discussion ensued regarding the implications of providing a letter in response to a policy that is not within the Local Trust Committee's realm of responsibility.

It was MOVED and SECONDED, that the Salt Spring Island Local Trust Committee request the Chair write a letter of concern to the Capital Regional District regarding their proposal about amplified music at the Saturday market.

The Regional Planning Manager suggested an amendment to the motion to change word the word "concern" to "support for amplified music" and to direct the letter to the Saturday Market Society.

The question on the following motion, as amended, was then called.

SS-2026-066

It was MOVED and SECONDED

that the Salt Spring Island Local Trust Committee request the Chair to write a letter of support for amplified music to the Salt Spring Island Saturday Market Society.

CARRIED

10.3 S. Henderson Email - Dated April 8th 2025 - Regarding CRD-LCC Request for Data analysis - Development potential

Received for information.

11. BUSINESS ARISING FROM MINUTES**11.1 Follow-Up Action List**

The Regional Planning Manager provided an update to the Follow-up Action List.

11.2 Bylaw 540 – Rainbow Road Housing Agreement Repeal Bylaw

The Planner summarized the staff report and highlighted the following:

- Proposed Bylaw No. 540 has undergone three readings, was approved by the Islands Trust Executive Committee, and is being presented to the Local Trust Committee for adoption; and
- The foreclosed property has now been sold and staff are not aware of the new owner's intention for the property.

The Local Trust Committee had no questions or comments for the Planner.

SS-2025-067

It was MOVED and SECONDED,

that the Salt Spring Island Local Trust Committee Housing Agreement Repeal Bylaw No. 540 cited as “Salt Spring Island Local Trust Committee Bylaw No. 540” be adopted.

CARRIED

12. WORK PROGRAM

12.1 Active Projects List

The Regional Planning Manager provided an update to the Active Projects List.

A Trustee noted they requested staff no longer working in the Salt Spring office provide background information on the proof of water project to be shared with all parties to ensure duplication of previous work is not undertaken.

12.2 Future Projects List

Received for information.

13. COMMUNITY INFORMATION MEETING - None

14. PUBLIC HEARING – None

Item 16 was heard prior to Item 15

The meeting was recessed for a break at 11:18 and reconvened at 12:00

15. APPLICATIONS AND REFERRALS

15.1 PLDVP20250078 - R. Neff - 116 Cypress View Rd, SSI

The Planner summarized the staff report and highlighted the following:

- The application retroactively seeks a variance to the setback from water bodies for the installation of a culvert on the subdivision drainage ditch located on the property; and
- The applicant previously installed a culvert on the subdivision drainage ditch as part of the ongoing development of the property; however, a culvert can not be sited within 15 metres of the natural boundary of any water body.

The applicant was in attendance, spoke to the application, and noted they have spoken to property owners above and below their property to provide an update on the progress of the application.

The Local Trust Committee had no questions for the Planner or applicant.

SS-2025-068

It was MOVED and SECONDED,

that the Salt Spring Island Local Trust Committee approve issuance of Development Variance Permit PLDVP20250078 (116 Cypress View Road).

CARRIED

15.2 PLDVP20250029 - D. McKerrell - 212 Narrows West Road, SSI

The Planner summarized the staff report and highlighted the following:

- The application seeks a variance to the maximum allowed area of a float for boat moorage from 35 square metres to 136 square metres to allow the construction of a non-commercial group moorage facility within the Shoreline 6 Development Permit Area;
- The application was referred to Islands Trust Conservancy who confirmed no impact to their interests;
- The Local Trust Committee can determine if they wish to refer the application to First Nations;
- No vegetation clearing is anticipated as part of the project; and
- There have been no responses received following the statutory notification period.

The applicant's representative was in attendance and spoke to the application.

Discussion ensued and it was clarified that provincial approval for the dock was previously obtained in 2011 and a variance is required due to the dock size

SS-2025-069

It was MOVED and SECONDED,

that the Salt Spring Island Local Trust Committee approve issuance of Development Variance Permit PLDVP20250029

CARRIED

16. LOCAL TRUST COMMITTEE PROJECTS**16.1 Official Community Plan – Land Use Bylaw Update**

The Planner summarized the quarterly progress report on the Official Community Plan – Land Use Bylaw Update project and highlighted the following:

- A project consultant has been secured and there will be opportunity for the Local Trust Committee to meet with the consultant;
- The Project Advisory Planning Commission (PAPC) met and were provided with the project overview and terms of reference;
- The PAPC expressed interest in having meetings in a hybrid electronic / in person format; however, the Islands Trust Act requires in person meetings;
- Outreach letters have been sent to all First Nations with Treaty or territorial interest and staff are exploring opportunities for early and ongoing engagement;
- Budget allocated for First Nations engagement might be insufficient given the level of interest; and
- Project updates will be posted on the project webpage.

Discussion ensued and the following comments were recorded:

- Staff were encouraged to look for additional funding opportunities for engagement as the number of First Nations that are to be engaged with is significant;
- It is important to understand which Nations wish to engage prior to determining how much funding will be required and once known a business case for the next fiscal budget period can be developed; and

- A Trustee does not support the project as housing should be prioritized, the Official Community Plan work is a lengthy and expensive process that will not complete this term nor be helpful in resolving immediate issues of concern.

17. NEW BUSINESS

17.1 North Salt Spring Waterworks District Request to Province Letter Dated May 16, 2025

Discussion ensued and Trustees expressed support for the North Salt Spring Waterworks District's request.

SS-2025-070

It was MOVED and SECONDED,

that the Salt Spring Island Local Trust Committee request the North Salt Spring Waterworks District request to Province letter dated May 16, 2025 be added to the Trust Council agenda as a late item and that the Salt Spring Island Local Trust Committee recommends Trust Council support endorsement of the request.

CARRIED

18. REPORTS

18.1 Policy and Standing Resolutions List

Received for information.

18.2 Open Applications Report

Discussion was undertaken about the potential to prioritize the Kings Lane rezoning application. The Regional Planning Manager summarized the current workload and noted that while robust a Planner could focus on the application should the Local Trust Committee provide direction to do so.

The meeting was recessed for a break at 12:22 p.m. and reconvened at 12:28 p.m.

SS-2025-071

It was MOVED and SECONDED,

that the Salt Spring Island Local Trust Committee request staff prioritize PLRZ20250220 - 154 Kings Lane and any associated applications.

CARRIED

18.3 Expense Report - None

18.4 Islands Trust Conservancy Board Report

Received for information.

19. CLOSED MEETING

19.1 Motion to Close the Meeting

SS-2025-72

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)(f) for the purpose of considering:

- (f)law enforcement, if the council considers that disclosure could reasonably be expected to harm the conduct of an investigation under or enforcement of an enactment;
- and that the Recorder and Staff attend the meeting.

CARRIED

19.2 Rise and Report

Chair Peterson will rise and report at the next regularly scheduled meeting.

20. UPCOMING MEETINGS

The next regular meeting of the Salt Spring Island Local Trust Committee is scheduled for 9:30 a.m. on July 10, 2025 at the Legion Meaden Hall, 120 Blain Road, Salt Spring Island.

21. ADJOURNMENT

By general consent the meeting was adjourned and closed to the public to go in-camera at 12:38 p.m.

Timothy Peterson, Chair

Certified Correct:

Lisa Millard, Meeting Administrator/Recorder



Salt Spring Island Agricultural Advisory Planning Commission

Minutes of a Regular Meeting

Date of Meeting: Thursday, June 19, 2025

Location: United Church, Upper Hall Meeting Room
111 Hereford Avenue, Salt Spring Island

Members Present: Bree Eagle, Chair
Conrad Pillon, Vice Chair
Kees Ruurs, Commissioner

Regrets: Ken Byron, Commissioner
Scott Royal, Commissioner

Staff Present: Oluwashogo Garuba, Planner
Rob Pingle, Planning Technician (Recorder)
Kalyaan Selvakumar, Planning Team Assistant

Others Present: Laura Patrick, Local Trustee
Dan Ovington, CRD Salt Spring Senior Manager

These minutes follow the order of the agenda although the sequence may have varied.

Planning Technician Pingle called the meeting to order at 3:18 p.m. and called for introductions and introductions were carried out.

1. ELECTION OF THE CHAIR AND VICE CHAIR

Planning Technician Pingle announced the election procedures and called for nominations for Chair. Commissioner Eagle was nominated and accepted the nomination. Planning Technician Pingle called three times for further nominations. Hearing none, nominations were declared closed and Commissioner Eagle was elected Chair by acclamation.

Planning Technician Pingle called for nominations for Vice-Chair. Commissioner Pillon was nominated and accepted the nomination. Planning Technician Pingle called three times for further nominations. Hearing none, nominations were declared closed and Commissioner Pillon was elected Vice-Chair by acclamation.

2. AGENDA

2.1 Approval of Agenda

There was a request to add the topic of Roll of the AAPC to Other Business

By general consent the agenda was adopted as amended.

3. MINUTES OF PREVIOUS MEETING

3.1 Draft Minutes of the January 20, 2025 APC Meeting

By general consent, the minutes of the January 20, 2025 Salt Spring Island Advisory Planning Commission meeting were adopted.

4. BUSINESS ITEMS

4.1 PLRZ20240188 - 210 & 220 Kanaka Road, Salt Spring Island

Planner Garuba advised that the Salt Spring Island Local Trust Committee referred application PLRZ20240188 to the Salt Spring Island Advisory Planning Commission for its review and comment.

In discussion the following items were noted:

- There was a discussion about the history of the property

It was **MOVED and SECONDED**,

That the Advisory Planning Commission recommend to the Salt Spring Island Local Trust Committee that proposed Bylaw No. 543 proceeds.

CARRIED

5. OTHER BUSINESS

5.1 Role of the AAPC

There was discussion about how commissioners could be engaged. It was noted that items can only be discussed that are referred to the commission by the Local Trust Committee.

6. ADJOURNMENT

By general consent the meeting adjourned at 3:38 p.m.

Bree Eagle, Chair

CERTIFIED CORRECT:

Rob Pingle, Recorder



Salt Spring Island Advisory Planning Commission

Minutes of a Regular Meeting

Date of Meeting: Thursday, June 19, 2025

Location: United Church, Upper Hall Meeting Room
111 Hereford Avenue, Salt Spring Island

Members Present: Jean Brouard, Chair
Elaine M. Buck McCann, Vice Chair
Tim Hiltz, Commissioner
Anne Gunn, Commissioner
Dolores Bender-Graves, Commissioner
Osman Phillips, Commissioner

Regrets: Leigh Large, Commissioner
Gabriel Wiebe, Commissioner
Stanley Shapiro, Commissioner

Staff Present: Oluwashogo Garuba, Planner
Rob Pingle, Planning Technician (Recorder)
Kalyaan Selvakumar, Planning Team Assistant

Others Present: Laura Patrick, Local Trustee
Dan Ovington, CRD Salt Spring Senior Manager
Kate William, CRD
Justin Byron, CRD Parks Maintenance Supervisor
A member of the public

These minutes follow the order of the agenda although the sequence may have varied.

Planning Technician Pingle called the meeting to order at 1:05 p.m. and called for introductions and introductions were carried out.

1. ELECTION OF THE CHAIR AND VICE CHAIR

Planning Technician Pingle announced the election procedures and called for nominations for Chair. Commissioner Brouard was nominated and accepted the nomination. Planning Technician Pingle called three times for further nominations. Hearing none, nominations were declared closed and Commissioner Brouard was elected Chair by acclamation.

Planning Technician Pingle called for nominations for Vice-Chair. Commissioner McCann was nominated and accepted the nomination. Planning Technician Pingle called three times for further nominations. Hearing none, nominations were declared closed and Commissioner McCann was elected Vice-Chair by acclamation.

2. AGENDA

2.1 Approval of Agenda

By general consent the agenda was adopted.

3. MINUTES OF PREVIOUS MEETING

3.1 Draft Minutes of the January 20, 2025 APC Meeting

By general consent, the minutes of the January 20, 2025 Salt Spring Island Advisory Planning Commission meeting were adopted.

4. BUSINESS ITEMS

4.1 PLRZ20240188 - 210 & 220 Kanaka Road, Salt Spring Island

Planner Garuba advised that the Salt Spring Island Local Trust Committee referred application PLRZ20240188 to the Salt Spring Island Advisory Planning Commission for its review and comment.

The applicant spoke to the proposed use of the property and how it aligns with the historic use of the property.

In discussion the following items were noted:

- There was a question regarding the precedent that could be set by this decision
- There was a discussion about the potential for housing on the property
- There was a discussion about security lighting and storm water drainage on the property
- There was a discussion about the potential for a land swap so that the housing may continue on the property
- There was a question about the landscaping potential to buffer the use from the neighbours
- There was a question about the setbacks proposed for the property
- There was discussion about areas of the nearby community that has housing potential

It was MOVED and SECONDED,

That the Advisory Planning Commission recommend to the Salt Spring Island Local Trust Committee that proposed Bylaw No. 543 proceed, subject to the following recommendations:

- Design requirements are added to ensure minimal impact of lighting and provide vegetation screening.
- The Official Community Plan is updated to guide future public work uses outside of residential neighbourhoods.

CARRIED

4.2 SS-RZ-2019.1 - 248 Upper Ganges Road, Salt Spring Island

Planner Garuba advised that the Salt Spring Island Local Trust Committee referred application SS-RZ-2019.1 to the Salt Spring Island Advisory Planning Commission for its review and comment.

In discussion the following items were noted:

- There was a question regarding the timing of the Temporary Use Permit and the Rezoning application
- There was a discussion about the quality and quantity of water available on the property and the state of Madrona creek
- There was a discussion about the impact on the neighbourhood.

The Advisory Planning Commission requested staff to coordinate a site visit with the applicant and qualified professional in attendance.

A decision regarding this application will be deferred to after the site visit.

5. OTHER BUSINESS - None

6. ADJOURNMENT

By general consent the meeting adjourned at 3:14 p.m.

Jean Brouard, Chair

CERTIFIED CORRECT:

Rob Pingle, Recorder

From: Chris Hutton
Sent: Thursday, June 5, 2025 8:04 AM
To: SSIInfo
Subject: FW: GISRA Kings Lane Project

This should be added to next LTC agenda.

Sincerely,

Chris Hutton, MPA, MCIP, RPP
Regional Planning Manager
Islands Trust | 250-538-5608

The Salt Spring Island Islands Trust office at 500 lower Ganges Rd is now closed to in-person service. Islands Trust staff will continue to provide services by phone and e-mail until the new office space at 121 McPhillips Avenue opens. During the in-person office closure period, enquiries can be submitted by email at ssiinfo@islandstrust.bc.ca, or call 250.537.9144.

From: Gary Holman <directorssi@crd.bc.ca>
Sent: Wednesday, June 4, 2025 4:30 PM
To: Timothy Peterson <tpeterson@islandstrust.bc.ca>; Laura Patrick <lpatrick@islandstrust.bc.ca>; Jamie Harris <jharris@islandstrust.bc.ca>
Cc: Chris Hutton <chutton@islandstrust.bc.ca>; Earl Rook <erook@crd.bc.ca>; Robb Magley <robb.magley@gulfislandsdriftwood.com>
Subject: GISRA Kings Lane Project

Dear Trustees, due to a conflicting LCC meeting tomorrow, I'm unable to attend the LTC meeting. I understand that GISRA will be requesting the LTC to expedite their applications for rezoning and development permit amendment for their 50 unit Kings Lane affordable housing project.

This project represents Salt Spring's best opportunity to develop new affordable housing that can serve a range of needs. Expediting Trust approvals is essential to enable GISRA to submit funding applications as quickly as possible to BC Housing's Community Housing Fund. This program will be heavily subscribed and the sooner GISRA can get its application in the queue, the better its chances.

The project is located within the Ganges sewered area, and I have informed CRD staff that I am prepared to support a Community Works Fund grant of up to \$400,000 to support the extension of the sewer line to the property. The LCC has provided a grant in aid to GISRA for necessary pre-development due diligence. GISRA will also be applying to the CRD Rural Housing Program for pre-development funding, as well as to CRD Housing for construction funding. GISRA will also be exploring other funding and other partnership arrangements, and the success of all these efforts will be predicated on necessary land use approvals.

Thank you for all the work you are doing to promote affordable housing on Salt Spring and for your consideration in this matter.

Regards,
Gary Holman
CRD Director, Salt Spring Island

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Toll Free via Enquiry BC in Vancouver 660-2421. Elsewhere
in BC **1.800.663.7867**
Email ssiinfo@islandstrust.bc.ca
Web www.islandstrust.bc.ca

June 6, 2025

File No.: 01-20

Salt Spring Island Saturday Market Society
theboard@saltspringmarket.com

To Salt Spring Island Saturday Market Society:

Re: Amplified Music at the Salt Spring Saturday Market

The Salt Spring Island Local Trust Committee (SS LTC) passed the following resolution on June 5, 2025,

"that the Salt Spring Island Local Trust Committee request the Chair to write a letter of support for amplified music to the Salt Spring Island Saturday Market Society."

Salt Spring Island has a long musical heritage and the inclusion of amplified music at community events, such as the Saturday Market, not only offers opportunities for artists to share their gifts, but brings joy and culture to such events and the diverse folk who attend them.

We respectfully ask that you consider a nuanced approach to consideration of continued permission for amplification at your events.

Sincerely,

Timothy Peterson
Chair, Salt Spring Island Local Trust Committee
Islands Trust

cc: Salt Spring Local Trust Committee

Follow Up Action Report

Salt Spring Island

11-Apr-2024

Progress	Activity	Responsibility	Dates	Status
49%	1 Resolution No: SS-2024-30 Work with Tsawout First Nation staff to develop a MOU and report back to the LTC. Updates: Feb - Staff to provide update at Feb TLC meeting following Feb 7 meeting. Nov - Staff continue to work with Tsawout to determine attendees. TAS now supporting with resources. Jun - Leadership meeting held. Feast planning ongoing, Tsawout anticipates MOU after the feast with the Tsawout First Nation; May 2, 2025: A feast is being planned for June. more details to come. It is anticipated that following this feast a MOU is likely to follow. June 16, 2025: ·Feast with Tsawout held. Anticipate further engagement in future months to fall, noting upcoming Tsawout election and potential summer vacation impacts.	Chris Hutton Clare Frater Joe Elliott		In Progress

Follow Up Action Report

Salt Spring Island

12-Dec-2024

Progress	Activity	Responsibility	Dates	Status
44%	1 Resolution No: SS-2024-132 Staff to follow up with the sender of correspondence Item 9.1 . (Taylor to LTC - August 30, 2024 - Regarding Letter of Agreement between the Islands Trust Council and Ministry of Transportation and Infrastructure and report) May 28, 2025: * Left message with Mr. Taylor June 25, 2025: * staff have not had response from sender and consider this matter closed/at the will of the sender to follow up.	Chris Hutton	Target: 30-Jun-2025	Completed
9%	2 Resolution No: SS-2024-145 Staff to arrange a webinar for Trustees and the public on the City view program. May 28, 2025 Outline initiated. Will be discussed internally before finalizing and proceeding. June 26, 2025 Ongoing work with admin and communications specialist	Bhumika Joshi Chris Hutton Kalyaan Selvakumar		In Progress

Follow Up Action Report

Salt Spring Island

20-Mar-2025

Progress	Activity	Responsibility	Dates	Status
0%	1 Resolution NO.: SS-2025-032 Joint Meetings with the Capital Regional District Salt Spring Island Local Community Commission Staff to review Trust Council Bylaw No. 63 and to draft a protocol agreement between the Capital Regional District Board and the Salt Spring Island Local Trust Committee .	Chris Hutton	Target: 09-May-2025	In Progress
45%	2 Resolution No.: SS-2025-041 Complete Community Report Staff to prepare an executive summary to affix to 'Salt Spring Island Complete Communities Assessment: Final Report'. May 28, 2025: -Grant funding final report underway. Once complete, report and executive summery will be posted. June 25, 2025: * Final report funding now completed. Expect to publish final report in July.	Chris Buchan		In Progress

Follow Up Action Report

Salt Spring Island

05-Jun-2025

Progress	Activity	Responsibility	Dates	Status
0%	1 Resolution No.: SS-2026-066 Chair to write a letter of support for amplified music to the Salt Spring Island Saturday Market Society.	Rob Pingle		Completed
100%	2 Resolution No.: SS-2025-067 The Salt Spring Island Local Trust Committee Housing Agreement Repeal Bylaw No. 540 cited as 'Salt Spring Island Local Trust Committee Bylaw No. 540' be adopted.	Rob Pingle		Completed
0%	3 Resolution No.: SS-2025-070 Staff will add the North Salt Spring Waterworks District letter dated May 16, 2025 to the Province, in the Trust Council agenda as a late item and that the Salt Spring Island Local Trust Committee recommends Trust Council support endorsement of the request.	Chris Hutton		Completed

Active Projects Report

Salt Spring Island

1. Extraordinary Project - OCP-LUB Update

Responsible

Dates

Activity:

2025-05-29:

- Project consultant selection underway
- PAPC initial meeting and orientation completed.

Next Steps:

- Project kick-off meeting with project consultants.
- quarterly reporting to LTC

Chris Hutton

Chris Buchan

Rec'd: 01-Apr-2023

Target: 31-Mar-2026

2025-01-24 RFP Issued. Closes February 20, 2025

Most Recent:

2023-11: Ongoing First Nations Engagement, Terms of Reference approved by

Description:

There has been no comprehensive review of the SS OCP since its adoption in 2008, nor any review of the Land Use Bylaw since 1999. The need to update these bylaws is a priority in response to policy, social, and technological change and to address contemporary community challenges the current document no longer serves. Those challenges include a lack of affordable housing and housing options, growth pressures, climate resiliency planning, infrastructure issues (such as the water moratorium), workforce stability challenges, transportation networks, and First Nations Reconciliation. The SS OCP update is intended to provide a framework to guide the development of a complete community by diversifying and increasing housing options at appropriate locations, advancing First Nations Reconciliation, reducing infrastructure

Active Projects Report

Salt Spring Island

costs, reducing greenhouse gas (GHG) emissions, and improving walkability. The Land Use Bylaw update will improve land use planning regulation to ensure that regulations match the needs and expectations of land use in the community, in consideration of the OCP.

2. *Minor Project - Housing Action Program - Implementation (Bylaw 537)*

Activity:

2025-02-03 - Meeting of Tsawout and Islands Trust staffs to discuss a variety of matters (feast, ADU Bylaw referral response, OCP-LUB)

2024-10-03 - Tsawout staff suggest that feast should occur prior to MOU and may impact timing of referral response.

2024-09-19 - Referred to Tsawout

2025-05-02 - Feast with Tsawout First Nation planned for June. Anticipate bringing bylaw back following receipt of referral response following this.

Responsible

Chris Hutton

Dates

Rec'd: 10-May-2022

Target: 11-Sep-2025

3. *Major Project - Water Sustainability - coordinate multiple jurisdictions in planning for water sustainability and watershed protection.*

Activity:

Currently includes:

1. Coordination of SSIWPA;

Responsible

Oluwashogo

Garuba

William Shulba

Dates

Rec'd: 07-Jun-2012

Target: 31-Mar-2025

Active Projects Report

Salt Spring Island

2. Development of Proof of Water Bylaw:

- To be brought forward following report out on well-monitoring

3. Weston Lake Water Availability Study:

- Project completed, now working through follow-up resolutions.

4. Watershed Strategic Plan:

- May 14, 2024: Plan developed. Implementation process under consideration.

5. Ongoing well-monitoring:

May 14, 2024: Synthesizing data to target report out in next 4 months.

Sept. 6, 2022: Draft Lake Weston Study received, referred to various agencies and organizations; and to coordinate a discussion with POLIS and other groups for Water Sustainability Act considerations.

April 2022: Draft Weston Lake Study being reviewed by staff; Contract issued for phase 2 of Watershed Strategic Plan; staff seeking LTC direction on reduced SSIWPA budget.

Nov. 19, 2021: kick off meeting with Econics for phase 1 of Watershed Strategic Plan: a Situational Analysis

July 15, 2021: Signed MOU submitted to CRD for Weston Lake Study. RFP posted (Nov. 2021)

May 25, 2021: LTC approves project charter of Watershed Protection Plan

April 27, 2021: MOU approved for Weston Lake Assessment

March 11, 2021 - TC budget approve: \$75,500 special tax requisition for 2021/22

SSIWPA; up to \$80,000 from surplus funds to spend on a watershed strategic plan and

Active Projects Report

Salt Spring Island

Weston Lake Watershed Assessment

March 20, 2025 - staff have begun gathering data from well loggers for well-monitoring.

April 10, 2025 - LTC Confirmed they would like to complete proof of water bylaw consideration.

2025-05-02:

- Proof of water assigned to planner. Report to be provided in coming months as time allows.
 - Ongoing well monitoring data gathering underway.
 - SSIWPA Coordination assigned to planner with plan to re-start in coming months, in anticipation of lower application numbers or backfill of staff vacancy.
-

Future Projects Report

Salt Spring Island

1. *OCP Amendments*

Responsible

Date Received

- Review Piers Island OCP for compliance with legislative changes and make recommendations\on how to manage policy. (Dec. 2015 (Rev.02/25))
 - Marine Environment Protection (Foreshore Audit) (June 2016)
 - Add public access to lake and marine shorelines as an eligible community amenity in Section H.3.2 of the Salt Spring Island Official Community Plan (Feb. 2022)
- Updates:
- 2025-05-02:
- This list will be reviewed as part of the OCP-LUB Project and items from that project that are deemed out of scope or are ultimately considered in the revised OCP will be placed on this list for future action, as appropriate.

06-Oct-2020

2. *Land Use Bylaw Amendments*

Responsible

Date Received

Future Projects Report

Salt Spring Island

- Staff to assess regulations to provide options for an accessory use without an established principal use. (Dec. 2016, Rev. 1 Feb, 2025)
- Technical and Minor Amendments (Mar. 2017)
- Limit fence height to 2.4m; increase dock width from 1.2m to 1.5m; culverts as structures in waterbody setbacks
- Reduce Permitted Lot Coverage in Rural Upland Zones (Aug. 2018)
- Research and make recommendations to address commercial trucking and heavy equipment facilities regulation. (July 2020; Rev. 02/2025)
- Research and report on regulation of portable sawmills. (Nov. 2020; Rev. 02/2025)
- Review of the residential zoning of islets (Jul. 2022)

06-Oct-2020

3. Direct Bylaw Enforcement

Responsible

Date Received

- Bylaw Enforcement Policies (Feb. 2015)
- Short Term Vacation Rentals (STVRs) (May 2017)

06-Oct-2020

4. Administrative Processes and Procedures

Responsible

Date Received

Future Projects Report

Salt Spring Island

·Land Use Contracts (Feb. 2015)

06-Oct-2020

·Soil Removal Bylaw update (Feb. 2015)

·Improving Communications (Mine permits for aggregate pits and quarries.) (Jan. 2020)

·Adding requirement for signs in the Development Procedures Bylaw (Sep 2020)

·including discriminatory remarks and inclusion and respectful conduct language to Sec 29 Order and Decorum of Bylaw 529 (Dec 2021)

5. *Advocate*

Responsible

Date Received

·none listed

06-Oct-2020



DATE OF MEETING: July 10, 2025

TO: Salt Spring Island Local Trust Committee

FROM: Oluwashogo Garuba, A/Planner 2
Salt Spring Island Team

COPY: Chris Hutton, Regional Planning Manager

SUBJECT: Application to amend Salt Spring Island Land Use Bylaw (Rezoning)
Applicant: Janis Gauthier
Location: 154 – 164 Kings Lane Road, SSI

RECOMMENDATION

1. That the Salt Spring Island Local Trust Committee request staff to prepare a draft bylaw to amend Salt Spring Island Land Use Bylaw No. 355, 1999, to rezone LOT 2, SECTION 4, RANGE 3 EAST, NORTH SALT SPRING ISLAND, COWICHAN DISTRICT, PLAN 23507 (PLRZ20250220, 154 – 164 Kings Lane Road) from Residential 12 variant A (R12 (a)) to Residential 13 (R13).
2. That the Salt Spring Island Local Trust Committee request staff to refer to and seek input from First Nations and other relevant agencies that an application has been received to amend the Salt Spring Island Land Use Bylaw No. 355, 1999.
3. That the Salt Spring Island Local Trust Committee request staff to proceed with public notification as per Section 467 of the Local Government Act.

REPORT SUMMARY

The purpose of this report is to present to the Salt Spring Island Local Trust Committee (LTC) an application for the proposed amendments to the Salt Spring Island Land Use Bylaw No. 355, 1999 (LUB) to permit the development of a multi-family dwelling affordable housing units and a reduced minimum lot size for potential subdivision of the subject property.

This staff report examines the relevant policies (Salt Spring Island Official Community Plan (OCP) Bylaw No. 434, 2008 and the Islands Trust Policy Statement (ITPS)), evaluates the proposed rezoning in consideration of these policies, and provides recommendations on how to proceed with the application.

BACKGROUND

The Gulf Islands Seniors Residential Association (GISRA) proposes to develop 50 affordable dwelling units on the property located at 154 Kings Lane (003-106-756) to provide affordable housing units for residents of Salt Spring Island. The property is currently zoned R12 (a) in the Salt Spring Island Land Use Bylaw (LUB) No. 355, 1999, and is designated as Ganges Village Upper in the Salt Spring Island Official Community Plan (OCP) No. 434, 2008.

In 2018, GISRA submitted a rezoning application for 154 Kings Lane to allow for the creation of an affordable seniors' supportive housing complex, with accompanying medical office services and community spaces, referred to as the "Meadowlane Affordable Seniors' Residential Facility" or simply "Meadowlane." Previously, the property was zoned Residential 4 (R4) and Residential 10 (R10), and it had a housing agreement that was amended in March 2016 to replace rental housing requirements with a mix of affordable homeownership and rental units.

The property currently has a housing agreement to provide 48 units of affordable housing to seniors (65+ years of age) in Salt Spring Island. Conditions of the housing agreement includes:

- No other building or structure can be constructed unless it is part of and concurrently with the development of the land, the owner constructs and completes the 48 units of affordable housing;
- The land may not be subdivided by means of a strata plan without the approval of the Local Trust Committee (LTC);

Currently there exists a medical clinic – Salt Spring Island Health Centre and the BC Housing supportive housing facility on the subject property.

This application seeks to rezone the subject property to permit offices and affordable housing units and also to revise the existing housing agreement in order to permit the proposed uses. A new concept is being proposed and it includes the following:

- Provision of 50 affordable dwelling units;
- General offices; and
- Subdivision potential of the property with intent to retain the existing development on one lot and construct the proposed development on the other lot.

This report follows the June 05, 2025 meeting of the SS LTC where the following resolution was passed:

SS-2025-071

It was MOVED and SECONDED,

that the Salt Spring Island Local Trust Committee request staff prioritize PLRZ20250220
- 154 Kings Lane and any associated applications.

CARRIED

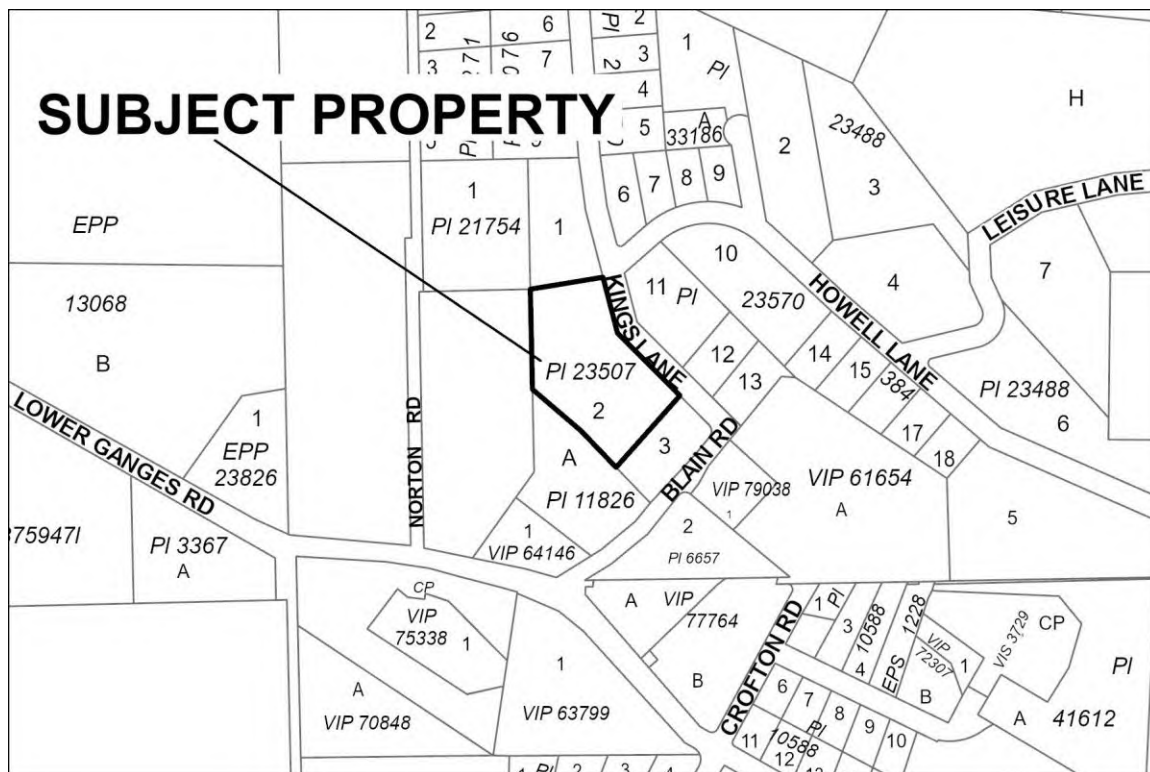


Figure 1: Subject Property Map

ANALYSIS

Policy/Regulatory

Islands Trust Policy Statement:

The following are policies contained in the Islands Trust Policy Statement (ITPS) that are considered relevant to the proposal:

Growth and Development Policy:

5.2.5 Local trust committees and island municipalities shall, in their official community plans and regulatory bylaws, address means for achieving efficient use of the land base without exceeding any density limits defined in their official community plans.

Planner comments: The subject property is located within Village designation and the maximum density for affordable housing as outlined in the OCP is 37 units per hectare. The applicant has proposed 50 affordable dwelling units and this proposal is not contrary to this directive policy as the density is not exceeded on the subject property. However, if the property were to be subdivided, the proposal becomes contrary to this policy. The applicant has proposed a subdivision with a minimum lot size of 0.11 ha (0.27 ac) and an average lot size of 0.6 ha (1.48 ac). Based on this policy, a minimum lot size of 1.35 ha (3.34 ac) is required to accommodate 50 dwelling units. Nonetheless, a higher density may be permitted through a rezoning application if the development is intended for affordable housing and is secured via housing agreement/covenant, in accordance with OCP Policy B.2.1.2.1.

Agricultural Land Policy:

4.1.6 Local trust committees and island municipalities shall, in their official community plans and regulatory bylaws, address the use of adjacent properties to minimize any adverse affects on agricultural land.

Planner comments: The subject property borders lands in the Agricultural Land Reserve (ALR) on the rear boundary; Adjacent properties include residential (East and South of subject property) and on the rear side is and commercial property. Although there is no adjacent agricultural use, the property borders land within the ALR. As such, the proposed development will be assessed to determine any potential impacts on agricultural land, including changes to natural drainage patterns or risks of water supply contamination. The application will also be referred to the Agricultural Advisory Planning Committee for their review and comments.

Freshwater Resource Policy:

4.4.2 Local trust committees and island municipalities shall, in their official community plans and regulatory bylaws, address measures that ensure:

- neither the density nor intensity of land use is increased in areas which are known to have a problem with the quality or quantity of the supply of freshwater,*
- water quality is maintained, and*
- existing, anticipated and seasonal demands for water are considered and allowed for.*

Planner comments: The subject property is located in the St. Mary Lake side of the North Salt Spring Waterworks District (NSSWD) water system and there is currently a moratorium on new water connections on properties located at this side of the water system. The subject property has a licence for two ground wells, which is sufficient for domestic use for the proposed 50 affordable dwelling units. However, the applicant will need to provide evidence of water for the other permitted structures and uses on the property in order to confirm compliance with all applicable policies. Applicant has indicated that NSSWD has agreed to provide water for fire fighting purpose despite the current moratorium for properties on this side of the water system. To ensure that the proposed development is attainable, staff advise that the application be referred to Island Health and the North Salt Spring Waterworks District for comment.

At this time, staff do not consider the application to fundamentally conflict with any of these policies. If the LTC resolves to proceed with the application, staff will conduct a Policy Statement Directives Checklist analysis in accordance with S.1.9 of Trust Council Policy 1.3.1 in a future staff report if at such time draft bylaws are presented for first reading.

Official Community Plan:

The property is designated as Ganges Village Upper (GVU) in the OCP and it is also within the Development Permit Area 1 (DPA 1) – Island villages. Future development on subject property according to the proposal will require a development permit application submitted to Islands Trust by the applicant. Staff have evaluated the application against relevant policies contained in the OCP and note several policies that relate to the proposed rezoning, but have not noted any inconsistency with the OCP at this time.

Applicable OCP policies to Housing Quantity

B.2.1.2.1 Zoning changes should be avoided if they would likely result in a larger island population than is expected under the development potential zoned in 2008. Exceptions to this policy are to be few and minor and only to achieve affordable housing and other objectives of this Plan.

Planner comments: The policy supports zoning amendments that bring about an increase in density if it is for the purpose of achieving affordable housing units, therefore this application is supported by this policy.

Applicable OCP policies relevant to Affordable Housing

B.2.2.2.3 All rezoning applications for affordable housing projects should include evidence of:

- a. need for the housing.*
- b. an adequate water supply for potability and for fire protection.*
- c. means of sewage disposal.*
- d. energy and water efficient building design.*
- e. not degrading a sensitive ecosystem.*
- f. not being sited in an area subject to hazardous conditions.*

Planner comments: The subject property does not have a sensitive ecosystem and is not located in an area subject to hazardous conditions. The applicant has provided evidence for housing need, adequate water supply for potability and fire use (evidence of potable water has been submitted as at the time of writing this preliminary report) and evidence of energy and water efficient building design. Applicant has provided evidence of means of sewage disposal – subject property is connected to the community sewer system. If applicant is however unable to provide evidence of energy and water efficient building design at this time, a covenant may be required to be registered on title which will require the document to be provided at the time of building permit application for the development of the dwelling units.

B.2.2.2.6 When the Local Trust Committee is considering a rezoning application involving a significant increase in residential density the Local Trust Committee should require that the application include provision of affordable housing.

Planner comments: The proposed rezoning is for the purpose of developing affordable housing units and therefore supported by this policy. Applicant has agreed to have a registered housing agreement on title for affordable housing.

B.2.2.2.18 Preference should be given to rezoning applications for multiple-unit affordable housing projects that:

- a. are based on the housing needs of existing residents and are not meant to be mainly marketed to off-island residents.*
- b. would provide owned or rental housing, possibly through non-traditional means such as cohousing, cooperative ownership, sweat equity projects or land trusts.*
- c. would create durable, and water and energy efficient housing.*
- d. provide walking, transit or cycling links to village services.*
- e. provide safe walking, transit, or cycling links to a school, if the project is designed for families.*
- f. include appropriate site and building designs, such as those outlined in Development Permit Area 1.*
- g. that are in or near island villages, except where the affordable housing would be linked to and support farming.*

Planner comments: The proposed development is not intended to be marketed to off-island residents as it is targeted at providing affordable housing to residents of Salt Spring (as indicated in applicant's letter of rationale – Attachment 2). This is part of the efforts to achieving the housing

needs of residents of Salt Spring Island as identified in the Housing Needs Assessment Report (Islands Trust, April 2025). The proposed development is within Island village designation and therefore further supported by this policy. At the point of development, the proposal is subject to the site and building designs applicable to DPA 1. The applicant is working on providing evidence of a durable, water and energy efficient housing, which will further prove that the proposal is not contrary to this policy.

B.2.2.2.19 The Local Trust Committee should consider changing the local zoning that applies to multi-family zones so that density is guided by floor space ratios as well as units per hectare. Such changes should be considered to provide more flexibility in the type of dwelling units that can be built

Planner comments: This policy supports changes to zoning to allow more flexibility in the types of dwelling units that can be built by considering floor space ratios alongside units per hectare. This proposal aligns well with this policy, as it supports the idea of revising the current zoning for increased flexibility in housing density.

Applicable OCP policies relevant to Ganges Village development

B.5.1.2.12 The form and character of commercial, general employment and multi-family development in Village Designations will be guided through Development Permit guidelines in Part E.

Planner comments: Future development on subject property is subject to the development permit guidelines outlined in Part E of the OCP to ensure that the development is carried out in general conformity with development permit guidelines to meet the above policy.

B.5.2.2.2 Zones within the Ganges Village Designation will continue to allow the wide range of commercial, general employment, institutional land uses and the various densities of residential development allowed by existing zoning.

Planner comments: This policy ensures that the zoning within Ganges Village continues to allow for diverse land uses, including multi-family residential developments. The proposal's multi-family housing plan aligns with the existing designation framework, supporting its integration into the broader vision of Ganges Village

B.5.2.2.3 The Local Trust Committee should consider rezoning applications that would allow the addition of some affordable and special needs housing in the Ganges Village Designation, as outlined in Section B.2.2.2.

Planner comments: The application is to permit the development of affordable housing units and therefore supported by this policy.

B.5.2.2.6 When considering rezoning applications in the Ganges Village designation, the Local Trust Committee will consider the impact that the proposed change would have on the Ganges sewer treatment plant. The Local Trust Committee should obtain confirmation from the Capital Regional District of sewage system capacity for any change to zoning within the boundaries of the sewered area that may result in a significant change in sewage volume or quality. This policy is further outlined in Section C.4.2.

Planner comments: This policy will be further analysed to determine if the proposal is consistent with this policy and staff will obtain confirmation from the Capital Regional District through the recommended referral that the proposed development would not result in a significant change in sewage volume or quantity.

Applicable policies relevant to Agricultural Land

B.6.2.2.19 When it considers rezoning applications for land that borders or drains into agricultural land, the Local Trust Committee will ensure that zoning changes are not made in a way that would have a negative effect on farming. For example, the Committee could require that a vegetation buffer be maintained on land that is being rezoned next to farm land, if the proposed use could result in conflicts with a farming operation. The Committee should also ensure that a zoning change would not result in detrimental changes to natural drainage or pollution of water supplies. The Agricultural Advisory Committee will be asked for advice about rezoning applications on land that borders or drains into agricultural land.

Planner comments: the application will be referred to Agricultural Advisory Planning Commission for comments as the subject property borders land within ALR. The proposed development needs to be assessed to establish that there are no detrimental impacts to natural drainage and pollution of water supplies.

Applicable OCP policies relevant to Potable Water Quantity and Supply

C.3.3.2.2 When considering rezoning applications, the Local Trust Committee should consider the impacts of the proposed new use on existing wells, springs, or other water supplies. If the proposed use is expected to need more water than the uses already allowed on the property, then the Committee should ask for evidence that wells or other water supplies in the neighbourhood would not be depleted. The Committee should also consider whether water use would affect agricultural activities or deplete any springs necessary to maintain fish habitat. Should a zoning change be proposed where groundwater supplies are not adequate, the applicant could be encouraged to find other means of supplying water. Rainwater catchment or a water conservation program could be considered.

Planner Comments: the LTC should consider requesting that the applicant be required to provide a preliminary water supply study in accordance with the DAI Bylaw No. 175. The purpose of this is to determine if the application is consistent with this policy.

C.3.3.2.3 The Local Trust Committee should continue to require proof of adequate potable water supply for each new lot created by subdivision.

Planner comments: Prior to subdivision approval, such as that proposed by the applicant, evidence of adequate water supply for each new lot created by the subdivision will be recommended as condition of approval to the Provincial Approving Officer. The applicant has been informed of this requirement and is currently obtaining this information. If the information provided is consistent with the OCP, then the proposal will be considered consistent with this policy. If it is not consistent, the applicant may be required to register a covenant on title to prevent further development activities until a connection to the community water system can be established.

Development Permit Areas 1 – Island Villages:

As discussed in detail above, the subject property is located within Development Permit Area (DPA) 1 - Island Villages and therefore the development of the subject property is subject to a development permit obtained from Islands Trust. The intent of this DPA is to guide the community's most significant, concentrated and visible new development so that it is compatible with existing buildings, with the natural environment and with community objectives for villages. Activities that could require a DP include:

- subdivision of land zoned for commercial, general employment or multifamily use
- subdivision of land that adjoins agricultural land or that drains into agricultural land

- installation of plastic backlit signs, of signs that do not comply with the local sign bylaw, or of signs that are to be placed more than 5 m above the ground
- new construction or alterations to existing buildings on land zoned for commercial, general employment or multi-family use if the new development is of a size that must provide off-street parking (according to the local bylaws) or if the new development would change the capacity of an existing parking lot
- development of a parking lot with more than ten spaces for commercial, general employment or multi-family residential use
- removal of vegetation within 7.5 m of agricultural land (excluding the emergency removal of a hazardous tree)
- removal of vegetation within 7.5 m of a lot line that abuts land zoned for residential or commercial guest accommodation uses (excluding the emergency removal of a hazardous tree)

B.6.2.2.21 The Local Trust Committee will use the Development Permit process to ensure that development in higher density areas such as commercial, general employment and multifamily zones remains buffered from agricultural areas, is designed to reduce conflicts with agriculture, and does not result in detrimental impacts due to water pollution or changes in the drainage regime.

Planner comment: applicant will be required in addition to the DPA 1 guidelines for development to ensure that the proposed development is buffered from agricultural land and also designed to reduce conflict with agriculture in accordance with the above policy to ensure consistency with relevant OCP policies.

Land Use Bylaw:

The subject property is zoned Residential 12 variant A (R12(a)) in the LUB. The R12 (a) zone in the LUB currently permits a seniors' supportive housing complex.

	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12
Principal Uses, Buildings and Structures												
Single-family dwellings	*	*	*	*	*	*	*	*	*	*	*	*
Duplexes	*	*				*						
Duplexes constructed before July 31, 1990							*	*	*			
Multi-family dwellings	*	*		*							*	¹
Dental and medical office services for a maximum of two medical practitioners						*	*	*	*	*		
Elementary schools, pre-schools and child day care centres						*	*	*	*			
Hospitals and public health care facilities						*	*	*	*			
Community halls						*	*	*	*			
Non-commercial outdoor active recreation	*					*	*	*	*			
Churches						*	*	*	*			
Agriculture, excluding intensive agriculture							*	*	*			
Public service uses	*	*	*	*	*	*	*	*	*	*	*	*
Seniors' supportive housing complex												²
Accessory Uses												
Home-based businesses, subject to Section 3.13	*	*	*	*	*	*	*	*	*			
Seasonal cottages subject to Section 3.14							*	*	*			

Figure 2: Permitted uses in R12 Zone

The current zone does not support multi-family dwellings and therefore GISRA will need to consider the option of a zoning amendment if the proposal is supported by policies in the OCP, hence this application.

The proposed new zone is Residential 13 (R13) and it seeks to permit 50 units of affordable housing units, general office use and reduced lot sizes for potential subdivision.

Islands Trust Conservancy :

In accordance with Islands Trust Conservancy Board Policy 3.1, the Islands Trust Conservancy (ITC) does not have covenants on the property or adjacent properties and therefore the proposal has no considerations for the ITC.

Issues and Opportunities

Traffic Impact

The application would be referred to Ministry of Transportation and Infrastructure (MOTI) for review and comment regarding any potential traffic impacts of the proposed development.

Parking

Applicant is required to provide and maintain off-street parking spaces in accordance with the Land Use Bylaw for the development of multifamily dwelling units. Each unit in the multifamily dwelling must have 1.25 automobile parking spaces and 1 automobile parking space for use by the disabled per 10 units. Hence, the applicant is required to provide 68 automobile parking spaces in total for a 50 unit complex based on the current LUB.

Potable water

The subject property is located on the St. Mary Lake side of the water system, within the jurisdiction of the North Salt Spring Waterworks District (NSSWD). Currently, NSSWD has a moratorium in place on new water connections for properties situated on the St. Mary Lake side of the system. However, the subject property has licence for two ground wells; the output of these would only meet the daily requirements for the proposed 50 dwelling units. Therefore, the applicant is required to provide evidence of potable water for the existing clinic on subject property as well as for fire protection.

Lot size:

The applicant has proposed to reduce the minimum lot size that may be created through subdivision to 0.11 ha (0.27 ac) and minimum average area of lots that may be created through subdivision to 0.6 ha (1.48 ac). However, the subject property is connected to community sewage collection system but not connected to community water system. In order to vary this lot size, the property is required to be connected to a community water system and also be compliant with policy C.3.3.2.3 of the OCP. Alternatively, the applicant may agree to have a covenant registered on title as a condition of further development, that community water service connection is obtained once the NSSWD moratorium is removed before any further development can be carried out on the lot.

Housing Agreement:

OCP Policy (B.2.2.2.6) requires the provision of affordable housing as a condition for increasing residential density. The Official Community Plan (OCP) defines affordable housing as "*rental or owned housing that can be acquired with 30 per cent of the median gross income of families or individuals on Salt Spring Island*". The Land Use Bylaw offers a slightly different definition, describing affordable housing

as a "a deed restricted and/or a rent controlled dwelling unit that is secured by a housing agreement registered on title, and may include special needs housing and seniors dwelling units"

A housing agreement would include terms and conditions mutually agreed upon by the local government and the property owner concerning the occupancy of the housing units identified in the agreement. These terms may include, but are not limited to, the following:

(a) the form of tenure of the housing units;

(b) the availability of the housing units to classes of persons identified in the agreement or the bylaw

(c) the administration and management of the housing units, including the manner in which the housing units will be made available to persons within a class referred to in paragraph (b);

(d) rents and lease, sale or share prices that may be charged, and the rates at which these may be increased over time, as specified in the agreement or as determined in accordance with a formula specified in the agreement.

Consultation

Provided that further policy analysis confirms no inconsistency with the OCP, a public hearing may not be required for this application, in accordance with section 464(3) of the Local Government Act.

Staff recommends that the application be referred to the following agencies:

Adjacent Local Trust Committees and Municipalities

Galiano Island Local Trust Committee
Mayne Island Local Trust Committee
North Pender Island Local Trust Committee
Thetis Island Local Trust Committee
Cowichan Valley Regional District

Non-Agency Referrals

BC Ambulance Service
RCMP
SSI Fire-Rescue
Salt Spring Island Coast Salish Society
North Salt Spring Waterworks District

Provincial Agencies

Agricultural Land Commission
Ministry of Agriculture
BC Assessment Authority
Ministry of Municipal Affairs
Ministry of Transportation & Infrastructure
Front Counter BC

Regional Agencies

CRD – All Referrals
CRD – Ganges Sewer Commission
Vancouver Island Health Authority
SSI Advisory Planning Commission
SSI Agricultural Advisory Planning Commission

Timeline

The following timeline is presented as an ideal and depends on the timely completion of all required conditions on the part of staff and the applicant, as well as support from LTC, community, and referral recipients. Any delay in these areas could extend the application timeline. This application timeline is due to LTC's resolution which directed staff to expedite the application and is therefore not standard for all rezoning applications.

July 10: Preliminary Review received at LTC, followed by referral and notification of intended first reading.

August (late): referral response update (any requested extension of referrals will be communicated at this time with intent to provide any final comment with third reading), draft bylaw receives first and second reading at a special electronic meeting, whose date is not yet finalized. All conditions of approval should be set at this time.

September 11: Third reading, (subject to registration of housing agreement and covenants if any on title)

September 16: Approval by Islands Trust Executive Committee approval.

September 17-19: Adoption by resolution without meeting.

First Nations

The Islands Trust reviews all applications to ensure the preservation and protection of cultural heritage, archaeological sites, and ancestral places. As reviewed, the application is consistent with respect to LTC Standing Resolutions on reconciliation. Notwithstanding, to provide applicants with awareness regarding unknown archaeological areas, staff forwarded the Islands Trust Chance Find Protocol and the provincial Archaeological Branch guidelines on Heritage Act directly to the applicants. Staff have identified the following First Nations for early engagement and referral:

- Cowichan Tribes
- Halalt First Nation
- Lyackson First Nation
- Pauquachin First Nation
- Penelakut Tribe
- Semiahmoo First Nation
- Stz'uminus First Nation
- Tsartlip First Nation
- Tsawout First Nation
- Tsawwassen First Nation
- Tseycum First Nation
- Ts'uubaa-Asatx (Lake Cowichan) First Nation

If the LTC decides to proceed, staff would notify these First Nations and request for their input on the proposed rezoning application.

Rationale for Recommendation

The recommendations on page 1 are supported as

1. The proposal appears to be consistent with the policies of the Salt Spring Island Official Community Plan No. 434 (OCP) and Islands Trust Policy Statement (ITPS).

ALTERNATIVES

1. Request further information

The LTC may request further information prior to making a decision. Recommended wording for the resolution is as follows:

That the Salt Spring Island Local Trust Committee request that the applicant submit to the Islands Trust in addition to the recommended resolution the following...

2. Deny the application

The LTC may deny the application. If this alternative is selected, the LTC should state the reasons for denial. Recommended wording for the resolution is as follows:

That the Salt Spring Island Local Trust Committee deny application PLRZ20250220 for the following reasons...

NEXT STEPS

If the recommendations are supported, staff will proceed with preparing a draft bylaw, refer to First Nations and applicable agencies and send out public notification. The application will then be returned to the Salt Spring Island Local Trust Committee (SS LTC) for further consideration.

Submitted By:	Oluwashogo Garuba, A/Planner 2	July 2, 2025
Concurrence:	Chris Buchan, Acting Regional Planning Manager	July 2, 2025

ATTACHMENTS

1. Site Context
2. Applicant's Letter of Rationale

ATTACHMENT 1 – SITE CONTEXT

LOCATION

Legal Description	LOT 2, SECTION 4, RANGE 3 EAST, NORTH SALT SPRING ISLAND, COWICHAN DISTRICT, PLAN 23507
PID	003-106-756
Civic Address	154 Kings Lane Road, SSI
Lot Size	1.44 ha (3.55 ac)

LAND USE

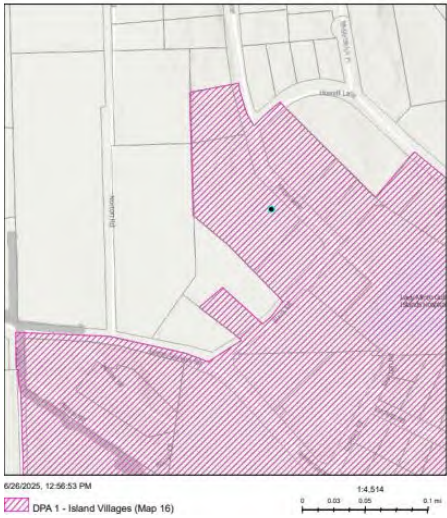
Current Land Use	Residential 12 variant a (R12 (a))
Surrounding Land Use	Residential 6 (R6) and Agriculture 1 (A1)

HISTORICAL ACTIVITY

File No.	Purpose
GB-RZ-1994.2	Information not provided
SS-BP-2009.1	Information not provided
SS-BP-2010.5	Information not provided
SS-BP-2020.21	Proposal – Seniors Multifamily independent living
SS-CL-2019.6	Water Supply for Meadowlane Complex - 154 Kings Lane, SSI
SS-DP-2013.2	Construction of 2 buildings for prof. & retail medical - 154 Kings Lane, SSI
SS-DP-2015.5	DPA1: 2-year DP Extension for King's Lane Medical Clinic
SS-DP-2019.4	Constructing a 48-Unit Seniors Facility in DPA1 - 154 Kings Lane, SSI
SS-RZ-2011.4	Rezoning C5 & R6 zoned property to allow medical clinic with accessory medical uses and residential second floor (154 Kings Lane)
SS-RZ-2018.4	Proposal to Allow for the Development of an Affordable Seniors' Residence Facility - 154 Kings Lane, SSI
SS-TUP-2009.2	Temporary Use Permit - Renewal To allow a principal use of medical office services for more than two medical practitioners and not exceeding five medical practitioners all situated within the existing building.
SS-TUP-2022.3	To allow for 20 units of temporary supportive housing - 154 Kings Lane, SSI

POLICY/REGULATORY

Official Community Plan Designations	Salt Spring Island Official Community Plan Bylaw No. 434, 2008 Designation: Ganges Village Upper – Gvu Development Permit Area 1 – Island Villages

	
Land Use Bylaw	Salt Spring Island Land Use Bylaw No. 355, 1999 – Residential 12 (R12) variant a. The following are uses permitted in R12 (a) zone: Seniors' supportive housing complex
Other Regulations	None
Covenants	196796G – Right of Way and Restrictive Covenant; CA7624178 – Assignment of Rents; CA7982286 – Covenant; CB399183 – Covenant; CB399184 – Priority Agreement
Bylaw Enforcement	SS-BE-2007.18 – Unlawful temporary shelter building

SITE INFLUENCES

Islands Trust Conservancy	The application has no considerations for the Islands Trust Conservancy
Regional Conservation Strategy	This application has no considerations for the Regional Conservation Plan.
Species at Risk	None
Sensitive Ecosystems	None
Hazard Areas	None
Archaeological Sites	None
Climate Change Adaptation and Mitigation	No additional impacts to GHG emissions anticipated because of this application.
Shoreline Classification	N/A
Shoreline Data in TAPIS	N/A

Kings Lane rezoning application – 154 Kings Lane, Salt Spring Island

PROJECT NARRATIVE

This rezoning application reflects relatively minor revisions to the existing zoning bylaw which was adopted in February 2020 (Zone Variation – R12(a)).

a. Existing uses – there are currently 2 buildings on the land:

- 1) The permanent structure is a medical clinic (the Salt Spring Island Health Centre).
- 2) The temporary structure is a BC Housing supportive housing facility.

b. Proposed uses:

- 1) The medical clinic will remain and be expanded to accommodate an increased number of doctors. We request greater flexibility regarding the types of offices permitted, so that non-medical organizations could potentially also occupy the space.
- 2) The current zoning allows ‘seniors’ supportive’ housing, which we proposed be amended to allow affordable housing generally - not limited to seniors.

We are further requesting some amendments to facilitate subdivision of the property. GISRA would retain and develop the majority of the site for affordable housing, while providing the future option of selling the medical clinic. Creating a stand-alone housing site would also have the benefit of simplifying the anticipated BC Housing funding. Further, we understand that community organizations seeking to increase the number of primary care physicians on Salt Spring Island may be interested in purchasing the property where the medical clinic is currently located.

Finally, we are requesting that the Housing Agreement be revised to accommodate the proposed uses.

Listed below are the specific requests that we are making to accommodate the above proposed uses, as well as to provide flexibility in both the new housing and clinic expansion designs.

Zoning bylaw

- Permit residential density averaging across the entire property, so that if a smaller property is subdivided and created for the clinic, the remaining property will still be entitled to the full density of 50 affordable housing units.
- Replace the “dental and medical office services” use to simply “office” and remove the maximum number of practitioners.
- Replace the “seniors’ supportive facility” use to simply “affordable housing”.
- Revise the “service club” use to “community multi-purpose” use to provide flexibility in the ability to host compatible activities.
- Remove the language around units for temporary occupancy by persons employed at the housing complex or guests.
- Increase the maximum floor area of a dwelling unit from 95 m² to 165 m² to accommodate the inclusion of some larger family units.

- Reduce the minimum average lot size for subdivision to 0.60 ha (slightly less than half of the existing 1.38ha site), with a minimum lot size of 0.11 ha.
- Revise the site servicing requirements for subdivision to allow for groundwater for the housing (for clarity, the clinic is on community water, the housing will be on groundwater, and both will be on community sewer).
- Reduce side and rear lot set-backs to 3.5m (except front lot line setback to remain 7.5m).

Housing Agreement

GISRA will draft a revised housing based on the Islands Trust template to reflect the zoning bylaw revisions proposed above, maintaining the OCP definition of affordability.

Further, we request that there be no restrictions on timing of other developments on the site as it relates timing of housing construction (see 2.1(a) of existing Housing Agreement) to accommodate the possibility that the clinic expansion proceeds prior to the housing.

- c. Proposed timing** – timing of the clinic expansion is subject to donor satisfaction of renovation/expansion design, budget and regulatory approvals. The target date for development is winter 2025-spring 2026.

Likewise the timing for the housing construction is dependent upon successful approval of BC Housing funding. We anticipate an application deadline of early fall 2025, potentially allowing a spring-summer 2026 construction start and commencement of use early-mid 2027.

d. Uses on adjacent properties

North – 159 Kings Lane – residential and commercial ISO container storage
 East – 145-151 Kings Lane (across Kings Lane) – residential
 South – corner of Kings Lane and Blain Road – residential
 West – Royal Canadian Legion and forested area of residential in the ALR

REASONS TO SUPPORT

GISRA's Kings Lane affordable housing and medical clinic proposal represents a significant contribution towards addressing two of Salt Spring Island's most critical needs – the lack of affordable housing, and the shortage of doctors in the community.

This proposal does not vary substantially from the plan as presented in the 2019-2020 rezoning, for which significant analysis was undertaken to confirm that it was consistent with OCP provisions and the Islands Trust Policy Statement.

During the rezoning process, as well as the process undertaken for approval of the Development Permit, all technical and professional reports and studies required were submitted to the Islands Trust. We respectfully request that those previous reports be accepted for the purposes of these amendments with any updates required form conditions of the Development Permit, and as such have not appended any of these reports to this application.

OCP Support

We believe this proposal is consistent with several objectives and policies in the Salt Spring Island Official Community Plan. The most relevant policies are those that relate to affordable housing and health care services, as well as those that encourage clustering of affordable housing in serviced areas close to transit routes and services in island villages. These policies supported the original zoning for seniors' affordable housing and are also relevant to a broader range of affordable housing we are now applying for. Some of the most relevant policies are listed below.

Residential Land Use and Affordable Housing Objectives and Policies:

B.2.1.1.1 - To support a mix of housing types in appropriate locations without compromising protection of the natural environment.

B.2.1.1.2 - To develop zoning that allows many different types of housing and accommodates a diverse population.

B.2.1.1.3 - To acknowledge that a framework that limits growth may restrict housing choices as supply is limited; to respond to the challenge of fostering socioeconomic diversity within such a framework.

B.2.2.1.1 - To provide opportunities for the creation of affordable, rental and *special needs housing*.

B.2.2.1.2 - To integrate affordable, rental and *special needs housing* into appropriate residential areas where community services are most accessible.

B.2.2.1.5 - To cooperate with senior governments, the Capital Regional District, housing *industry*, funding sources and community organisations to provide affordable, rental and *special needs housing* on Salt Spring Island.

B.2.2.2.3 - All rezoning applications for *affordable housing* projects should include evidence of:

- a. need for the housing.
- b. an adequate water supply for potability and for fire protection.
- c. means of sewage disposal.
- d. energy and water efficient *building* design.
- e. not degrading a sensitive ecosystem.
- f. not being sited in an area subject to hazardous conditions.

B.2.2.2.18 - Preference should be given to rezoning applications for multiple-unit *affordable housing* projects that:

- a. are based on the housing needs of existing residents and are not meant to be mainly marketed to off-island residents.
- b. would provide owned or rental housing, possibly through non-traditional means such as co-housing, cooperative ownership, sweat equity projects or land trusts.
- c. would create durable, and water and energy efficient housing.
- d. provide walking, transit or cycling links to village services.
- g. that are in or near island villages, except where the *affordable housing* would be linked to and support farming.

B.2.2.2.24 - Local service clubs, non-profit organizations and others that provide affordable, rental and *special needs housing* are encouraged to develop projects in keeping with the policies in this Section. Such groups are particularly encouraged to explore the potential for supplying a community pool of care cottages.

Health Services Land Uses – Objectives and Policies:

B.4.3.1.1 - To ensure that local land use policies support the continued development of Salt Spring Island as a healthy community.

B.4.3.1.2 - To provide appropriately zoned land in convenient locations for the community's health care facilities.

Housing Need

Housing Needs Assessments and many other housing studies undertaken for Salt Spring Island over many years have consistently shown that there has been an ongoing critical need for almost all types of affordable housing for low to moderate income households. The lack of affordable housing has been exacerbated in recent years and is now widely viewed to be a serious crisis that poses real challenges to our community's ability to sustain itself and its population.

Summarized below are key areas from the most recent Housing Needs Assessment that are particularly relevant, followed by how the proposed Kings Lane project fit with the reported need.

Islands Trust Housing Needs Assessment 2025

- **Key Findings** (p.1) – Salt Spring Island is forecast to need 821 new units of housing in 5 years, and 2,525 in 20 years.
- **Components of 20-year need** (p.3) – of the 2,525 units, 1,947 will be due to population growth. The remaining 578 are to address those in extreme core housing need (those spending 50% or more on housing), homelessness and suppressed household formation due to high housing costs.
- **Household size** (p.262) – the population is dominated by small households, with largest proportion in 2-person households (42%), followed by 1-person (31%), 3-person (12%), 4-person (9%) and 5+person (6%).
- **Household incomes** (p.264) – median household income (2020) was \$77,500, median 1-person household income was \$39,200. These incomes are between 8%-14% lower than in the CRD and 9% lower than BC averages. The report is silent on the difference between homeowner vs. renter household incomes.
- **Dwellings # bedrooms** (p.266) – there appears to be a mismatch between household size and the housing stock in terms of number of bedrooms with fewer small units than population data suggests is needed. The (more affordable) studio units typically suited to 1 person comprise only 1% of the housing stock, 1-beds typically suited to 1-2 person comprise 13%. Conversely, there are more larger units than may be needed, with 54% of the housing stock consisting of 3+ bedrooms (vs. 27% of the population in 3+ person households).
- **Tenure** (p.266) – Salt Spring has an 81% homeownership rate (19% rental), significantly lower than in the CRD (63% homeowner, 37% rental) and BC (67% and 33%), another indicator of the shortage of rental housing.

- **Affordability** (p.269) – 34% of renter households are paying more than 30% of their income on housing costs. The highest rates are for 1-person households, followed by 2-person households. This rate is very low for 3+ person households.
- **Average rental costs** (p.269) – the report indicates an average of \$1,118 for rents on Salt Spring; the source of this data point is unclear (there are no rental surveys on SSI) and appears to be underestimated based on local knowledge and observation. The report indicates these rates are 23%-25% lower than the CRD and BC respectively.
- **Core housing need** (p.271) – renter households experience all forms of housing need (suitability, adequacy, affordability) at far higher rates than homeowners (16% renters, 4% homeowners). One-person renter households form the bulk of those in core need (67%), followed by 2-person (20%), 3-person (13%).

How the Kings Lane proposal will address several of the areas of need identified

GISRA's proposal for Kings Lane is loosely defined as 'workforce housing', intended to form part of the solution to Salt Spring's affordable housing crisis. While not exclusive to any specific demographic or employment status, the proposal is located, designed and intended to be affordable to health care workers, young families, and other essential service employees.

- **Tenure** – rental housing is in very short supply, with far lower proportions of the overall rental stock than other nearby areas. Fifty units of rental housing will help fill that gap.
- **Unit type & household size** – the project is proposing to dedicate over half of the units to smaller households, where there are the largest mismatches between need and current housing supply. Below is the planned unit mix, an estimate of the household size in each unit type, and an estimate of the total number of residents that will be housed.

Unit type (# bedrooms)	# units	Household size (# residents)
Studio	8	1
1-bed	27	1-2
2-bed	12	2-3
3-bed	3	3-5
4+ bed	0	n/a
Total	50	90-91

- **Affordability** – GISRA is unable to firmly establish rental rates at this time, as they will be highly dependent on the outcome of the application to BC Housing. However, rental rates will be established at 30% of household income, regardless of unit type or household size.
- **Core housing need** – core housing need includes not only affordability (30% of income), but also includes suitability (enough bedrooms for household size/composition) and adequacy (state of repair). Again, smaller renter households are in the highest core need. Tenant selection and unit allocation procedures will help ensure units are suitable for residents, and tenants will enjoy the benefits of new units, with high quality construction and professional maintenance to ensure long-term adequacy.

Islands Trust Housing Options Toolkit:

Finally, we believe that flexibility is key when planning, designing and seeking funding for the development of affordable housing. The proposed zoning bylaw and housing agreement changes requested in this application reflect the type of changes we believe will support the preferences and requirements of various funding agencies that are critical to financing this project, while also ensuring both long-term financial viability for GISRA and affordability for the community.

This concept is specifically referenced in the Islands Trust’s Housing Options Toolkit (p.13) excerpted below:

ZONING – REVIEW OF EXISTING	
Review and amend existing land zoned for affordable and/or multi-family development	Review all existing lands zoned for affordable, seniors or similar housing and amend the zoning to be less specific or restrictive where housing either hasn't been developed or has not been developed to full zoned potential. Housing providers have said that flexibility in form is key (single large building, rowhouses, detached cottages, etc) to adapt to changing market and funding conditions during lag between zoning approval and construction start. Zoned density should be maintained, but form should be flexible.



DATE OF MEETING: July 10, 2025

TO: Salt Spring Island Local Trust Committee

FROM: Oluwashogo Garuba, A/Planner 2
Salt Spring Island Team

COPY: Chris Hutton, Regional Planning Manager

SUBJECT: Rezoning (Bylaw Amendment) from Rural (R) to Rural (R) variant F
Applicant: Jordan Litke
Location: 200 Collins Road, Salt Spring Island

RECOMMENDATION

1. That the Salt Spring Island Local Trust Committee Bylaw No. 541, cited as “Salt Spring Island Land Use Bylaw 1999, Amendment No. 2, 2024”, be adopted (PLRZ20240145, 200 Collins Road).

REPORT SUMMARY

The purpose of this report is to provide the Salt Spring Island Trust Committee (SSI LTC) with Bylaw No. 541 for consideration for adoption.

BACKGROUND

This application proposes to rezone 200 Collins Road from Rural (R) zoned land to a Rural (R) zone variant f that allows for the development of a full-time rental cottage. The application has been presented to the LTC multiple times for consideration. At the it's meeting on May 08, 2025, the LTC gave first, second, third reading to the bylaw and requested that it be forwarded to Islands Trust Executive Committee for approval. At its regular business meeting on June 04, 2025, the Executive Committee approved the referenced bylaw.

ANALYSIS

Refer to staff reports of [November 14, 2024](#) and [May 08, 2025](#) for analysis.

Issues and Opportunities

Refer to staff reports of [November 14, 2024](#) and [May 08, 2025](#) for discussion of issues and opportunities.

Consultation

Statutory Requirements

All statutory requirements have been met. See staff report of [May 08, 2025](#) for details.

Correspondence related to this application is available in the [current applications](#) section of the Islands trust website for this file.

Rationale for Recommendation

Proposed Bylaw No. 541 seeks to create a Rural zone variant f (R(f)) which will permit a full-time rental cottage on the subject property.

In giving third reading to Bylaw No. 541 at its meeting of May 08, 2025, SS LTC did not propose any conditions for the adoption of the bylaw. As the bylaw has now received Executive Committee approval, staff recommends that it be adopted.

NEXT STEPS

Should the SSI LTC adopt Bylaw No. 541, the applicant will be notified and the Land Use Bylaw adopted.

Submitted By:	Oluwashogo Garuba, A/Planner 2	June 24, 2025
Concurrence:	Chris Hutton, Regional Planning Manager	June 25, 2025

ATTACHMENTS

- 1. Proposed Bylaw No. 541

**SALT SPRING ISLAND LOCAL TRUST COMMITTEE
BYLAW NO. 541**

**A BYLAW TO AMEND SALT SPRING ISLAND LAND USE BYLAW NO. 355,
1999**

The Salt Spring Island Local Trust Committee, being the Trust Committee having jurisdiction in respect of the Salt Spring Island Local Trust Area under the *Islands Trust Act*, enacts as follows:

1. Citation

This bylaw may be cited for all purposes as “Salt Spring Island Land Use Bylaw, 1999, Amendment No. 2, 2024”.

2. Salt Spring Island Local Trust Committee Bylaw No. 355, cited as “Salt Spring Island Land Use Bylaw, 1999,” is amended as follows:

2.1 Schedule “1” – Zoning Map, is amended by changing the zoning classification for LOT 3 SECTION 3 RANGE 2 WEST NORTH SALT SPRING COWICHAN DISTRICT PLAN EPP100050 from Rural (R) to Rural variant f (R (f)), as shown on Plan No. 1 attached to and forming part of this bylaw, and by making such alterations to Schedule “1” to Bylaw No. 355 as are required to effect this change.

3. SEVERABILITY

If any provision of this Bylaw is for any reason held to be invalid by a decision of any Court of competent jurisdiction, the invalid provision must be severed from the Bylaw and the decision that such provision is invalid must not affect the validity of the remaining provisions of the Bylaw.

READ A FIRST TIME THIS 8th DAY OF MAY 2025

READ A SECOND TIME THIS 8th DAY OF MAY 2025

READ A THIRD TIME THIS 8th DAY OF MAY 2025

APPROVED BY THE EXECUTIVE COMMITTEE OF THE ISLANDS TRUST THIS
4th DAY OF JUNE 2025

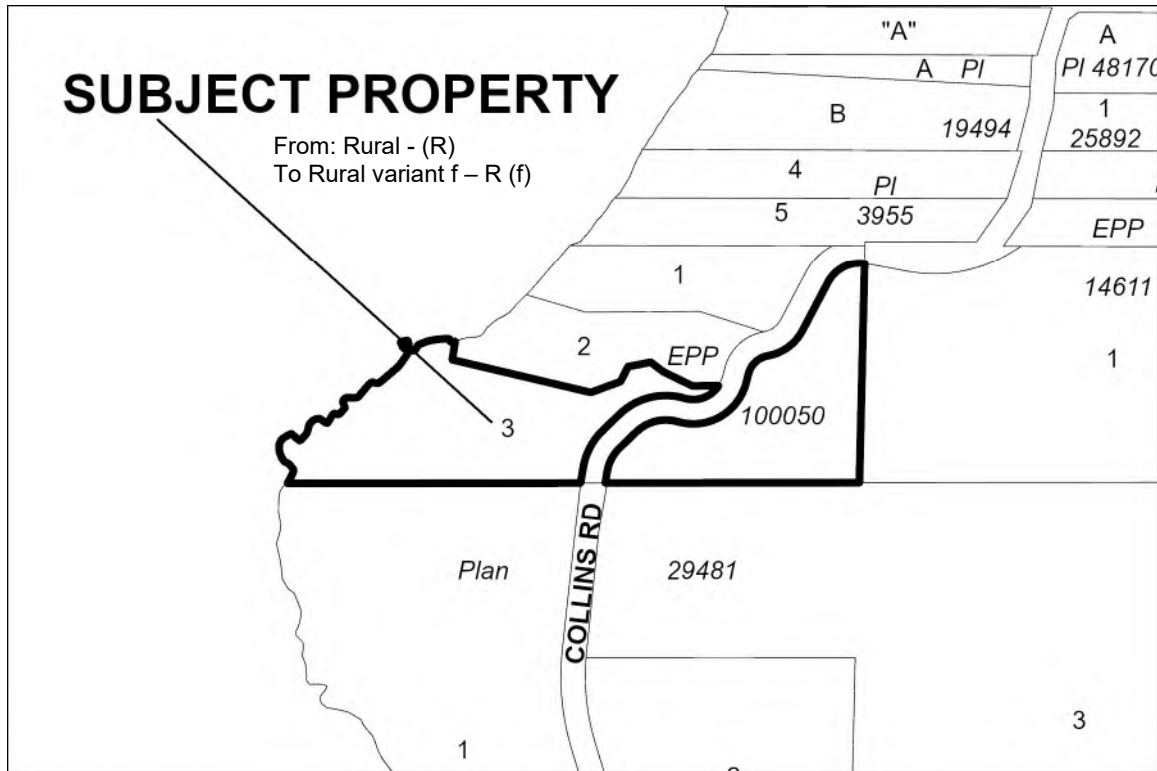
ADOPTED THIS _____ DAY OF _____ 20____

Chair

Secretary

SALT SPRING ISLAND LOCAL TRUST COMMITTEE
BYLAW NO. 541

Plan No. 1



File No.: PLDP20250189

X-Ref: SS-DP-2020.2

DATE OF MEETING: July 10, 2025

TO: Salt Spring Island Local Trust Committee

FROM: Milad Panahifar, Planner 1
Salt Spring Island Team

COPY: Chris Hutton, Regional Planning Manager

SUBJECT: Commercial Development within Development Permit Area 1
Applicant: Don Brown Architect AIBC
Location: 378 LOWER GANGES RD, SSI (023-505-249)

RECOMMENDATION

1. That the Salt Spring Island Local Trust Committee approve issuance of Development Permit PLDP20250189.

REPORT SUMMARY

The purpose of this report is to expand the Deli by 33 sq m (355.20 sq ft) and Liquor Store (for 18 sq m - 193.75 sq. ft) within a commercial area (Country Grocer) located in Development Permit Area 1 (DPA 1). The proposed expansion area is currently used for outdoor seating and is situated on an existing impermeable surface.

The application is required to substantially conform to the guidelines established for Development Permit Area 1 (DPA 1). Upon review of the submitted materials, staff have determined that the proposal does not significantly deviate from the previously approved Development Permit. The current application involves a minor addition to a larger development that was approved under an earlier permit issued by the Local Trust Committee (LTC). (SS-DP-2020.2) At the time of the original application, the LTC did not support the staff recommendation to require a lighting impact assessment, noise impact assessment, or vegetation assessment.

Given the minor nature of the proposed changes and the proposal's alignment with DPA 1 guidelines, staff recommend approval of the Development Permit PLDP20250189.

BACKGROUND

The proposal is proceeding under the requirement for a Development Permit, as the subject property is located within Development Permit Area 1 – Island Villages, which regulates form and character of commercial development. A Development Permit was previously issued for the subject property to permit the expansion of the Country Grocer, including additional space for administrative functions and reserve stock, as well as an increase in building height.

At its June 30, 2020 meeting, the Salt Spring Island Local Trust Committee (LTC) passed a resolution waiving the requirements for noise, lighting, and vegetation assessments under Bylaw No. 175 for application SS-DP-2020.2. At the subsequent meeting on July 28, 2020, the LTC confirmed that the application complied with the DPA 1 guidelines despite the absence of those assessment reports.

In comparison to the previous Development Permit, which involved approximately 400 sq m of floor area and a height increase, the current proposal (totalling 51 sq m) can be considered minor.

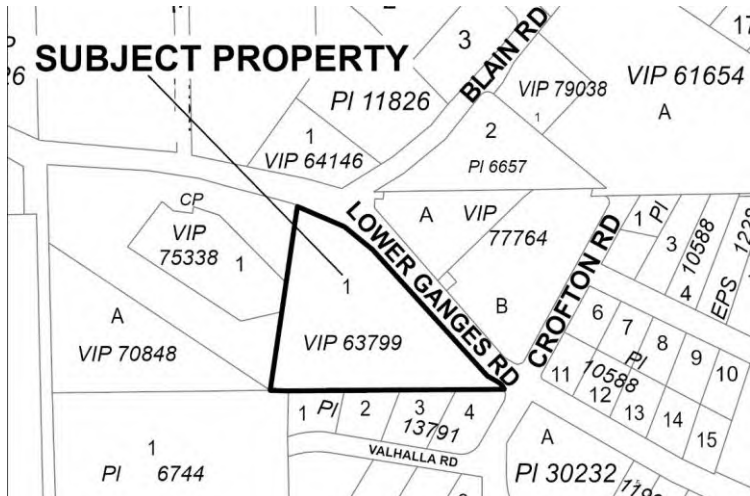


Figure 1 Location of subject property.



Figure 2 Orthophoto of subject property

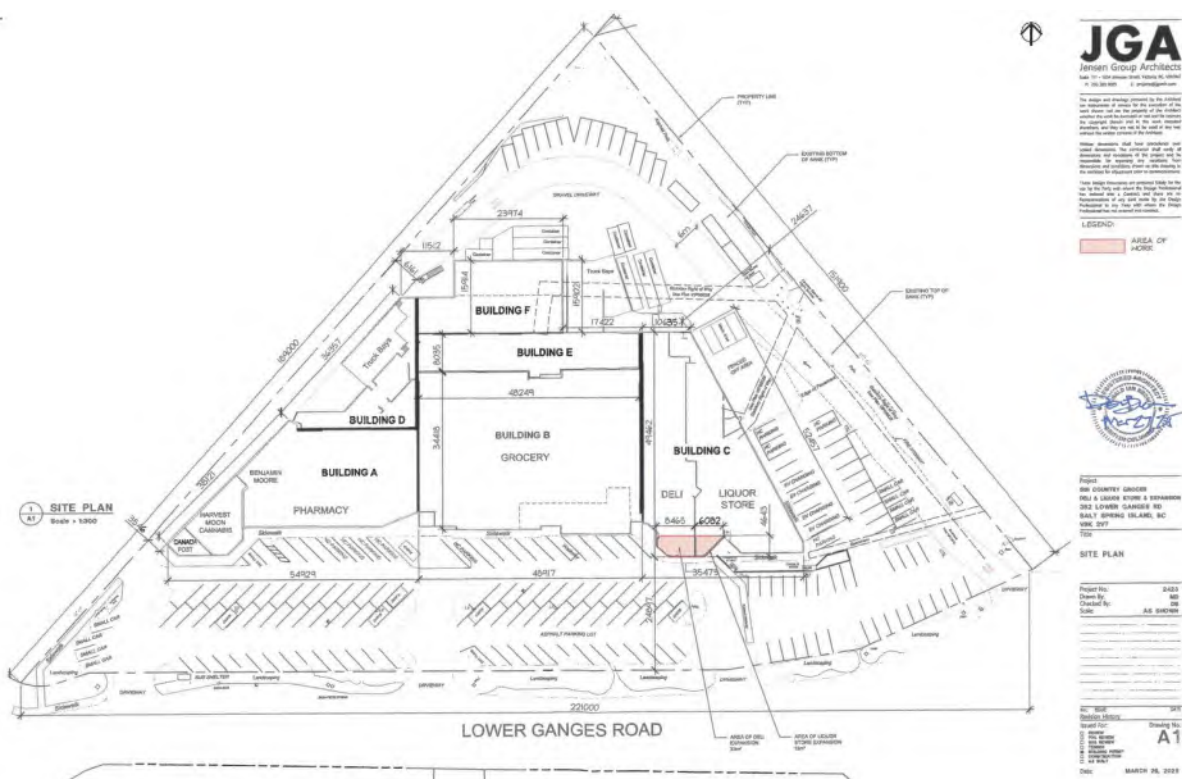


Figure 3 Proposed site plan.

ANALYSIS

Policy/Regulatory

Official Community Plan:

The subject property is designated Ganges Village Upper (GVU) in Salt Spring Island Official Community Plan Bylaw No. 434. Policies relevant to this application include:

- B.5.1.2.2** Zoning in Village Designations will continue to allow the mix of commercial, institutional, cultural, and multi-family land uses that are currently allowed. Commercial zoning should be simplified with fewer zones and a broader range of uses allowed in each. [...]
- B.5.2.2.2** Zones within the Ganges Village Designation will continue to allow the wide range of commercial, industrial, institutional land uses and the various densities of residential development allowed by existing zoning.

The subject property is contained within Development Permit Area 1 – Island Villages. Applications within this DPA must conform to guidelines established in the OCP. Staff analysis found that the proposed development satisfies the guidelines. (see **appendix 3** for a full evaluation of DPA 1 guidelines):

Land Use Bylaw:

The subject property is zoned Commercial 1 zone variant (a) – C1(a) under Salt Spring Island Land Use Bylaw No. 355. The zoning permits the following uses:

	C1	C2	C3	C4	C5	C6
Principal Uses, Buildings and Structures						
<i>Indoor retail sales and rentals</i>	♦	♦	♦			
<i>Indoor retail services, excluding Laundromats</i>	♦	♦	♦	♦		
Laundromats	♦					
<i>Outdoor retail sales of nursery plants and home gardening supplies</i>	♦	♦				
<i>Indoor production of food and drink items, clothing, crafts, artwork, jewellery and similar items for retail or wholesale sales, provided there is a retail outlet on the premises and provided water consumption does not exceed 1600 litres/day</i>	♦	♦	♦			
Offices	♦	♦		♦		
Banks and credit unions	♦	♦				
<i>Indoor commercial recreation and amusement facilities</i>	♦	♦			♦	
Restaurants	♦	♦	♦			
Churches	♦	♦				
Libraries	♦	♦				
Offices for use by building construction professionals and trades	♦	♦				♦
<i>Automobile service stations</i>			♦			
Automobile rentals with a maximum of five vehicles stored on-site	♦	♦	♦			♦
Veterinarian clinics and animal hospitals	♦	♦				
<i>Indoor commercial and vocational schools</i>	♦	♦				
Daycare centres for children, seniors, or people with special needs	♦	♦				

<i>Funeral homes</i>						♦
<i>Multifamily dwelling units</i>		♦				
<i>Commercial guest accommodation in hotels or guest houses.</i>		♦				
<i>Retail sales of building supplies, appliances and furniture</i>						♦
<i>Light industry, excluding uses that consume or use more than 1600 litres/day of water</i>						♦
<i>Wholesale sales</i>						♦
<i>Storage of goods and vehicles, with the exception of outdoor storage of derelict vehicles or equipment, or waste materials</i>						♦
<i>Boat building, servicing and repairs</i>						♦
<i>Service, repairs and sales of vehicles and equipment.</i>						♦
<i>Collection of recyclable materials, excluding outdoor sorting and storage</i>	♦		♦		♦	♦
<i>Public service uses</i>	♦	♦	♦	♦	♦	♦
Accessory Uses						
<i>Indoor retail sales accessory to another permitted use</i>						♦
<i>Dwelling units accessory to a commercial use</i>	♦	♦	♦	♦	♦	♦
<i>Restaurant accessory to another permitted use</i>					♦	
<i>Home-based businesses accessory to residential use</i>		♦				

Zone Variation -- C1(a)

- (1) The following additional use is permitted:
- (a) Retail gasoline sales occupying a maximum area of 160 square metres.
 - (b) A liquor store.

The following Land Use Bylaw regulations are also relevant to this proposal:

- 7.1.5** The required number of parking spaces need not be provided where an addition or alteration to a building or a change in its use would result in an increase of less than 10 percent of the number of spaces required, up to a maximum of 5 spaces; where an addition or alteration or change in use requires more than 5 spaces, then the number of spaces as determined by Table 3 are to be provided.

<i>Other commercial uses</i>	<i>1 per 25 sq.m. of combined floor area and outdoor sales area</i>	<i>5%*</i>	<i>1 per 250 sq.m. floor area</i>
<i>Restaurants and Liquor-primary establishments</i>	<i>1 per 3 indoor seats</i>	<i>5%*</i>	<i>1 per 250 sq.m. floor area</i>

Issues and Opportunities

Development Approvals Information Bylaw

Noise

The Islands Trust office has previously received complaints from adjacent property owners regarding excessive noise generated by rooftop cooling units. In the absence of enforceable permit guidelines, Islands Trust bylaw enforcement is limited in its ability to address such complaints. While staff do not anticipate any additional noise impacts resulting from the proposed addition (No additional rooftop equipment), the LTC may, at its discretion, request a noise assessment report.

Vegetation

No new landscaping is proposed as part of this application. The site's current condition, with less than 20% soft landscaping coverage (as required by DPA 1 Guidelines), was approved under a previously issued Development Permit. The area affected by the proposal is not currently soft-landscaped. As such, the proposal does not increase the existing non-conformity in this regard. The Islands Trust office has previously received complaints regarding the storm water runoff from the subject property. The LTC may, at its discretion, request a vegetation assessment.

Parking

Staff have not be able to carry out a full assessment of parking requirements based on Land Use Bylaw requirements. The applicant has previously submitted information that there are 227 existing parking spaces on their previous application, which staff have not been able to verify, or fully establish the number of stalls required. The proposed addition does not represent a new use, but rather an addition to an existing use. According to Table 3 of the land use bylaw, five additional parking will be required for the proposed addition, however since the required number of parking would result is an addition of less than 10% of the existing parking and the number is still less than 5 parking spaces, therefore no additional parking is requested. Parking at all times would be controlled through Land Use Bylaw Regulations.

Consultation

Notification to neighbours and public consultation are not required as part of the Development Permit application process.

Protocols

No protocols relevant to this application have been identified.

Agencies

No agencies requiring referral have been identified.

First Nations

This application has not been referred to First Nations for comment.

Rationale for Recommendation

Development Permit Areas are intended to control and guide development with a set of site-specific guidelines. In particular, DPA 1 Island Villages is intended to guide the form and character of commercial development. The DPA contains a significant list of guidelines that guide site layout, built form, landscaping, and lighting, among others.

Guidelines are in place to inform permit conditions, which in turn ensures consistent development and operation of commercial areas. After reviewing the guidelines, staff recommend approval of the development permit, because:

1. The anticipated impact to neighbouring properties is minimal.
2. The subject property is already substantially developed as a commercial shopping centre. The proposed additional is minor and will not significantly alter the appearance of the existing commercial area.
3. A review of this application has determined that over 26 of the Development Permit Area 1 (DPA 1) guidelines have been met, 16 are not applicable, and two have not been satisfied. Overall, the application is considered to be substantially in compliance with the Development Permit guidelines.

Staff recognize that the LTC has previously waived requirements for noise and lighting assessments as well as a vegetation plan for much larger application. To request the applicant to produce these assessments now would likely be viewed as an unfair request by the applicant and cause delay with approval.

ALTERNATIVES

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

1. Request further information

The LTC may request further information prior to making a decision. Staff advise that the implications of this alternative are increased processing time and potentially additional cost to the applicant. 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 Salt Spring Island Local Trust Committee request that the applicant submit to the Islands Trust an Assessment Report, completed by a qualified professional, which identifies the potential impacts of the proposed development on:

- a. local pedestrian and vehicular transportation routes and patterns;*
- b. Pre and post-development lighting impacts including mitigation measures;*
- c. Pre and post-development noise impacts including mitigation measures; and*
- d. Vegetative screening for surrounding properties.*
- e. Landscape plan and soft landscaping cover*

2. Refer to APC for Comment

A formal referral of this application to the Advisory Planning Committee (APC) would provide an additional opportunity for community feedback and input on the proposed application.

3. Deny the application

The LTC may deny the application. Staff advise that the implications of this alternative are that the applicant will be required to revise the proposal to meet DPA guidelines. If this alternative is selected, the LTC should state the reasons for denial. Note, if the decision is to deny the development permit application, the decision must be accompanied by reasons. Recommended wording for the resolution is as follows:

That the Salt Spring Island Local Trust Committee deny application PLDP20250189 for the following reasons:

- a. *That the Development Permit application does not meet the DPA 1 guidelines for the following aspects: Noise, lighting and screening.*

NEXT STEPS

If the recommended resolution is adopted, the application will be concluded with the issuance of the proposed permit and the conditions.

Submitted By:	Milad Panahifar, Planner 1	July 2, 2025
Concurrence:	Chris Buchan, Acting Regional Planning Manager.	July 2, 2025

ATTACHMENTS

1. Site Context
2. OCP Policies
3. DPA Guidelines
4. Draft Development Permit
5. Project Narrative

SS-BP-2011.12	Rejected. Requires amendment to SS-DP-03-1998
SS-BP-2012.32	Temporary addition to existing covered walkway (commercial) - 374 Lower Ganges, SSI
SS-DP-1990.25	
SS-DP-1990.9	
SS-DP-1998.3	GVM Addition
SS-DP-2008.6	Approved
SS-DP-2010.1	Roof access structure and internal reallocation of space
SS-LCB-2019.5	Proposal to Operate a Non-Medical Cannabis Retail Store
SS-RZ-1999.3	To rezone property from Residential 1 (R1) and Commerical 1-A (C1-A) to Commercial 1 for the purpose (closed)
SS-RZ-2002.2	Withdrawn
SS-RZ-2002.3	Proposed expansion of Ganges Village Market - initially to rezone from R1 to C1a (closed)
SS-TUP-1990.5	
UN-RZ-1988.8	

POLICY/REGULATORY

Official Community Plan Designations	Ganges Village Upper (GVU) Development Permit Area 1 – Islands Villages
Land Use Bylaw	Bylaw No. 355 Salt Spring Island
Other Regulations	Within NSSWWD A referral to NSSWWD will be required on the other DP application based on the scale.
Covenants	SRoW: EN19135 (BC Hydro) EN19136 (BC TEL) Easement: EV105625 (Strata)
Bylaw Enforcement	SS-BE-2011.17: Previous BE file for noise related to noise generated by rooftop cooling system. File closed 2011. SS-BE-2021.113: There is an active bylaw enforcement file related to siting of retaining wall on the property and 127 Valhalla Road. A retaining wall has been constructed across both properties. It was built within the CRD right-of-way (ROW) without prior authorization. As a result, if a covenant is proposed to allow the upper property at 374 Lower Ganges Road to benefit from the retaining wall, the Capital Regional District (CRD) may need to be a co-signatory to the agreement.

SITE INFLUENCES

Islands Trust Conservancy	Not applicable, referral to ITC not required.
Regional Conservation Strategy	Not identified as priority for conservation.
Species at Risk	None mapped.
Sensitive Ecosystems	None mapped.

Hazard Areas	Moderate risk areas identified.
Archaeological Sites	Remote Access to Archaeological Data (RAAD) information indicates archaeological potential noted within the property and within 100 metres. 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 <i>Heritage Conservation Act</i> . If such material is encountered during development, all work should cease and Archaeology Branch should be contacted immediately as a <i>Heritage Conservation Act</i> 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	Proposed development not anticipated to be impacted by anticipated or possible climate change induced hazards, eg sea level rise.
Shoreline Classification	Not Applicable
Shoreline Data in TAPIS	Not Applicable

ATTACHMENT #2 – POLICIES

SALT SPRING ISLAND OFFICIAL COMMUNITY PLAN

OCP Objective/Policy	Complies	Planner Comments
B.2.3.2.3 Village containment boundaries for Ganges, Fulford and Channel Ridge Village are identified by the Village Designations on Map 1. The intent of village containment boundaries is to keep village development compact, and prevent 'leap frog' development, reduce the need for additional infrastructure and services, minimize the loss of rural lands, and minimize impacts on sensitive ecosystems and other environmentally sensitive areas. The Local Trust Committee should not approve rezoning applications that would allow large new commercial, institutional or multifamily development outside Village Designations. Exceptions should be made for new village or hamlet applications, for applications to provide affordable housing, for neighbourhood convenience stores and for home based businesses as outlined in Section B.3.2. Expansion or extension of containment boundaries should only be considered where there are no available sites within the containment boundaries. Any such expansion or extension should incorporate land next to an existing boundary, lands which do not contain sensitive ecosystems, lands which do not exhibit geo-technical or other hazards, lands that are along existing transportation routes, and lands which can provide efficient access to potable water and other services.	yes	Proposal supports commercial activity within specified Ganges Village area.
B.5.1.1.2 To encourage a modest scale of village development compatible with the rural character of Salt Spring Island and with the protection of the community's natural and heritage resources.	yes	Proposal is consistent with existing scale of development in Village Designation.
B.5.1.1.3 To encourage the commercial viability of island villages and to retain traditional village functions.	Yes	Proposal supports commercial activity within island village area.
B.5.1.1.6 To ensure that village land uses continue to focus on the requirements and convenience of residents and that	Yes	Proposal supports commercial activity within island village area, supports convenient access for residents.

traditional village functions are not displaced.		
B.5.1.2.3 To protect the economic vitality of island villages, the Local Trust Committee should not consider rezoning applications that would result in large new retail stores, restaurants, office complexes and multi-family developments outside Village Designations. Exceptions are: home-based businesses and industries, neighbourhood convenience stores, campgrounds, the commercial uses specifically allowed in other Designations and the potential development of a new village as outlined in Policy B. 2.3.2.2.	yes	Expanded commercial activity within Village area.
B.5.1.2.12 The form and character of commercial, industrial and multi-family development in Village Designations will be guided through Development Permit guidelines in Part E	Yes	The application is considered to be substantially in compliance with the Development Permit guidelines.

APPENDIX #3–DEVELOPMENT PERMIT AREA GUIDELINES

ATTACHMENT 3

DEVELOPMENT PERMIT AREA 1 – ISLAND VILLAGES

Guideline	Complies	Comments
E.1.4 Guidelines for General Site Design, Building Location and Access		
General Guidelines		
E.1.4.1 All commercial, industrial and multifamily sites should be designed to reduce impacts on neighbouring properties, on-site residential areas and public places, including the sea. Particular attention should be paid to locating and screening loading docks, waste containers, propane tanks, air-conditioning units and other service areas to reduce noise and visual impacts. This guideline is particularly important for development next to schools and hospitals.	N/A	Staff Comments: Applicant has not provided evidence of any screening measures to reduce noise or visual impacts on neighboring properties. However no further loading dock, waste container, propane tanks and air conditioners are being proposed as the result of proposed development since the previously issued DP. Permit area is currently used for outdoor seating space. A Post-development noise and screening assessments may be requested by the LTC at their discretion.
E.1.4.2 All commercial, industrial and multifamily developments should be designed so that the obstruction of views from neighbouring properties is minimized.	Yes	Staff Comments: Views from neighboring properties are not anticipated to be obstructed by this application.
E.1.4.3 Additions to existing commercial and multifamily buildings should maintain the existing building setbacks from the street, unless such setbacks are markedly different from the general neighbourhood pattern.	Yes	Staff Comments: Existing setbacks will be maintained
E.1.4.6 Commercial developments should provide structures for the convenient and secure parking and locking of bicycles, close to and visible from the adjacent streets. Such structures should not obstruct pedestrian movement on the site.	Yes	Staff Comments: Application does not propose an increase in the number of bicycling racks. Bicycle racks currently available on site.
E.1.4.8 Where possible, buildings should be sited and designed in a way that maximizes solar gain and reduces energy loss. Obstruction of solar gain on surrounding properties should be minimized.	Yes	Staff Comments: Proposal is further developing established patterns of use on the site. Solar gain is acceptable given the location constraints of the site. No further changes since the previously approved DP.
Guidelines For Specific Village Locations and Situations		
E.1.4.11 To avoid the appearance of strip development along Lower Ganges Road in Ganges Village, new developments with frontage on Lower Ganges Road north of Upper Ganges Road should be setback 7.6 m from Lower Ganges Road and should maintain an effective vegetation screen	Yes	Staff Comments: No changes to the existing vegetation screening which was confirmed in a previously issued Development Permit.

between structures or parking lots and the road, with minor breaks for access only. Where no other frontage exists, buildings should be oriented inward around a central court. Where a secondary frontage exists with access to Lower Ganges Road, building access should be from the secondary frontage, and building orientation should be either inward or oriented to the secondary frontage. Where commercial parcels lie between Lower Ganges Road and a residential street, all access should be developed from Lower Ganges Road, to buffer the residential area from commercial traffic. Additions to existing commercial development along Lower Ganges Road should use special creative efforts to avoid continuance of the existing "strip mall" appearance. Parking and shop fronts should be screened from Lower Ganges Road with generous landscaping buffers and islands. Use of designs that face the interior of the parcel with an inner court and using scales of traditional village streetscapes should be considered.		
E.1.4.16 All development in the Ganges Village and Fulford Harbour Village Designations should be located so as not to interfere with existing harbour views from public areas and roadways. Particularly important harbour views to be preserved in Ganges include those from Upper and Lower Ganges Roads, the foot of Park Drive, Rainbow Road and Fulford-Ganges Road, Centennial Park and Gasoline Alley. Views to be preserved in Fulford Harbour include those from Fulford-Ganges Road and from Beaver Point Road.	Yes	Staff Comments: Proposed development does not interfere with existing harbor views.
E.1.5 Guidelines for Offstreet Parking Lot Location and Design		
E.1.5.4 Offstreet parking spaces should not be located so that cars must exit or manoeuvre by backing over a sidewalk or other pedestrian route.	Yes	Staff Comments: Development would not impact parking circulation.
E.1.5.7 Part of the parking required for commercial developments could be located in a parking lot on another property, provided the following conditions are met besides the ones listed above: a. The offsite parking lot is within a convenient walking distance (up to about a half a kilometre) of an entrance to the building it serves. Larger parking lots in the Ganges Village Core should be located to the west of Jackson Avenue.	Yes	Staff Comments: , The proposal does not include any changes to the parking arrangement previously approved under an earlier Development Permit.

b. Offsite parking lots for commercial uses are to be located on properties that are immediately next to the commercial use or on more distant properties zoned for non-residential use. c. Offsite parking lots must be exclusively dedicated and secured with a legal agreement that is in place before issuance of a building permit and continues for the life of the building served. d. Parking spaces for the disabled are not to be located offsite. e. Signs showing the location of offsite parking should be clearly visible from streets next to the building being served. Such signs may not be necessary if the offsite parking lot is to be used primarily by tenant employees as a condition of lease.		
E.1.5.9 Parking should only be at ground level or below.	Yes	Staff Comments: All current parking is at ground level.
E.1.5.10 Areas should be provided for the loading and unloading of trucks. Sites should allow delivery trucks to manoeuvre without having to block or back onto an adjacent street, parking aisle or pedestrian route. Emergency vehicles should be able reach all parts of the development easily.	Yes	Staff Comments: Area provides loading dock area for unloading of delivery trucks. Application has not been circulated for comment on emergency vehicle access.
E.1.6 Guidelines for Building Form		
E.1.6.1 Building height should be in keeping with local bylaws and neighbouring structures. If a third storey is allowed by zoning for residential use, it should be located as a half storey. In such a situation, a building height variance up to 10.6 m could be requested, provided other design aspects work to reduce the apparent mass of the structure.	Yes	Staff Comments: The proposed addition is not exceeding the height limits.
E.1.6.2 Horizontal building modulation and articulated facades should be used to reduce the apparent mass of buildings facing the street. They should create a pedestrian scale and interest along adjacent sidewalks and along the Ganges Public Pathway System. To enhance village vitality, consideration should also be given to creating secondary retail frontage along arcades and at the rear of buildings. These ideas should especially be considered where buildings are next to the Ganges Public Pathway System.	Yes	Staff Comments: Building addition follows the same pattern as the existing development.
E.1.6.4 Existing site topography and landscape should not be significantly altered and should be complemented by proposed structures.	Yes	Staff Comments: Site topography is not proposed to be altered by proposed addition.
E.1.6.7 The existing "rhythm" of buildings	Yes	

along street frontages should be respected. Buildings that replace existing structures should retain the original width of the front elevation and the spacing between buildings. In Fulford Harbour particularly, the size, spacing, front elevation width and orientation of buildings along Fulford-Ganges and Morningside roads should be retained by any new development.		Staff Comments: Proposed addition does not affect the existing rhythm of buildings.
E.1.6.8 In Ganges Village, new development along Lower Ganges Road north of Upper Ganges Road, should be massed with articulation and rhythms similar to existing non-commercial development. The development of a commercial strip appearance along the road should be avoided.	Yes	Staff Comments: Building addition follows the same pattern as the existing development.
E.1.6.9 Landmark buildings should not be created in island villages.	Yes	Staff Comments: Not a landmark building.
E.1.6.11 All roof-top mechanical equipment (satellite dishes, air-conditioning) should be screened from view.	N/A	Staff Comments: No additional roof-top equipment is proposed.
E.1.6.12 Large areas of curtain-wall glazing should not be used.	Yes.	Staff Comments: Curtain-wall glazing not proposed.
E.1.6.13 The use of handcrafted doors made by local artisans is encouraged.	N/A	Staff Comments: No additional doors for the extended section is proposed.
E.1.6.14 The use of imaginative, handcrafted products of local craftspeople is encouraged. In Fulford Harbour Village particularly, natural and "found" materials should be incorporated into exterior details by local artisans, in keeping with existing development. More conventional or formal materials should be avoided.	No	Staff Comments: Not proposed as part of development.
E.1.6.15 A pleasant pedestrian environment in villages should be enhanced by pedestrian-oriented features.	No	Staff Comments: Pedestrian environment is not proposed as part of development.
E.1.6.17 All portions of a building should be authentic, functional space - artificial or contrived architectural features (for example, artificial lighthouses, windmills or turrets) should not be included in building designs.	Yes	Staff Comments: No artificial architectural features are proposed.
E.1.6.19 Large new developments should have their electrical and telephone connections provided underground.	Yes	Staff Comments: Connections to site already established.
E.1.6.20 Facilities should be provided for convenient, barrier-free access for the disabled.	Yes	Staff Comments: Elevator access to second floor is already provided.
E.1.7 Guidelines for Landscaping and Parking Surfaces		
E.1.7.1 Informal, natural landscaping that gives a native appearance is encouraged as opposed to formal, decorative plantings.	N/A	Staff Comments: No new landscaping is proposed as part of this application. The proposed addition is minor (51 Sq m), and the area it affects is not currently soft-

Hard surfacing should not be used as a substitute for vegetation.		landscaped, having been previously approved under an earlier Development Permit. A vegetation assessment may be requested by the LTC at their discretion.
Q m)	N/A	Staff Comments: No new landscaping is proposed as part of this application. The proposed addition is minor, and the area it affects is not currently soft-landscaped, having been previously approved under an earlier Development Permit. A vegetation assessment may be requested by the LTC at their discretion.
E.1.7.4 Landscaping should be used to as an integral part of developments and should help in the function and organization of a site; to create the sense of entry into buildings and to define and enliven public spaces. While screening of unattractive building features is important, landscaping should be designed to ensure a broader function.	N/A	Staff Comments: No new landscaping is proposed as part of this application. The proposed addition is minor (51 Sq m), and the area it affects is not currently soft-landscaped, having been previously approved under an earlier Development Permit. A vegetation assessment may be requested by the LTC at their discretion.
E.1.7.5 Soft landscaping should cover a minimum of 40% of parcel areas in multifamily residential developments and at least 20% of the parcel area in commercial and industrial developments. Developments that provide special needs housing or affordable seniors' supportive housing may have a reduced area of soft landscaping if necessary to accommodate special facilities, providing that neighbouring properties are buffered by a vegetation screen and that parking lots are landscaped as outlined in Guideline E.1.7.16. The area calculated as soft landscaping does not include parking areas, vehicle lanes and manoeuvring areas, private open space and adjacent boulevards on public lands.	N/A	Staff Comments: No new landscaping is proposed as part of this application. The site's current condition, with less than 20% soft landscaping coverage, was approved under a previously issued Development Permit. The area affected by the proposal is not currently soft-landscaped. As such, the proposal does not increase the existing non-conformity in this regard. The LTC may, at its discretion, request a vegetation assessment.
E.1.7.6 All landscaping work on major new developments should meet the British Columbia Landscape Standard published by the British Columbia Society of Landscape Architects and the British Columbia Nursery Trades Association and should be covered by a performance bond for a period of one year from the date of final installation, in order to ensure survival or replacement of plantings. All landscaping should be maintained in perpetuity.	N/A	Staff Comments: The proposal does not involve a major new development (51 sq m of area to be added to already existing commercial) The area affected by the proposal is not presently soft-landscaped. A vegetation assessment may be requested by the LTC at their discretion.
E.1.7.7 All hard and soft landscaping and paving, including sidewalks, pedestrian amenities, street furniture, cycle racks and parking lot lines on major new developments should be installed prior to issuance of any building occupancy permit. A letter of credit should be deposited for an amount equal to 150% of the cost of the	N/A	Staff Comments: The proposal may not be considered as major new development.

work to be completed.		
E.1.7.8 Plant materials should be chosen with a view to conserve water.	N/A	Staff Comments: No landscaping plan has been supplied. Also no additional plants are being proposed.
E.1.7.9 Landscaping next to creeks within villages should be left natural and wild to retain fish habitat. Species with a high water demand or that may require the use of pesticides or fertilizers should not be located in this area. Bark mulches and impermeable landscape fabric should not be used. Landscaping should be consistent with guidelines in Development Permit Area 4.	Yes	Staff Comments: Subject property is adjacent to riparian area. No indication that the proposed development will impact this area (Already impermeable). Landscaping not proposed.
E.1.7.10 Special care should be taken to retain existing vegetation and incorporate it into new development. Particular attention should be paid within Channel Ridge Village to the preservation of Garry Oak and Arbutus trees and to the unique habitat that surrounds them.	Yes	Staff Comments: Proposal does not contemplate removal of any existing vegetation.
E.1.7.11 Other existing natural site features such as rock formations and ground contours should be preserved.	Yes	Staff Comments: Proposal does not contemplate any alteration of any natural features.
E.1.7.12 Care should be taken to ensure that new landscape features enhance, but will not block existing ocean views from roads and public areas as they mature.	Yes	Staff Comments: Proposal does not contemplate any changes to landscaping.
E.1.7.16 Parking lots should be carefully landscaped to screen them from adjacent streets and land uses, to provide shade and to avoid large expanses of uninterrupted asphalt. The following landscape guidelines apply specifically to parking lots, including off-site parking lots: a. Parking lots with street frontage should be screened by a landscaped strip with a minimum width of 3m. The perimeter of parking lots should also be screened with a minimum width of 2 m. b. Parking lots with more than 10 spaces should include interior landscaping islands and peninsulas that occupy at least 5 per cent of the lot area besides the street frontage and perimeter strips. Irregular shapes of parking islands are encouraged, especially those incorporating existing vegetation naturally and informally. c. Reductions in parking space requirements may be requested to accommodate adequate parking lot landscaping. d. The use of permeable parking materials such as "hard grass" is strongly encouraged to soften the visual effect of parking lots	Yes	Staff Comments: The proposal does not involve changes to the parking scheme that was approved under a previously issued development permit. No additional screening of parking area is proposed and The proposed addition is not of a scale that would require the provision of additional parking. A vegetation assessment may be requested by the LTC at their discretion.

and minimize changes to site drainage.		
E.1.7.17 Parking lots should be surfaced and lined before issuance of an occupancy permit to ensure efficient use. Alternatives to paving such as interlocking or permeable pavers are encouraged. Unpaved parking lots may be considered in some locations provided lots have less than 10 spaces and other techniques are used to ensure efficient use. Unpaved parking lots are encouraged in Fulford Harbour Village. Driveways providing access to multifamily developments should employ speed control devices at entries.	Yes.	Staff Comments: The proposal does not involve changes to the parking scheme that was approved under a previously issued development permit. The proposed addition is not of a scale that would require the provision of additional parking.
E.1.8 Guidelines for Lighting		
E.1.8.1 Lighting of commercial and industrial sites should be kept to the minimum necessary for pedestrian safety and visibility. A low level of light should be maintained in the night time atmosphere of villages. Lighting in parking lots should be adequate for security purposes.	N/A	Staff Comments: The addition does not involve further outdoor lighting.
E.1.8.2 Light fixtures on commercial and industrial sites should be carefully chosen to focus light on the area to be illuminated. The spillage of light into onsite residential areas, neighbouring properties, streets or other public areas including the sea should be avoided. Fixtures should not result in glare when viewed from residential areas that overlook villages.	N/A	Staff Comments: The addition does not involve further outdoor lighting.
E.1.8.3 Light fixtures should be simple and unobtrusive in design. The use of indirect lighting mounted on the fronts and sides of village buildings is encouraged.	N/A	Staff Comments: The addition does not involve further outdoor lighting.
E.1.8.4 Incandescent fixtures are preferred	N/A	Staff Comments: The addition does not involve further outdoor lighting.
E.1.8.5 Light fixtures mounted on masts or walls should be pedestrian in scale and should not exceed 3.5 m in height.	N/A	Staff Comments: The addition does not involve further outdoor lighting.
E.1.8.7 Flashing or strobe lights should not be used to attract attention to commercial uses.	N/A	Staff Comments: The addition does not involve further outdoor lighting.



PROPOSED

SALT SPRING ISLAND LOCAL TRUST COMMITTEE DEVELOPMENT PERMIT PLDP20250189

ATTACHMENT 4

TO: Cathay Western Properties LTD., INC. NO. 687282

1. This Permit applies to the land described below and all buildings, structures, and other developments therein:

PID: 023-505-249
LOT 1 SECTION 3 RANGE 3 EAST NORTH SALT SPRING ISLAND COWICHAN
DISTRICT PLAN VIP63799
2. This Permit is authorized in accordance with the following schedule attached to and forming part of this Permit as signed and dated by the Deputy Secretary of the Islands Trust:

Schedule 'A': Architectural Form "Site Plan"
"Building plans"
3. This Permit is subject to the following conditions:
 - 3.1 **Site Layout, Parking, and Grading**
The general site layout, parking, and grading shall be in substantial accordance with Schedule 'A'.
 - 3.2 **Buildings and Structures**
The form, exterior design, materials, colours, and finish of all buildings shall be in substantial accordance with Schedule 'A'.
4. The land described herein shall be developed in substantial accordance with the terms, conditions and provisions of this Permit and in accordance with Schedule 'A', attached to and forming part of this Permit, as signed and dated by the Deputy Secretary of Islands Trust.
5. This is not a Building Permit, nor does it remove any obligation on the Permittee to obtain other approvals necessary for the lawful completion of the development.
6. Any further development, redevelopment, or any changes to this permit may require a new Development Permit.

**AUTHORIZING RESOLUTION PASSED BY THE SALT SPRING ISLAND LOCAL TRUST COMMITTEE
THIS XX DAY OF XXX, 202X.**

Deputy Secretary, Islands Trust

Date of Issuance

**IF THE DEVELOPMENT DESCRIBED HEREIN IS NOT COMMENCED BY THE XX DAY OF XXX, 202X
THIS PERMIT AUTOMATICALLY LAPSES.
SALT SPRING ISLAND LOCAL TRUST COMMITTEE**

PLDP20250189

SCHEDULE 'A'

(Attached)

PROPOSED

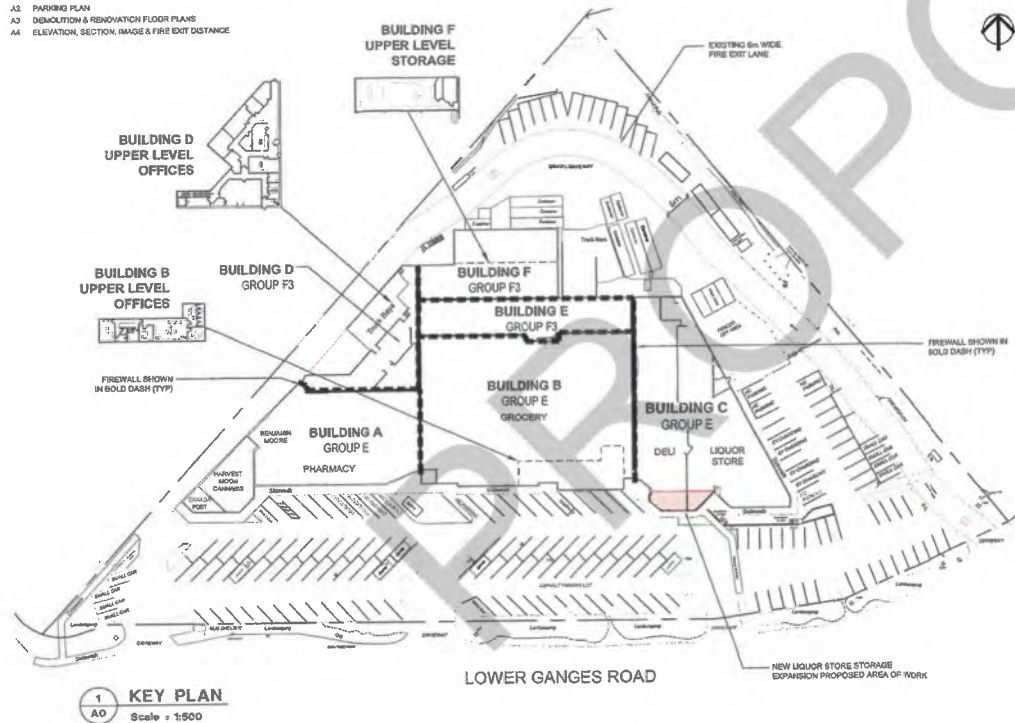


SSI COUNTRY GROCER DELI EXPANSION GANGES, SALTSRING ISLAND DESIGN DEVELOPMENT MARCH 26, 2025



LIST OF DRAWINGS

ARCHITECTURAL	
A0	LOCATION PLAN, PROJECT DATA, CODE ANALYSIS & LIST OF DRAWINGS
A1	SITE PLAN
A2	PARKING PLAN
A3	DEMOLITION & RENOVATION FLOOR PLANS
A4	ELEVATION, SECTION, IMAGE & FIRE EXIT DISTANCE



AREAS :		
BUILDING	GROUP	EXISTING AREA
LOWER FLOOR		
BUILDING A	E	967 M ² (10,409 FT ²)
BUILDING B	E	1,708 M ² (18,386 FT ²)
BUILDING C	E	1,885 M ² (20,379 FT ²)
BUILDING D	F3	221 M ² (2,379 FT ²)
BUILDING E	F3	413 M ² (4,446 FT ²)
BUILDING F	F3	480 M ² (5,167 FT ²)
BUILDING F SHIPPING CONTAINERS	F3	143 M ² (1,539 FT ²)
TOTAL LOWER FLOOR / GROSS AREA		5,017 M ² (54,003 FT ²)
MEZZANINES / UPPER FLOOR		
BUILDING B	D	151 M ² (1,625 FT ²)
BUILDING D	D	387 M ² (4,173 FT ²)
BUILDING F	F3	184 M ² (1,980 FT ²)
TOTAL MEZZANINE / UPPER FLOOR		732 M ² (7,879 FT ²)

TOTAL GROUP E (RETAIL)	3,981 M ² (42,851 FT ²)
TOTAL GROUP D (OFFICES)	548 M ² (5,890 FT ²)
TOTAL GROUP F3 (STORAGE)	1,220 M ² (13,200 FT ²)

BUILDING C EXPANSIONS		
BUILDING	USE	GROUP
DELI	RETAIL	E
LIQUOR STORE	RETAIL	E
TOTAL EXPANSIONS		51 M ²
NEW BUILDING AREA SUBTOTAL		5,017 + 51 = 5,072 M ²
EXISTING LOT AREA		15,838 M ²
NEW % LOT COVERAGE (MAX 75%)		32.1%

PROJECT DATA		
OWNER:	19123 ENTERPRISES LTD, COUNTRY GROCER	
CIVIC ADDRESS:	382 LOWER GANGES ROAD, SALT SPRING ISLAND, BC, V8K 2V7. P.I.D. 023-605-248	
LEGAL DESCRIPTION:	LOT 1, PLAN V163798, SECTION 3, RANGE 3E, COWICHAN LAND DISTRICT PORTION, SALT SPRING ISLAND	
PROJECT DESCRIPTION:	* EXPAND DELI & LIQUOR STORE AREA TO OCCUPY CURRENT OUTDOOR SEATING SPACE	
CODE ANALYSIS		
BC BUILDING CODE 2024 PART 3		
MAJOR OCCUPANCY: BUILDING C - GROUP E		
CODE REF	REQUIRED	PROVIDED
3.2.2.70	* GROUP E, UP TO 2 STOREYS * 2 STOREY, FACING 2 STREETS * MAX. 1,800 M² * COMBUSTIBLE OR NON-COMBUSTIBLE * NO CHANGE IN OCCUPANCY LOAD	* 2 STOREY * 2 STOREY, FACING 2 STREETS * 1,138 M² * COMBUSTIBLE & NON-COMBUSTIBLE * NO CHANGE IN OCCUPANCY LOAD
3.2.5.1. 2)	DELI LOCATION OF EXITS: * 2 REQUIRED * EXIT DISTANCE MAX. 40M	* 2 PROVIDED * 34.2M
3.2.5.1. 2)	LIQUOR STORE LOCATION OF EXITS: * 2 REQUIRED * EXIT DISTANCE MAX. 40M	* 2 PROVIDED * 20.2M

JGA
Jensen Group Architects
Suite 111 - 1014 Johnson Street, Victoria, BC V8W 2H7
P. 250 360 9009 E. jga@jga.com

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LEGEND:
***** FIRE SEPARATION
AREA OF WORK



Project
SSI COUNTRY GROCER
DELI & LIQUOR STORE & EXPANSION
382 LOWER GANGES RD
SALT SPRING ISLAND, BC
V8K 2V7
Title
LOCATION PLAN, KEY PLAN, CODE ANALYSIS

Project No.: 2423
Drawn By: MD
Checked By: DS
Scale: AS SHOWN

No. 1010
Revision History
Issued For: Drawing No.: A0
Date: MARCH 26, 2025

COPY



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Unless dimensions shall have precedence over scaled dimensions. The contractor shall verify all dimensions and conditions of the project and be responsible for reporting any variations from dimensions and conditions shown on this drawing to the Architect for adjustment prior to commencement.

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LEGEND:

AREA OF WORK

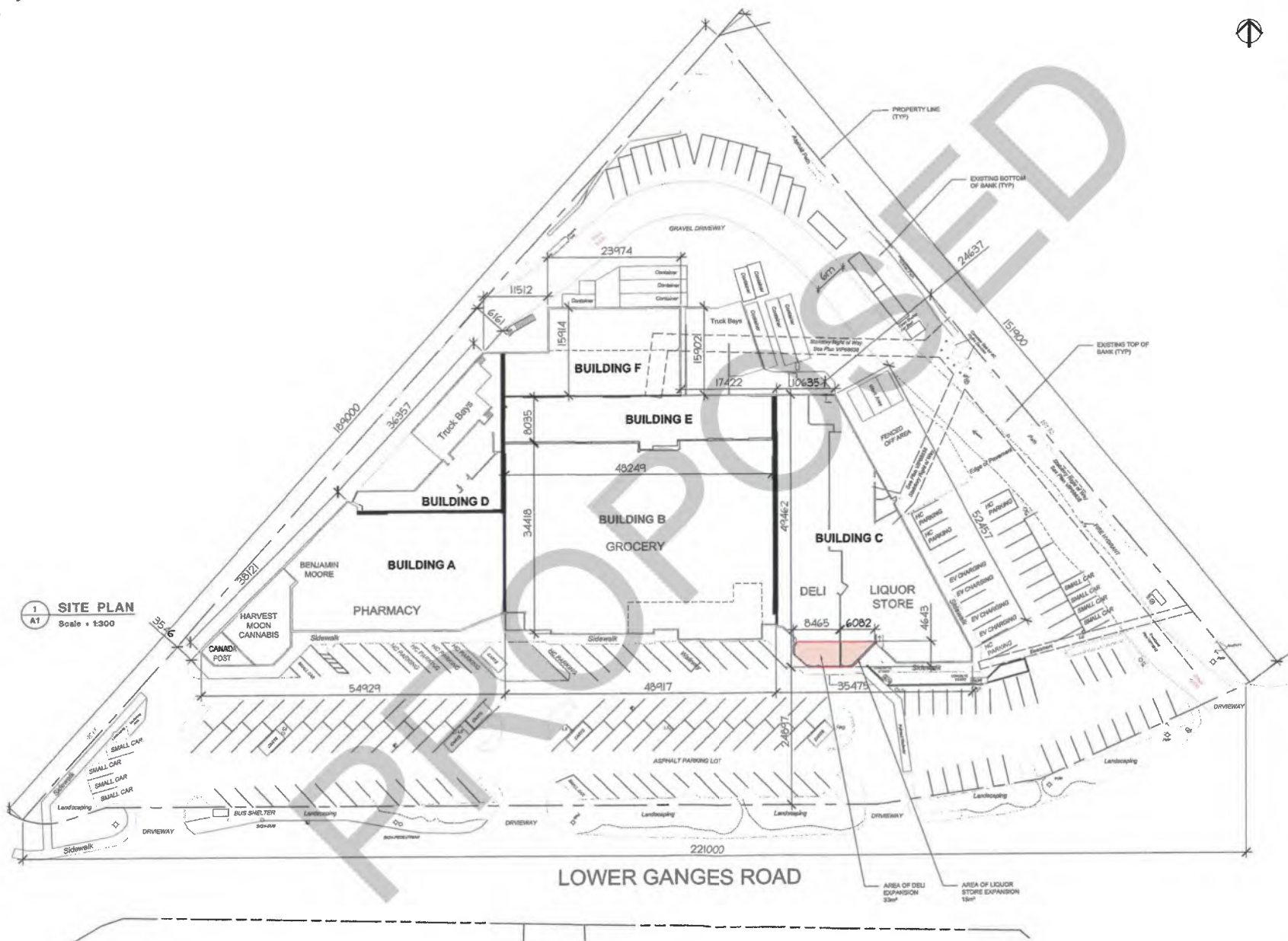


Project:
382 COUNTRY GROCER
DELI & LIQUOR STORE - EXPANSION
382 LOWER GANGES RD
SALT SPRING ISLAND, BC
V8K 2V7
Title:

SITE PLAN

Project No.: 2423
Drawn By: MD
Checked By: DB
Scale: AS SHOWN

No. ISSUE DATE
Revision History
Issued For: Drawing No.:
1 REVIEW
2 REVIEW
3 DESIGN
4 CONSTRUCTION
5 AS BUILT
Date: MARCH 26, 2025



1 SITE PLAN
A1
Scale: 1:300

SUMMARY OF PARKING PROVIDED: <u>RETAIL & OFFICE</u> • 136 <u>EMPLOYEE</u> • 30 <u>ACCESSIBLE</u> • 9 TOTAL 175 SPACES

*NOTE AREAS ARE TO INSIDE FACE OF WALL



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LEGEND:

■■■■■ FIRE SEPARATION



Project
SSI COUNTRY GROCER
DELI & LIQUOR STORE & EXPANSION
382 LOWER GANGES RD
SALT SPRING ISLAND, BC
V8K 2V7

PARKING PLAN

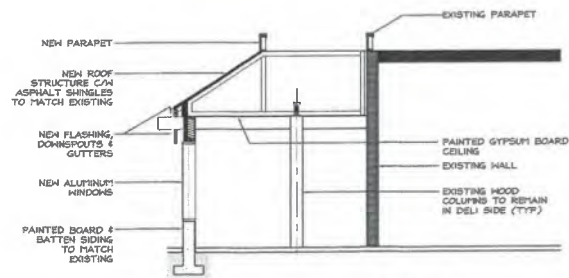
Project No.:	2423
Drawn By:	MD
Checked By:	DB
Scale:	AS SHOWN

IN: ISSUE	DATE
Revision History	
Issued For:	Drawing No. A2
☐ REVIEW	
☐ 70% REVIEW	
☐ 90% REVIEW	
☐ TENDER	
☐ DEVELOPMENT PERMIT	
☐ CONSTRUCTION	

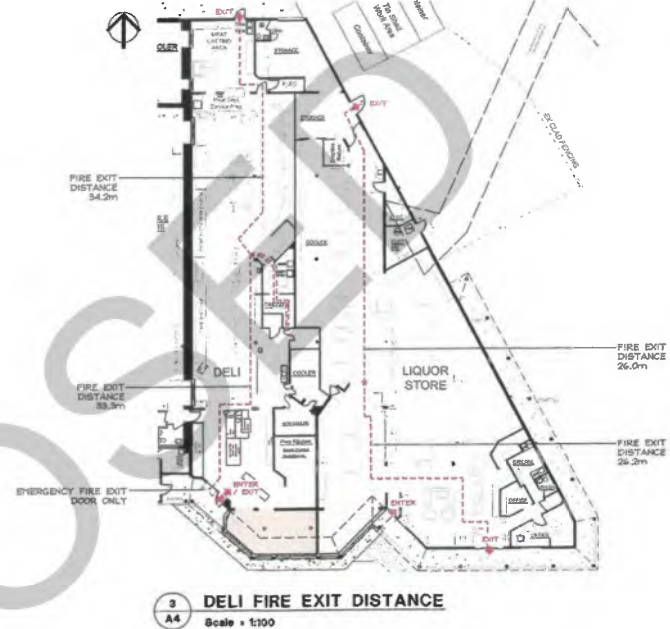
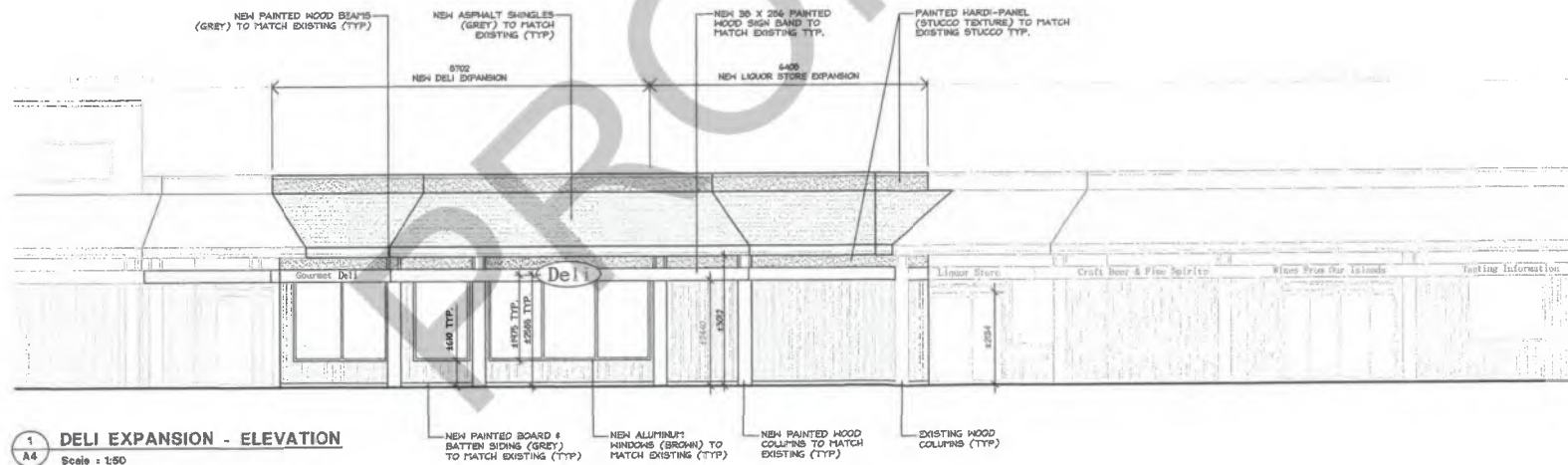
Date: MARCH 26, 2025



EXISTING DELI, CANOPY & ENCLOSURE



2 DELI EXPANSION - SECTION
A4 Scale: 1:50



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Project
SBI COUNTRY GROCER
DELI & LIQUOR STORE & EXPANSION
382 LOWER GANGES RD
SALT SPRING ISLAND, BC
V8K 2V7
Title

ELEVATION, SECTION,
IMAGE & FIRE EXIT
DISTANCE

Project No.: 2423
Drawn By: MD
Checked By: DB
Scale: AS SHOWN

Revision History
Issued For: A4
Date: MARCH 26, 2025

COPY

**SITE PLAN OF LOT 1, SECTION 3, RANGE 3
EAST, NORTH SALT SPRING ISLAND,
COWICHAN DISTRICT, PLAN VIP63799
PG 001-005-049**

The Assessor's plan of this plan is 1:1 shown in order to define
or explain the boundaries of the plan as shown on the plan.

Boundary dimensions are in metres, feet
and decimal fractions thereof, unless otherwise
indicated.

All dimensions are as shown and
measured from the centre of the road.

Dimensions are shown from the centre of the road to the
centre of the road, unless otherwise indicated.

The line address of the building is:
1011 Lower Ganges Road.

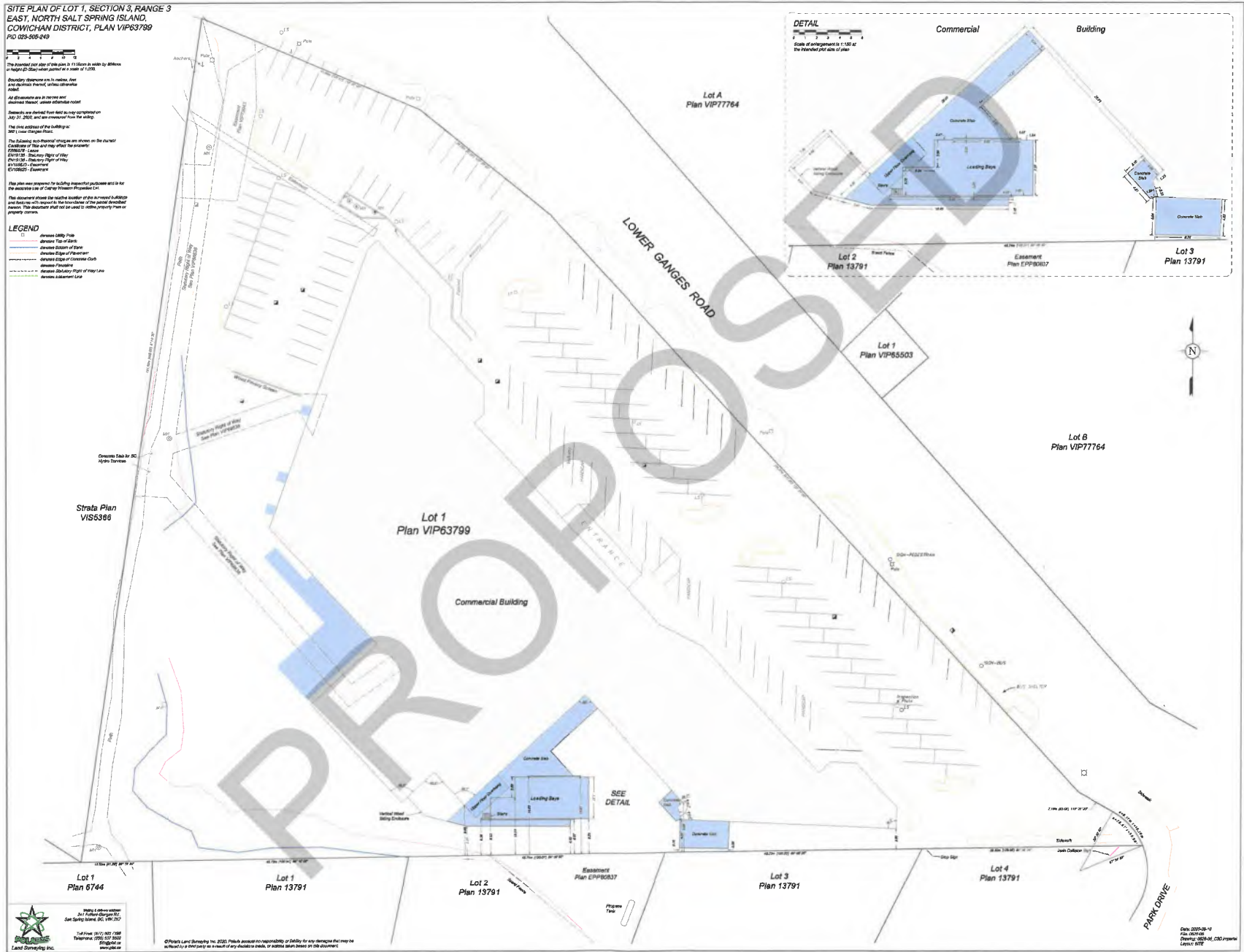
The following sub-divisional changes are shown on the plan:
COWICHAN DISTRICT - 1011 Lower Ganges Road
COWICHAN DISTRICT - 1011 Lower Ganges Road
COWICHAN DISTRICT - 1011 Lower Ganges Road
COWICHAN DISTRICT - 1011 Lower Ganges Road

This plan was prepared for the building inspection purposes and is not
to be used for any other purpose.

This document shows the relative location of the proposed building
and the boundaries of the plan. It does not show the location of the
building. This document should not be used to determine the location of the
building.

LEGEND

- denotes Subdivided Line
- denotes Top of Road
- denotes Bottom of Road
- denotes Edge of Pavement
- denotes Edge of Concrete Deck
- denotes Footing
- denotes Boundary of Water Line
- denotes Subdivision Line



Lot 1 Plan 6744

Lot 1 Plan 13791

Lot 2 Plan 13791

Lot 3 Plan 13791

Lot 4 Plan 13791

Lot 6 Plan VIP77764

Lot 8 Plan VIP63799

Commercial Building

SEE DETAIL

LOWER GANGES ROAD

PARK DRIVE

PROPOSED



Lot 1 Plan 6744
Lot 1 Plan 13791
Lot 2 Plan 13791
Lot 3 Plan 13791
Lot 4 Plan 13791
Lot 6 Plan VIP77764
Lot 8 Plan VIP63799

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May 14 , 2025

Islands Trust
Salt Spring Office
1 - 500 Lower Ganges Road Salt Spring Island, SC VSK 2N8

Email: ssilinfo@islandstrust.bc.ca

Planning

Re: Country Grocer Deli .Expansion 382 Lower Ganges Road, Salt Spring Island

Proposal is to expand the coffee shop portion of the Deli. into the area currently occupied partly by outdoor seating and to take the opportunity to marginally increase the retail space for the liquor store. The overall design expansion emulates the turned post and canopy of the original frontage to blend in.

The total redevelopment will add 51sq.m to the building, bringing the site coverage to 32.1%.

Zoning allows a maximum of 75%.

Parking spaces will be increased to accommodate the additional uses to a total of 175 spaces

We hope this is sufficient information for your purposes at present but please don't hesitate to call with questions. We look forward to an approval for this small addition..

Yours very truly,
JENSEN GROUP ARCHITECTS INC.



Don Brown, Architect AIBC
DB/kj

MEMORANDUM

DATE OF MEETING: July 10, 2025

File Nos.:
PLDP20240056
PLDP20240057
PLDP20240058

TO: Salt Spring Island Local Trust Committee
FROM: David Marlor, Director of Legislative Services
SUBJECT: Delegated Development Permit Appeal
Applicant: Bradley Fossen
Location: - 235 Quarry Dr., 239 Quarry Dr. & 431 Baker Rd.

PURPOSE

The Salt Spring Island Local Trust Committee (LTC) has received an appeal from the applicant of a Development Permit and must determine next steps.

BACKGROUND

Salt Spring Island Local Trust Committee Delegation Bylaw No. 534, 2022 delegates to the Director of Local Planning Services, or in his/her absence the Regional Planning Manager, the power to issue a development permit or a development permit amendment under Section 490 of the Local Government Act in respect of development permits issued within the following development permit areas:

- a. Development Permit Area 3 (Marine Shorelines),
- b. Development Permit Area 4 (Lakes, Streams and Wetlands),
- c. Development Permit Area 5 (Community Well Capture Zones),
- d. Development Permit Area 6 (Slope Stability and Soil Erosion Hazards); and
- e. Development Permit Area 7 (Riparian Areas).

Bylaw 534 allows an applicant to have a decision of the delegate in relation to a permit reconsidered by the LTC by submitting a written request for reconsideration to the Deputy Secretary within thirty days after the decision is delivered to or made available to the applicant.

A request for reconsideration has been received and is attached to this memo. Additional information regarding these applications can be found on the Current Applications webpage:

<https://islandstrust.bc.ca/island-planning/salt-spring/current-applications>

NEXT STEPS

The following draft resolutions have been provided for consideration:

- 1. If the LTC wishes to confirm all or part of the delegate's decision:**
That the Salt Spring Island Local Trust Committee confirms the non-issuance of development permit PLDP20240056.
That the Salt Spring Island Local Trust Committee confirms the non-issuance of development permit PLDP20240057.
That the Salt Spring Island Local Trust Committee confirms the non-issuance of development permit PLDP20240058.
- 2. If the LTC wishes to set aside all or part of the delegate's decision:**
That the Salt Spring Island Local Trust Committee request staff to prepare draft development permit PLDP20240056 for consideration at a later date.

MEMORANDUM

That the Salt Spring Island Local Trust Committee request staff to prepare draft development permit PLDP20240057 for consideration at a later date.

That the Salt Spring Island Local Trust Committee request staff to prepare draft development permit PLDP20240058 for consideration at a later date.

3. If the LTC wishes to amend the delegate's decision or make a new decision:

That the Salt Spring Island Local Trust Committee request that the applicant submit to the Islands Trust an [list Report], completed by a [list Professional], which addresses the following [list concerns].

Submitted By:	David Marlor, Director of Legislative Services	July 3, 2025

ATTACHMENTS

1. Applicant Appeal

File No: PLDP20240056 - 235 Quarry Dr.

PLDP20240057 - 239 Quarry Dr.

PLDP20240059 - 434 Baker Rd.

Via: email

Our File: 2022.68

Date: June 06, 2025**Attention:** Rob Pingle, Deputy Secretary / Legislative Clerk
Stefan Cermak, Director, Planning Services
Oluwashogo Garuba, A/Planner 2, Islands Trust**Re:** Development Permit Application (Tracking Number PLDP20240056,
PLDP20240057, PLDP20240059)
Land / Foreshore Use Application: Shoreline Erosion Mitigation
Response to Memoranda Received May 09, 2025 ("Memoranda 1")

1 This document package is submitted on behalf of the Applicants detailed in Table 1 ("the Owner
2 Group") who seek approval for a shoreline erosion mitigation project ("the Project") concerning their
3 properties as indicated ("the Subject Parcels") and are requesting reconsideration of non-issuance of
4 development permit by Islands Trust Director, Planning Services.

5 *Table 1: Owner Group and Subject Parcels*

Address	PID	Legal Description	Owners
235 Quarry Dr, Salt Spring Island	009-555-706	LOT 1 SECTIONS 6 AND 7 RANGE 1 WEST NORTH SALT SPRING ISLAND COWICHAN DISTRICT PLAN 46155	HEIDI KUHRT AND DAVID DEMNER
239 Quarry Dr, Salt Spring Island	009-555-731	LOT 3, SECTIONS 6 AND 7, RANGE 1 WEST, NORTH SALT SPRING ISLAND, COWICHAN DISTRICT, PLAN 4615	PAT AND BRUCE SANDERS
434 Baker Rd, Salt Spring Island	009-555-781	LOT 5, SECTION 6, RANGE 1 WEST, NORTH SALT SPRING ISLAND, COWICHAN DISTRICT, PLAN 46155	ETHAN WILDING

6 A Development Permit Application (the "Application") was submitted on behalf of the Owner Group on
7 December 27, 2023, by their Agent, Aurora Professional Group Inc.

8 In preparation for the Application, the Owner Group engaged qualified professionals to evaluate and
9 oversee application rationale and scopes, as detailed in Table 2, herein referred to as the "Consultant
10 Team."

11

12 *Table 2: Project Team and Related Scope*

Consultant	Lead Contact	Scope
Aurora Professional Group Inc. ("ENG")	Bradley Fossen P.Eng., QP t. 778.400.3375 e. brad@thinkapg.com	Coordinating Qualified Professional (QP)
CORVIDAE Environmental Consulting Inc. ("RPBIO")	Julie Bugden BSc, RPBio, QEP m. 250.415.8553 e. julieb@corvid.pro	Habitat Assessments QEP, Vegetation Enhancements Design
Millennia Research Ltd. ("ARCH")	Thea Sawin MA t. 250.360.0919 e. thea@millennia-research.com	Archeological Permitting and Monitoring
Polaris Land Surveying Inc. ("SURVEY")	Jordan Litke P.Surv, BCLS m. 250.686.0278 e. jlitke@plsi.ca	Property Survey, Topography
TRE Environmental Services ("GEO")	Thomas R Elliot PhD P.Geo P.Ag, QEP m. 250.732.9004 e. tom@elliott.org	Geo-assessments, Coastal Processes QP, and Design Bases
Klaver Strategic Planning ("RPP")	Serena Klaver, MA, RPP, MCIP m. 250.951.6494 e. serenaklaver@gmail.com	Planning Consultancy – Land Use Best Practices, Regulatory Review, and Gap Analyses

13 ISLANDS TRUST MEMORANDA

14 Islands Trust has provided a non-issuance memorandum for each tracking number, herein described as
15 Memoranda 1 or the "Memoranda."

16 The Memoranda have described the Director's conclusion that:

17 I. the proposed development activities (shoreline erosion mitigation project) conflict with Salt
18 Spring Island Official Community Plan (OCP) Bylaw No. 434, 2008

19 ○ objectives E.3.3.1 and E.3.3.2,

20 ○ and guidelines E.3.4.1, E.3.4.2, E.3.4.9, E.3.4.21, and E.3.4.22

21 The Director Cermak notes that their conclusion is based on staff reports, each of which recommends
22 against approving an issuance; proposed activities are not consistent with the following guidelines of
23 DPA 3. The rationale is restated and itemized in Table 3.

24 Responses from the Consulting Team, which directly coincide with the Islands Trust's comments, have
 25 also been included in the same table to provide greater context and assurance that DPA 3 guidelines
 26 have been and/or will be met through the subject shoreline erosion mitigation project.

27 Additional detailed planning rationale has been provided by the Consultant Team and is included in the
 28 following Table 3.

29 *Table 3: OCP Objective-Guideline Review by Islands Trust & Consulting Team*

SSI OCP 434, 2008 Objective/Guideline	Islands Trust Staff Memoranda (May 8, 2025) Responses	Consultant Team Responses
E.3.3.1 (Tidal Water Quality)	Proposed works are in conflict with OCP objective.	DFO advice 24-HPAC-00369 and the associated Corvidae Submission (previously submitted and attached) address the quality of tidal waters and the protection of fish and wildlife habitat.
E.3.3.2 (Fish/Wildlife Habitat)	Proposed works are in conflict with OCP objective.	
E.3.4.1 (Minimize water quality/substrate impacts)	Potential for substrate disturbance and water quality degradation from sediment deposit and machinery use; insufficient mitigation details.	<i>This requirement is met, as per DFO advice 24-HPAC-00369 and the associated Corvidae submission (previously submitted and attached). Further, land-based activities were also included within the proposed work for DFO consideration. "Land Development Guidelines for the Protection of Aquatic Life" is a DFO document primarily focused on freshwater. Notwithstanding, land-based activities are also considered, and mitigations are advised upon in DFO 24-HPAC-00369, meeting the requirement of OCP E.3.4.2.</i>
E.3.4.2 (Aquatic habitat protection)	No clear assessment of impacts to fish habitat or mitigation for sedimentation; lack of compliance with Land Development Guidelines for Aquatic Habitat	

E.3.4.9 (No shoreline filling except minor public pathway)	Large-scale aggregate placement (434.4m ² , 1m thick) exceeds “minor fill”	The aggregate deposit follows a nature-based method described in SSI OCP 438, 2008 E.3.4.23. The proposed works are enclosed as part of a proposed foreshore tenure (with Province); parcel boundaries are not to be adjusted. It is noted that the OCP does not include considerable detail on nature-based methods for shoreline stabilization. It is helpful to seek additional details in different Islands Trust documents beginning with Marine Shorelines section on the Islands Trust website; <i>Your Marine Waterfront: A guide to protecting your property while promoting healthy shorelines</i> (Stewardship Centre for British Columbia, 2016)
E.3.4.21 (Professional engineer’s report)	Unclear need to protect existing structures; sediment created by placement of nourishment could negatively affect habitat.	The TRE reports, in conjunction with Corvidae assessments and subsequent DFO RFR submissions, along with the DFO Advice, satisfy the requirements of E.3.4.21.
E.3.4.22 (Limit stabilization to protecting existing structures/uses)	Unclear what existing structures are at risk; appears to be for undeveloped land	Erosion risk to structures can also be illustrated by existing “hard” erosion mitigation measures that have already been employed on nearby parcels, notably (but not limited to) the CRD staircases abutting the proposed project area. All three sites are established private residential properties with active use and are not vacant or proposed for future subdivision. In each case, the proposed mitigation seeks to prevent loss of established use and ecological function. Mitigation measures are not to reclaim or pre-emptively develop the shoreline. No structures are proposed seaward of the current development footprints.

Memoranda 1 Response

We note that several of the rationale items in the Islands Trust Memoranda overlap in theme and intent. For response, we have consolidated the six rationale items into three thematic categories.

We respond to each of the grouped themes, referencing previously submitted materials and drawing on relevant OCP language and regulatory interpretation. This response has been prepared by the Consultant Team and compiled into a single document under one letterhead.

Themes

Memoranda Theme 1 – Sediment Supplementation, Water Quality, and Habitat Impact

(Relates to Rationale Items 1 (E.3.4.1), 2 (E.3.4.2), and 6 (E.3.3.1/2))

- E.3.4.1: All work that takes place below the natural boundary of the sea should be done in a way that minimizes degradation of water quality and disturbance of the substrate.
- E.3.4.2: All work that takes place on land within 10 m of the natural boundary of the sea should be planned and carried out in a way that is consistent with the Land Development Guidelines for the Protection of Aquatic Habitat (Appendix 7).
- E.3.3.1: To protect the quality of the tidal waters that surround Salt Spring Island.
- E.3.3.2: To protect fish and wildlife habitat.

Staff concerns relate to the potential for disturbance of the intertidal substrate, degradation of tidal water quality, and impacts to aquatic habitat.

Considerations within Theme 1

We note that per OCP E.3.4.1, the requirement is that the work minimizes degradation of water quality and disturbance of the substrate.

This requirement is met, as per DFO advice 24-HPAC-00369 and the associated Corvidae submission (previously submitted and attached). Further, land-based activities were also included within the proposed work for DFO consideration. "Land Development Guidelines for the Protection of Aquatic Life" is a DFO document primarily focused on freshwater.

Notwithstanding, land-based activities are also considered, and mitigations are advised upon in DFO 24-HPAC-00369, meeting the requirement of OCP E.3.4.2.

OCP E.3.3.1 and E.3.3.2 are listed as objectives of DPA-03.

DFO advice 24-HPAC-00369 and the associated Corvidae Submission (previously submitted and attached) address the quality of tidal waters and the protection of fish and wildlife habitat.

We note that the applications have been proposed in line with additional OCP DPA-03 listed objectives:

E.3.3.3 To prevent erosion and hazardous conditions that could result from interrupting the natural geohydraulic processes along the shoreline.

E.3.3.4 To protect development from hazardous conditions.

Theme 1 Discussion

We respectfully submit that the proposed sediment supplementation does not conflict with the stated objectives of DPA 3 and is, in fact, consistent with modern nature-based shoreline stabilization methods endorsed by the Province of British Columbia, the OCP, and with precedence from other existing Islands Trust documentation. Proposed aggregates are to be free of easily mobilized fine sediment and explicitly selected in both source and size range to mimic natural shoreline processes and attenuate erosive energy.

With respect to sediment disturbance, the application includes a geoassessment by TRE Environmental, which describes the physical context of the site, justifies the use of sediment supplementation based on observed active erosion, and confirms that the intervention is necessary to maintain slope stability and protect existing value found in the intertidal-environment.

Regarding fish habitat and water quality, the habitat assessment and DFO Request for Review (RFR) submission prepared by Corvidae Environmental confirms that the proposed materials and construction approach will not result in a net loss of habitat function. The report acknowledges short-term turbidity associated with implementation but confirms that these are minor and manageable and that long-term habitat benefits are expected through reduced sediment input from eroding slopes and improved substrate characteristics.

We also note that machine access will be limited and performed in accordance with best practices and site-specific mitigation measures. These include containment protocols, scheduling outside sensitive windows, and active monitoring if required. The reference to the Land Development Guidelines (LDG) is noted; however, we emphasize that those guidelines were developed primarily for instream freshwater habitat and are not directly translatable to all marine shoreline contexts. Nonetheless, key LDG principles (e.g., sediment containment, equipment exclusion zones, progressive stabilization) are incorporated into the mitigation framework and should be implicit in the DFO advice.

In our view, this theme reflects a misunderstanding of the purpose and ecological basis of sediment supplementation as proposed. It is not intended for development purposes, but rather to supplement a clean aggregate to a human-disrupted foreshore sediment supply in an effort to emulate a natural dynamic shoreline process with defined ecological and hazard reduction benefits.

Memoranda Theme 2 – Shoreline Fill and Physical Modification

(Relates to Rationale Item 3 (E.3.4.9))

E.3.4.9: The shoreline should not be filled in to create additional land, except minor areas of fill necessary to complete the boardwalk section of the Ganges Public Pathway System in Ganges Harbour.

Staff have interpreted the proposed beach nourishment activity as additional land, questioning its consistency with DPA 3 guideline E.3.4.9.

Considerations within Theme 2

The aggregate deposit follows a nature-based method described in SSI OCP 438, 2008 E.3.4.23.

The proposed works are enclosed as part of a proposed foreshore Provincial tenure; parcel boundaries are not to be adjusted.

It is noted that the OCP does not include considerable detail on nature-based methods for shoreline stabilization. It is helpful to seek additional details in different Islands Trust documents beginning with Marine Shorelines section on the Islands Trust website; Your Marine Waterfront: *A guide to protecting your property while promoting healthy shorelines* ([Stewardship Centre for British Columbia, 2016](#)).

Our non-exhaustive search has also noted the following other resources that can be consulted for additional detail on nature-based shoreline stabilization methods, including the placement of aggregate:

- Fraser Simpson Consulting Inc & Associates, "Shoreline Protection Model Bylaw Report," Islands Trust, 2021
 - o Provides context for nature-based methods in the different regulatory regimes.
- Galiano Island Official Community Plan Bylaw No. 108, 1995
 - o Provides guidelines for beach nourishment, including "Shoreline and Marine Development Permit Area (DPA 2) Guideline Checklist"
- Gambier Island Proposed Bylaw 154 – Keats Island Shoreline Protection Project
 - o If approved, the bylaw would provide a shoreline protection DPA area. Draft bylaws provide guidelines for beach nourishment.
- Islands Trust. (2023). Your marine waterfront guide 2023.
<https://islandstrust.bc.ca/document/your-marine-waterfront-guide-2023/>
- Johannessen, J., & MacLennan, A. (2007). Beaches and bluffs of Puget Sound (Puget Sound Nearshore Partnership Report No. 2007-04). Seattle District, U.S. Army Corps of Engineers.
https://www.pugetsoundnearshore.org/technical_papers/beaches_bluffs.pdf
- Shipman, H. (2009). The geomorphic setting of Puget Sound: Implications for shoreline erosion and the impacts of erosion control structures. In Shipman, H., Dethier, M. N., Gelfenbaum, G., Fresh, K. L., & Dinicola, R. S. (Eds.), Puget Sound shorelines and the impacts of armoring—Proceedings of a state of the science workshop (pp. 19–34). U.S. Geological Survey Scientific Investigations Report 2010-5254.
https://pubs.usgs.gov/sir/2010/5254/pdf/sir20105254_chap3.pdf
- Vic News Staff. (2023, May 17). Habitat project shores up Pat Bay. Vic News.
<https://www.vicnews.com/local-news/habitat-project-shores-up-pat-bay-37135>
- Washington State Department of Ecology. (2014, March). Soft shoreline stabilization: Shoreline master planning program and implementation guidance.
<https://fortress.wa.gov/ecy/publications/publications/1406012.pdf>

- Washington State Department of Ecology. (2019, November). Shoreline permitting manual: Guidance for local governments (Publication No. 17-06-029).
<https://apps.ecology.wa.gov/publications/documents/1706029.pdf>

Other Islands Trust staff reports, noting a preference for nourishment over “hard” erosion prevention measures. This list is not exhaustive, and additional resources may exist.

- Islands Trust Staff Report SP-6500-20 “Shoreline Review”
 - o Notes a preference for nature-based methods, including beach nourishment and other “flexible defence works.”
- Thetis Green Shores Scenarios Workshop (13-June-2014)
 - o An Islands Trust hosted workshop on Green Shore™ techniques.

Theme 2 Discussion:

Staff have interpreted the sediment addition as “fill,” and described it as inconsistent with E.3.4.9, which discourages shoreline fill except in specific, limited circumstances. We respectfully submit that the proposed material placement should not be categorized as fill in the regulatory sense implied by the guideline. The intent and functional effect does not create additional upland or extend property boundaries, which is clear from the aforementioned regulatory limitations to such an effort. The proposed works would supplement the disrupted foreshore sediment supply through beach nourishment. This activity will reintroduce natural substrate to a high-energy shoreline cell that is actively losing soil and ecological function due to wave energy and landward retreat.

There is no intention to change the use or zoning of the area where sediment is placed. No structures are proposed in this zone, and the intended elevation is transitory by design; it is subject to tidal reshaping by wave energy. This aligns with the Province of British Columbia’s endorsement of beach nourishment as a low-impact, nature-based strategy for mitigating coastal erosion, particularly when used in conjunction with native vegetation and low-profile stabilization elements, as is the case here presented.

The application does not propose to create “additional land” in the sense used by the OCP guideline. We are open to revising terminology or implementation details to clarify this intent if it would be helpful. We note that other Islands Trust planning contexts, including existing bylaws on Galiano, proposed bylaws on Keats Island, and various efforts by the Islands Trust, demonstrate an increasing acceptance of beach nourishment as a flexible and ecologically supportive approach to shoreline stabilization.

Memoranda Theme C – Shoreline Stabilization Reports and Justification of Need

(Relates to Rationale Items 4 (E.3.4.21) and 5 (E.3.4.22))

E.3.4.21: Applications for shoreline stabilization should include a report, prepared by a Professional Engineer with experience in geotechnical engineering, which describes the proposed modification and shows [items a through f]

E.3.4.22: Shoreline stabilization should be limited to that necessary

a. To prevent damage to existing structures or an established use on adjacent upland.

b. To prevent damage to a proposed public land use.

This staff concern relates to how the proposal meets the DPA 3 guidelines regarding the need for shoreline stabilization and whether the assessments adequately demonstrate the basis for modification.

Considerations within Theme 3:

We note that the bylaw does not state immediate damage. Rather, the OCP objectives (reiterated from above) are described as

E.3.3.3 To prevent erosion and hazardous conditions that could result from interrupting the natural geohydraulic processes along the shoreline.

E.3.3.4 To protect development from hazardous conditions.

Hazardous conditions, such as tree topple and other erosion indicators, are documented.

E.3.4.21 should be considered in conjunction with E.2.4.22, where shoreline erosion mitigation may be necessary to prevent damage to both structures and established uses of the adjacent upland.

Theme 3 Discussion:

The reports prepared by TRE Environmental outline the rationale for shoreline stabilization across the three subject parcels. This includes documentation of active, punctuated slope retreat, shallow groundwater influence, erosion scarps, and vegetative dieback, which collectively warrant protective intervention. The report identifies specific infrastructure and upland uses at risk over a foreseeable planning horizon.

The TRE reports, in conjunction with Corvidae assessments and subsequent DFO RFR submissions, along with the DFO Advice, satisfy the requirements of E.3.4.21. We note that the Memoranda do not dispute the presence of erosion risk or shallow slope instability, only the degree of justification provided for stabilization. Erosion risk to structures can also be illustrated by existing “hard” erosion mitigation measures that have already been employed on nearby parcels, notably (but not limited to) the CRD staircases abutting the proposed project area.

Regarding whether the stabilization protects existing use versus speculative development, we note that all three sites are established private residential properties with active use and are not vacant or proposed for future subdivision. In each case, the proposed mitigation seeks to prevent loss of established use and ecological function. Mitigation measures are not to reclaim or pre-emptively develop the shoreline. No structures are proposed seaward of the current development footprints.

Consideration

We, the applicant, acting on behalf of the property owners, seek to work collaboratively. We are open to providing further information or enhanced responses in partnership with Islands Trust staff.

In summary, we respectfully request:

(1) The decision on these applications remains within the authority of the Islands Trust Director, Planning Services, under Land Use Permit Delegation Bylaw No. 534. Under that bylaw, the Director may request additional information from applicants prior to making a decision. In this case, the Memoranda were the first formal communication received from the Director, and the concerns raised within them could have been addressed proactively through informal correspondence or a request for clarification. Many of the issues were already addressed in existing application materials or could have been readily supplemented upon request. Any exemption criteria could have been evaluated through the typical evaluation process.

(2) Islands Trust reconsideration and approval for the subject Development Permit Application (Tracking Number PLDP20240056, PLDP20240057, PLDP20240059); and,

(3) Islands Trust confirmation of DPA exemption clause, resulting in approval of the above noted Development Permit Application(s), on/for the following:

- DFO approved works as described in DFO Advice (24-HPAC-00369), consistent with the following exemption in DPA 3:

Despite Section E.3.1.2, the following activities are also exempted from the requirement to obtain a Development Permit:

E.3.1.3(f): Vegetation removal within 10 m of the natural boundary of the sea or works below the natural boundary of the sea that have been approved in writing by the Ministry of Environment or the Department of Fisheries and Oceans.

The DFO Advice (24-HPAC-00369) and supporting materials were provided in good faith and reflect a comprehensive, professional review of the proposed works. We believe they meet or exceed the expectations of DPA 3 and associated objectives while also satisfying the exemption criteria.

(Note: there appears to be little precedent for non-issuance decisions under the current delegation framework. As such, there is no established format or guidance for how applicants might respond constructively. In good faith, we have prepared this submission to support the interests of the homeowners, the objectives of the SSI OCP 434, 2008, and the collaborative decision-making process.)

If no mechanism exists to petition the Director's conclusion directly, then we formally request consideration by the Local Trust Committee under the process outlined in the Memoranda. We confirm the following:

- We seek reconsideration and approval for the subject Development Permit Applications (Tracking Numbers PLDP20240056, PLDP20240057, PLDP20240059), and we, the applicant, acting on behalf of the property owners, seek to work collaboratively. We are open

- 244 to providing further information or enhanced responses in partnership with Islands Trust
245 staff.
- 246 - The applicants' addresses are undersigned.
 - 247 - The written decisions (Memoranda) are appended to this submission.
 - 248 - The grounds for consideration are detailed above, including technical counterpoints,
249 regulatory interpretations, exemption interpretations, and references to precedent.
 - 250 - The decision requested of the LTC is either:
 - 251 ○ Approval in full; or,
 - 252 ○ Further clarification, as may be required.
 - 253 - Supporting rationale is included throughout this submission.
 - 254 - We remain open to further engagement and can provide additional information or
255 clarification in collaboration with Islands Trust planning staff.
 - 256 - Additional materials referenced are enclosed, though we believe most, if not all, are already
257 part of the application file.

258 **Final Commentary and Timing Request**

259 The approved window for in-water work in DFO Area 17 – the Nanaimo area, during the summer period
260 - is from June 1 to September 1. We must consider that further delay will make it unlikely that any
261 proposed in-water work can be approved and coordinated within the 2025 summer window. In the
262 interest of working within the regulated and permissible seasonal time period for remediation works in
263 2025, the homeowners also respectfully request immediate approval from the Islands Trust to proceed
264 with the upland measures. Specifically, this would include the removal of invasive species and
265 replanting of hardy native vegetation under the terms of the DFO Advice and also consistent with the
266 following exemption in DPA 3:

267 *E.3.1.3(f): "Vegetation removal within 10 m of the natural boundary of the sea or works below the*
268 *natural boundary of the sea that have been approved in writing by the Ministry of Environment or*
269 *the Department of Fisheries and Oceans" are exempt from the requirement to obtain a*
270 *Development Permit.*

271 We believe this rationale and approach reflect both the spirit and intent of the SSI OCP 434, 2008, which
272 upholds the integrity of DPA 3 and offers a first, immediate and pragmatic path forward while
273 maintaining transparency and respect for the process.

274 Thank you. We look forward to a response and decision from Islands Trust Director, Planning Services
275 and notice of receipt from the Deputy Secretary / Legislative Clerk. We respectfully request that the
276 Islands Trust respond by June 23, 2025, to proceed with the permissible works discussed above.

DISCLAIMERS

277 This document, prepared by Aurora Professional Group Inc., represents a technical submission for the
278 Project. The information contained herein is based on the best available data, expertise of engaged

279 professionals, and adherence to applicable standards and regulatory requirements at the time of
280 preparation.

281 It is important to note that engineering, environmental science, and regulatory landscapes are subject
282 to change. Therefore, while every effort has been made to ensure the accuracy and relevance of the
283 information provided, Aurora Professional Group Inc. does not warrant the completeness or accuracy
284 of the information, nor does it assume any liability for errors or omissions. Decisions based on
285 information contained in this document are the sole responsibility of the user.

286 Furthermore, this document does not constitute an exhaustive treatment of the subject matter and
287 should be used in conjunction with professional judgement and after consultation with appropriate
288 regulatory authorities. The recommendations and findings presented are specific to the conditions
289 encountered at the project site at the time of assessment and are intended for use by qualified
290 professionals familiar with the nuances of shoreline erosion mitigation.

291 Any use of this document by third parties, or for purposes other than those for which it is specifically
292 intended, is prohibited without the express written permission of Aurora Professional Group Inc.
293 Modifications to the project design or deviations from the recommendations contained herein should
294 only be made by qualified professionals with full knowledge of the specific conditions and
295 requirements of the project site.

ATTACHMENTS

1. RESUBMISSION: DFO ADVICE, WITH SUPPORTING CORVIDAE SUBMISSION
2. WRITTEN DECISIONS (MEMORANDA)

SIGN OFF

By this submission, the Applicants have attempted to provide all relevant information to the approving authority to support the expedited permit process.

Please feel free to contact the undersigned or Consultant Team directly if you have any questions or concerns.

Respectfully submitted on behalf of the Owner Group and Consultant Team,

Per:



Bradley Fossen, P.Eng., Agent, and on behalf of the Consultant Team

Managing Director | Aurora Professional Group Inc.

202-338 Lower Ganges Rd, Salt Spring Island, V8K 2V3

E: brad@thinkapg.com | T: 778-400-3375

CC: CORVIDAE, TRE, FILE



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Pacific Region
Ecosystem Management Branch
3190 Hammond Bay Road
Nanaimo, BC
V9T 6N7

Région du Pacifique
Direction de la gestion des écosystèmes
3190, rue Hammond Bay
Nanaimo, (C.-B.)
V9T 6N7

Our file Notre référence
24-HPAC-00369

July 31, 2024

ATTENTION - the following property owners on Salt Spring Island, BC:

Bruce and Patricia Sanders 239 Quarry Drive	Ethan Wilding 434 Baker Road	Heidi Kuhrt and David Demner 235 Quarry Drive	Jeremy and Claire Sicherman 431 Baker Road

Via email: brucersanders@gmail.com, tricialsanders3@gmail.com, wilding@protonmail.com,
info@heidikuhrt.com, and jeremy@sgplodge.com

Dear Bruce Sanders, Patricia Sanders, Ethan Wilding, Heidi Kuhrt, David Demner, Jeremy Sicherman and Claire Sicherman:

Subject: Erosion Mitigation, Booth Inlet, Vesuvius – Implementation of Measures to Avoid and Mitigate the Potential for Prohibited Effects to Fish and Fish Habitat

The Fish and Fish Habitat Protection Program (the Program) of Fisheries and Oceans Canada (DFO) received your original proposal on March 25, 2024, and an updated proposal on July 3, 2024. We understand that you propose to install shoreline protection along approximately 400 meters of shoreline generally fronting four properties located at 235 Quarry Drive, 239 Quarry Drive, 434 Baker Road, and 431 Baker Road in Vesuvius Bay on Salt Spring Island, BC. The project includes:

- the removal of invasive plant species and the planting of native riparian plants along the backshore;
- placement of a beach nourishment berm consisting of alluvial/fluvial pebble to cobble-sized material supplemented with sand and gravel in the upper tidal and backshore zone; and
- placement of boulders/non-uniform rock clusters along the low-tide terrace beneath the beach nourishment berm for shoreline erosion protection.

We understand the following aquatic species listed under the *Species at Risk Act* may use the area in the vicinity of where your proposal is to be located:

- Killer Whale (Northeast Pacific southern resident population) and Northern abalone, both listed as Endangered;
- Killer Whale (Northeast Pacific offshore & transient populations) listed as Threatened; and
- Bluntnose sixgill shark, longspine thornyhead, rougheye rockfish (type I & II), tope, yelloweye rockfish (inside & outside waters populations), grey whale, harbour porpoise, humpback whale, and steller sea lion, all listed as Special Concern.

Our review considered the following information:

- *Request for Review Form* including *Appendix A – Photo Log*, and *Appendix B - Maps*, signed by Robert Kirk of Corvidae Environmental Consulting Inc., received by email on March 25, 2024;
- *Engineer Drawings*, by Aurora Professional Group Inc., dated March 6, 2024;
- *Responses to DFO and an Updated Application Package*, by Corvidae Environmental Consulting Inc., received by email on July 3, 2024; and
- *Commentary on potential for ‘crush’ or ‘smother’ of existing organisms within near shore low-tide terrace*, by Thomas R Elliot (P. Geo., P. Ag.), received by email on July 3, 2024.

Your proposal has been reviewed to determine whether it is likely to result in:

- the death of fish by means other than fishing and the harmful alteration, disruption or destruction of fish habitat which are prohibited under subsections 34.4(1) and 35(1) of the *Fisheries Act*; and
- effects to listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the *Species at Risk Act*.

The aforementioned outcomes are prohibited unless authorized under their respective legislation and regulations.

To avoid and mitigate the potential for prohibited effects to fish and fish habitat (as listed above), in addition to the measures you’ve provided in the *Responses to DFO and an Updated Application Package* (received on July 3, 2024), we also recommend implementing the measures listed below. If there is a conflict between the proposed measures as set out in the information that was submitted to the Program and the following measures, the following measures shall prevail.

- Complete in-water work within the least risk timing windows for Area 17 – Nanaimo (Summer Window: June 1 - September 1; Winter Window: December 1 - February 15).
- Only conduct works, undertakings and activities during daylight hours and when weather conditions permit visual observations of fish and marine mammals.
- Avoid conducting in-water work during periods of adverse weather.
- Minimise the duration of in-water works.
- Clearly delineate the boundaries of the eelgrass bed prior to the start of construction to ensure that all equipment avoids the eelgrass bed. No spudding down or anchoring is to occur within the eelgrass bed.
- Ensure vessels are not operating in shallow water causing direct physical disturbance to the seabed/habitat from propeller scour.
- Water-based equipment is not to ground upon the seabed except for the use of anchors or spuds needed to keep the equipment in place.
- Minimize movements/repositioning of barges and subsequent spudding and anchoring to minimize direct, physical disturbance to the seabed.
- If there is a risk of harm to a marine mammal from direct contact, temporarily suspend construction until there is no longer risk of harm from direct contact, or the individual has not been resighted for 30 minutes.
- Vessels must maintain a minimum distance of 100 m from whales, porpoises, and dolphins (or 200 meters away if these marine mammals are in resting position or with a

- calf), with the exception of populations of killer whales where the minimum distance is 400 m. In addition, vessels may not position themselves in the path of killer whales.
- Complete material placement for the boulder clusters and beach nourishment berm when the site is dewatered by a low or falling tide. In addition:
 - Salvage motile invertebrate species prior to material placement, and as needed throughout the other construction works, and return to nearby waters.
 - Salvage colonized rocks (i.e., boulders and large cobbles) where possible within the intertidal footprint, temporarily relocate outside of the project footprint, and replace within the project footprint at similar or lower elevations/depths to facilitate recolonization of the site.
 - Material placement for the beach nourishment berm is to be limited to the upper intertidal zone and backshore area.
 - Equipment used to distribute the beach nourishment material and boulder clusters should be sited as close to the shoreline bank as possible to limit disturbance in the intertidal beach area. Identify and clearly mark access corridors below the high-water mark to minimize machinery disturbance in the intertidal zone.
 - Construction activities are not to result in the trapping or stranding of fish. Any rutting caused by machine/truck access should be graded smooth before tidal inundation.
 - Use only clean, non-acid generating and non-metal leaching rock for the beach nourishment berm and boulder cluster arrays.
 - Retain a qualified professional to survey areas for the presence of forage fish (i.e., Pacific sand lance and surf smelt) spawning prior to and during construction. Use accepted methods for surveying for intertidal spawning forage fish. If forage fish spawning is detected, temporarily suspend work until a subsequent survey indicates that no incubating embryos are present.
 - Plainfin midshipman (*Porichthys notatus*) may use the underside of boulders in the intertidal zone to spawn and nest from mid-May to mid-August. If works are conducted during this time, survey boulders in the mid- to low-intertidal zone to ensure no plainfin midshipman are present. If plainfin midshipman are present, additional mitigation measures may be required to avoid harm to, or mortality of, plainfin midshipman and their eggs and/or embryos.
 - Develop and implement an erosion and sediment control plan to avoid the introduction of sediment into any waterbody during all phases of the work, undertaking or activity.
 - Implement the riparian planting plan for the site.
 - Develop and implement a spill response plan to reduce the risk of deleterious substance discharge into fish habitat.
 - Ensure equipment is in good working condition and free of leaks prior to conducting works in or near fish habitat.

Provided that you incorporate these measures into your plans, the Program is of the view that your proposal is not likely to result in the contravention of the above-mentioned prohibitions and requirements.

Should your plans change or if you have omitted some information in your proposal, further review by the Program may be required. Consult our website (<http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>) or consult with a qualified environmental consultant to determine if further review may

be necessary. It remains your responsibility to remain in compliance with the *Fisheries Act*, the *Species at Risk Act* and the *Aquatic Invasive Species Regulations*.

It is also your Duty to Notify DFO if you have caused, or are about to cause, the death of fish by means other than fishing and/or the harmful alteration, disruption or destruction of fish habitat. Such notifications should be directed to the DFO-Pacific Observe, Record and Report phone line at 1-800-465-4336 or by email at DFO.ORR-ONS.MPO@dfo-mpo.gc.ca.

Please notify the Program by email at Vanessa.Smith@dfo-mpo.gc.ca at least 10 days before starting your project, ensuring your file number and appropriate on-site contact information is included. We recommend that a copy of this letter be kept on site while the work is in progress. It remains your responsibility to meet all other federal, provincial, and municipal requirements that apply to your proposal.

Please note that this Letter of Advice does not provide relief from the obligations set out in the government of British Columbia's Riparian Areas Protection Regulations (RAPR) and cannot be construed to provide authorization pursuant to section 3(2) of the RAPR, for any work, undertaking or activity within the Riparian Assessment Area. For more information on the RAPR, including contacts, please visit: <https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/fish/aquatic-habitat-management/riparian-areas-regulation>.

Please note that the advice provided in this letter will remain valid for a period of one year from the date of issuance. If you plan to execute your proposal after the expiry of this letter, we recommend that you contact the Program to ensure that the advice remains up-to-date and accurate. Furthermore, the validity of the advice is also subject to there being no change in the relevant aquatic environment, including any legal protection orders or designations, during the one-year period.

If you have any questions with the content of this letter, please contact Vanessa Smith at our Nanaimo office by email at Vanessa.Smith@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,

Michael Lockhart
Senior Fisheries Biologist, Coastal Watershed Regulatory Operations
Fish and Fish Habitat Protection Program

c.c.: Rob Kirk (Corvidae Environmental Consulting Ltd.) at robk@corvid.pro
Julie Budgen (Corvidae Environmental Consulting Ltd.) at julieb@corvid.pro



Request for Review

Please note that Guidance on Submitting a Request for Review is available at the end of this form. This guidance explains the requirements for a Request for Review by DFO under the fish and fish habitat protection provisions of the *Fisheries Act*. All information requested must be provided. If you attach documents to your application with additional information, you must still provide appropriate summaries in the spaces provided on the application document or your application will be considered incomplete.

A) Contact information

Name of Business/Company:

n/a

Name of Proponent:

- a) Heidi Kuhrt and David Demner
- b) Pat and Bruce Sanders
- c) Ethan Wilding
- d) Claire & Jeremy Scherman

Mailing address:

- a) 235 Quarry Dr, PID: 009-555-706, Lot 1 Sections 6 And 7 Range 1 West North Salt Spring Island Cowichan District Plan 46155
- b) 239 Quarry Dr, PID: 009-555-731, Lot 3, Sections 6 And 7, Range 1 West, North Salt Spring Island, Cowichan District, Plan 4615
- c) 434 Baker Rd, PID: 009-555-781, Lot 5, Section 6, Range 1 West, North Salt Spring Island, Cowichan District, Plan 46155
- d) 431 Baker Rd, PID: 000-014-656, Amended Lot 2 (Dd 251903i) Section 6 Range 1 West North Salt Spring Island Cowichan District Plan 7144 Except Part in Plan 40042

City/Town:

Salt Spring Island

Province/Territory:

BC

Postal Code:

V8K 1J2

Tel. No. :

250-415-8553



Fax No.:

n/a

Email:

julieb@corvid.pro

Select additional contact:

Contractor/Agency/Consultant (if applicable):

Corvidae Environmental Consulting Ltd.

Mailing address:

6526 Water Street

City/Town:

Sooke

Province/Territory:

BC

Postal Code:

V9Z 0X1

Tel. No. :

250-415-8553

Fax No.:

n/a

Email:

julieb@corvid.pro

Is the Proponent the main/primary contact? ☐ Yes ☒ No

If no, please enter information for the primary contact or any additional contact.

Julie Budgen, RPBio
Biologist
Corvidae Environmental Consulting Ltd.
Mobile: 250-415-8553
julieb@corvid.pro

B) Description of Project



If your project has a title, please provide it.

BAKER BEACH GREEN SHORE MITIGATION FOR BACKSHORE AND FORESHORE, SALT SPRING ISLAND

Is the project in response to an emergency circumstance*? ☐ Yes ☒ No

Does your project involve work in water? ☒ Yes ☐ No

If yes, is the work below the High Water Mark*? ☒ Yes ☐ No

What are you planning to do? Briefly describe all project components you are proposing in or near water.

The project is proposed in response to identified bluff failure that is occurring because of the following mechanisms:

- Pore pressure/Groundwater Seepage from surficial soils, reducing cohesion and resulting in landward progression of the crest through continuous or punctuated mobilization of sediment.
- Toe-erosion of bedrock, or undercutting of shoreline sediment, which decreases stability of all materials above, often resulting in narrow failures from crest to base of coastal bluff.
- Landslip/Tree-topple is occurring on Site wherein trees near, or overhanging, the coastal bluff mobilize consequent to soil creep, pore pressure or toe-erosion. These failures result in a larger volume of surficial sediment during failure than toe-erosion instability reaching the crest. Consequent to root reinforcement or friability of bedrock, landslip is likely to mobilize underlying shale and siltstone.
- Landslide is a moderate to large scale failure event which can mobilize bedrock and overlying surficial sediment. Coastal landslides are often consequent to a history of toe-erosion, bedrock fracture and an increase in pore pressure (i.e. saturated soils & rock-fractures during a storm event) which has destabilized the coastal bluff in that area.

These mechanisms have been outlined in detail within Geohazard Assessment Reports that were completed for each property.

To reduce the risk of erosion the following activities are proposed:

- Bioengineering and Revegetation
- Remove invasive species along the backshore and re-plant with native species at a high density. Irrigate until established.
- Enhancement of backshore vegetation through planting of native species, particularly overhanging species such as Oceanspray. This is included in the detailed design plan with specific plant species, locations, spacing, methods of planting and maintenance.
- Maintain the current natural beach slope to the extent possible.
- Wave Deflection
- With the sparse placement of boulders along the low-tide terrace so as to provide relatively uniform coverage from the predominant wave direction.
- Beach Nourishment
- Apply suitable substrate for forage fish spawning in the upper reaches of the beach profile where feasible.
- Match borrowed substrate with native sediments (clean pebbles) within the project area (mimic natural conditions).

An evaluation of the recommended measures was conducted under the Green Shores for Homes credit scheme, wherefrom a score of 84/99 possible credits was determined to be accomplished. Additionally, the alignment with BC's Marine Strategy Intentions was determined to be meeting most intentions or having no effect. There was no adverse effect to BC Marine Strategy Intentions consequent to the recommended mitigation measures identified through the design process.

Please refer to attached site photographs in the Photo Log (Appendix A).

How are you planning to do it? Briefly describe the construction materials, methods and equipment that you plan to use.

Bioengineering and Revegetation:

- Hand tools

Wave Deflection

- Barge mounted with equipment to move the materials (excavator) that has been equipped with biodegradable oils.
- Rock placement directed by a qualified professional.

Beach Nourishment

- Barge with excavator.
- Strategic placement of material (e.g., gravel) to reduce erosion of upper beach and backshore areas directed by a qualified professional.

Works expected to take approximately one month and may be phased based on material availability and planting requirements. Works



to take place within the allowable work window in the area, outside of fish spawning periods.

Include a site plan (figure/drawing) showing all project components in and near water.

Are details attached? ☒ Yes ☐ No

Identify which work categories apply to your project.

☐ Aquaculture Operations	☐ Log Handling / Dumps
☐ Aquatic Vegetation Removal	☐ Log Removal
☐ Beaches	☐ Moorings
☐ Berms	☐ Open Water Disposal
☐ Blasting / Explosives	☐ Piers
☐ Boat Houses	☐ Riparian Vegetation Removal
☐ Boat Launches / Ramps	☐ Seismic Work
☐ Breakwaters	☒ Shoreline Protection
☐ Bridges	☐ Stormwater Management Facilities
☐ Cable Crossings	☐ Surface Water Taking
☐ Causeways	☐ Tailings Impoundment Areas
☐ Culverts	☐ Temporary Structures
☐ Dams	☐ Turbines
☐ Dewatering / Pumping	☐ Water Control Structures
☐ Docks	☐ Water Intakes / Fish Screens
☐ Dredging / Excavation	☐ Water Outfalls
☐ Dykes	☐ Watercourse Realignment
☐ Fishways / Ladders	☐ Weirs
☐ Flow Modification (hydro)	☐ Wharves
☐ Groundwater Extraction	☐ Wind Power Structures
☐ Groynes	
☒ Habitat Restoration	
☐ Ice Bridges	☐ Other Please Specify

Was your project submitted for review to another federal or provincial department or agency? ☒ Yes ☐ No

If yes, indicate to whom and associated file number(s).

- FrontCounter (Tracking number 100439391)
- Islands Trust (Land Use Application – DP# TBC)

C) Location of the Project

Coordinates of the proposed project Latitude N Longitude W

OR UTM zone ; Easting
 Northing

Include a map clearly indicating the location of the project as well as surrounding features.



Name of Nearest Community (City, Town, Village):

Vesuvius

Municipality, District, Township, County, Province:

Salt Spring Island, Cowichan District, BC

Name of watershed (if applicable):

n/a

Name of watercourse(s) or waterbody(ies) near the proposed project:

Booth Inlet

Provide detailed directions to access the project site:

Take Vesuvius Bay Road to Chu an Dr. Turn on Quarry Dr.

D) Description of the Aquatic Environment

Identify the predominant type of aquatic habitat where the project will take place.

- ☐ Estuary (Estuarine)
- ☐ Lake (Lacustrine)
- ☐ On the bank/shore at the interface between land and water (Riparian)
- ☐ River or stream (Riverine)
- ☒ Salt water (Marine)
- ☐ Wetlands (Palustrine)

Provide a detailed description of biological and physical characteristics of the proposed project site. This description should include information on aquatic species at risk* (<https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html>), their residence* and critical habitat* if found in the area. An overview of the distribution of aquatic species at risk and the presence of their critical habitat within Canadian waters can be found here <http://dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html>

The Project is located within the Coastal Douglas-fir (CDF) biogeoclimatic zone, specifically in the Moist Maritime Coastal Douglas-fir Subzone (CDFmm). Soils on the Site are comprised of loam, well-draining, Orthic Dystric Brunisol soils. (GALIANO soil association). The Site slopes moderately to steeply from northeast to southwest in the direction of the shoreline.

At shoreline, the Site has an 8 m – 12 m coastal bluff consisting of siltstone and shale at base and capped with 1 m – 2 m of surficial material. Above which there are three distinct slope sections of the Site. The lowest is a gently sloping (5 % - 15 %) bench above the coastal bluff where single family dwellings on Site exists, above which is a bedrock-controlled section of 30 % – 35 %. This second benching section does not exceed the angle of repose for local loamy soils, above which local sediment has increased likelihood of instability. The last slope section crests at a ridge-top and drops in elevation to Quarry Drive.

South-facing, dry banks along the shoreline and immediate backshore area were forested and characterized by a Douglas-fir – arbutus woodland with lesser amounts of shore pine and Garry oak. The structural stage was observed to be young forest with larger (mid-seral) trees occurring intermittently. Species observed are consistent with the red-listed Douglas-fir – arbutus ecological community, which is an ecological community that is at risk of being lost (extirpated, endangered or threatened) in BC. Understory species in the immediate backshore included predominantly low growth of salal and dull Oregon-grape. Banks along the shoreline were characterized by pink (hairy) honeysuckle, grasses, weeds, evergreen huckleberry, and invasive species (English ivy, scotch broom, Himalayan blackberry, bull thistle, oxeye daisy, and spurge-laurel). The moss layer was very poorly developed near the shoreline.

The shoreline type within the proposed project area is classified as low rock/boulder (Islands Trust n.d.). As per Map 11 of the Salt Spring Island Official Community Plan, a portion of the shoreline near 431 and 434 Baker Road is classified as an 'Environmentally Sensitive Shoreline Area'. Suitable forage fish spawning habitat is mapped in this area for surf smelt and Pacific sand lance. These beach spawning forage fish are an important food source for marine predators. Other notable marine environmental features include the presence of mapped eelgrass beds (flat, continuous) and patches just offshore in proximity to the Site that provide habitat for herring and forage fish.

Terrestrial species of management concern that may occur in the vicinity of the Site.



Common Name, Scientific Name, BC Provincial Status(1), SARA Schedule 1 Status(2)

Species

Threaded vertigo, *Vertigo rowellii*, Blue, Special Concern
Painted Turtle - Pacific Coast Population, *Chrysemys picta pop.*, Red, Threatened
Macrae's clover, *Trifolium dichotomum*, Red, n/a
Leafless wintergreen, *Pyrola aphylla*, Blue, n/a
Western screech-owl, *kennicottii* subspecies, *Megascops kennicottii kennicottii*, Blue, Threatened
Ecological Community
Garry oak / oceanspray, *Quercus garryana* / *Holodiscus discolor*, Red, n/a
Garry oak / California brome, *Quercus garryana* / *Bromus carinatus*, Red, n/a
Grand fir / dull Oregon-grape, *Abies grandis* / *Mahonia nervosa*, Red, n/a
Douglas-fir / dull Oregon-grape, *Pseudotsuga menziesii* / *Mahonia nervosa* Red, n/a
Trembling aspen / Pacific crab apple / slough sedge, *Populus tremuloides* / *Malus fusca* / *Carex obnupta*, Red, n/a
1 BC CDC 2023. BC Species and Ecosystems Explorer. Ministry of Environment.
2 Government of Canada 2023. Species at Risk Public Registry

Aquatic species at risk that may occur in the vicinity of the Site.

Common Name,,Scientific Name, SARA Schedule 1 Status(1)

Steller Sea Lion, *Eumetopias jubatus*, Special Concern
Killer Whale (Northeast Pacific southern resident population), *Orcinus orca*, Endangered
Killer Whale (Northeast Pacific transient population), *Orcinus orca*, Threatened
Humpback Whale, *Megaptera novaeangliae*, Special Concern
Harbour Porpoise, *Phocoena phocoena*, Special Concern
Grey Whale (Eastern North Pacific population), *Eschrichtius robustus*, Special Concern
Leatherback Sea Turtle, *Dermochelys coriacea*, Endangered
Northern Abalone, *Haliotis kamtschatkana*, Endangered
Yelloweye Rockfish, *Sebastes ruberrimus*, Threatened
Tope, *Galeorhinus galeus*, Special Concern

(1) Government of Canada 2023. Species at Risk Public Registry

There are four identified erosion mechanisms:

- Pore pressure / groundwater seepage;
- Toe-erosion of bedrock, or undercutting of shoreline sediment ;
- Landslip/Tree-topple;
- Landslide.

Photo log and maps attached (Appendix A and B

Include representative photos of affected area (including upstream and downstream area) and clearly identify the location of the project.

E) Potential Effects of the Proposed Project

Have you reviewed the Pathways of Effects (PoE) diagrams (<http://www.dfo-mpo.gc.ca/pnw-ppe/pathways-sequences/index-eng.html>) that describe the type of cause-effect relationships that apply to your project?

☒ Yes ☐ No

If yes, select the PoEs that apply to your project.

☒ Addition or removal of aquatic vegetation	☒ Placement of material or structures in water
☐ Change in timing, duration and frequency of flow	☒ Riparian Planting
☐ Cleaning or maintenance of bridges or other structures	☐ Streamside livestock grazing
☐ Dredging	☐ Structure removal
☐ Excavation	☐ Use of explosives



☐ Fish passage issues	☒ Use of industrial equipment
☐ Grading	☐ Vegetation Clearing
☐ Marine seismic surveys	☐ Wastewater management
☐ Organic debris management	☐ Water extraction
☐ Placement of marine finfish aquaculture site	

Will there be changes (i.e., alteration) in the fish habitat*? ☒ Yes ☐ No ☐ Unknown

If yes, provide a description.

The proposed mitigation for shoreline erosion will have a net benefit for fish and fish habitat. The removal of invasive species replaced with native vegetation will provide stability of the coastal bluff and increase shade in the backshore. Beach nourishment and placement of boulders for wave deflection will further reduce the risk of erosion and minimize fine sediment from entering the marine environment.

Is there likely to be a harmful alteration, disruption or destruction of habitat used by fish? ☐ Yes ☒ No ☐ Unknown

Is there likely to be destruction or loss of habitat used by fish? ☐ Yes ☒ No ☐ Unknown

What is the footprint (area in square meters) of your project that will take place below the high water mark*?

Beach nourishment and wave deflection will occur at each property totaling approximately 1 ha (25 m x 400 m). See Appendix B for proposed placement of clean pebbles and boulder clusters.

Is your project likely to change water flows or water levels? ☐ Yes ☒ No ☐ Unknown

If your project includes withdrawing water, provide source, volume, rate and duration.

n/a

If your project includes a water control structure, provide the % of flow reduction.

n/a

If your project includes discharge of water, provide source, volume and rate.

n/a

Will your project cause death of fish? ☐ Yes ☒ No ☐ Unknown

If yes, how many fish will be killed (for multi-year project, provide average)? What species and lifestages?

n/a

What is the time frame of your project?

The construction will start on 08/01/2024 and end by 02/28/2025

If applicable, the operation will start on MM/DD/YYYY and end by MM/DD/YYYY

If applicable, provide schedule for the maintenance

There are two timeframes proposed for this work:

August-September, 2024

December 2024 – February 15, 2025 (if work cannot be started/completed in first window)

If applicable, provide schedule for decommissioning

n/a

Are there additional effects to fish and fish habitat that will occur outside of the time periods identified above?

☐ Yes ☒ No



(If yes, provide details)

n/a

Can you follow appropriate Timing Windows (<http://www.dfo-mpo.gc.ca/pnw-ppe/timing-periodes/index-eng.html>) for all your project activities below the High Water Mark*? ☒ Yes ☐ No

(If no, provide explanations.)

n/a

Have you considered and incorporated all options for redesigning and relocating your project to avoid negative effects to fish and fish habitat?

☒ Yes ☐ No

If yes, describe.

Yes, it is not possible to redesign or relocate the project as it is site specific to reduce erosion risk. The project is designed using the guidance provided in Green Shore for Homes and BC's Marine Strategy Intentions.

Have you consulted DFO's Fish and Fish Habitat Protection Measures Habitat (<https://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html>) to determine which measures apply to your project? ☒ Yes ☐ No

Will you be incorporating applicable measures into your project?

☒ Yes ☐ No

If yes, identify which ones. If No, identify which ones and provide reasons.

Applicable measures that will be incorporated are listed below:

- Avoiding killing fish by means other than fishing.
- Planning work, undertaking or activity to protect fish, including their eggs, juveniles, spawning adults, and the organisms upon which they feed and migrate.
- Maintain fish passage by avoiding changing water flow, water level, or obstructing with the movement and migration of fish.
- Environmental monitoring, including water quality, during all project activities that may result in potential negative effects to fish and fish habitat.
- Maintaining all machinery on site in a clean condition free of fluid leaks to prevent any deleterious substances from entering the water.
- Avoid depositing any deleterious substances in the watercourse.
- Develop a response plan to be implemented immediately in the event of a spill.
- Ensure large marine spill kit is visible and accessible.
- Refuel with absorbent pads, spill trays, and preform in a way that does not allow contaminants to enter the water.
- Stop work and contain deleterious substances to prevent dispersal.
- Report any spills of sewage, oil, fuel, or other deleterious material into a water body.
- Ensure clean up measures are suitably applied so as not to result in further alteration of the bed or banks of the watercourse.
- Clean up and appropriately dispose of the deleterious substances.
- Immediately report any spills to water of sediments, debris, concrete fines, wash or contact water to 1-800-663-3456. If possible, immediately remove the materials from the water and implement emergency mitigation and cleanup measures.

Have you considered whether DFO standards and codes of practice apply to your project?

☐ No ☒ Yes

If Yes, include a list.

n/a

Have you considered other avoidance and mitigation measures?

☒ No ☐ Yes



If Yes, include a list.

n/a

Are there any relevant measures that you are unable to incorporate?

☐ Yes ☒ No

(If yes, identify which ones.)

n/a

What harmful effects to fish and fish habitat do you foresee after taking into account the avoidance and mitigation measures described above?

Although very unlikely, there is the potential for deleterious substances (e.g., sediment, fluids from machinery) from the project to enter the waterbody, which could cause contravention of the Fisheries Act. By implementing the mitigation measures outlined in this document, the Project does not anticipate, or intend any harmful effects to fish or fish habitat.

Do these include effects on aquatic species at risk*?

☐ Yes ☒ No

If yes, please describe, including how many individuals will be harmed, harassed, or otherwise affected by the project, and how?

n/a

Do these include effects on areas identified as their residence or critical habitat?

☐ Yes ☒ No

If yes, please describe

n/a

Are there any aquatic invasive species in the vicinity of your project area?

☐ Yes ☒ No

(If yes, identify which ones.)

n/a

Does your project aim to, or will it be likely to, effect any of these aquatic invasive species?

☐ Yes ☒ No

If yes, how?

n/a



F) Signature

I, Robert Kirk (print name) certify that the information given on this form is to the best of my knowledge, correct and completed.



Signature

24/03/2025

Date

Information about the above-noted proposed work or undertaking is collected by DFO under the authority of the *Fisheries Act* for the purpose of administering the Fish and Fish Habitat protection provisions of the *Fisheries Act*. Personal information will be protected under the provisions of the *Privacy Act* and will be stored in the Personal Information Bank DFO-PPU-680. Under the *Privacy Act*, Individuals have a right to, and on request shall be given access to any personal information about them contained in a personal information bank. Instructions for obtaining personal information are contained in the Government of Canada's Info Source publications available at www.infosource.gc.ca or in Government of Canada offices. Information other than "personal" information may be accessible or protected as required by the provision of the *Access to Information Act*.

**All definitions are provided in Section G of the Guidance on Submitting a Request for Review*



Guidance on Submitting a Request for Review

This document explains the requirements for a Request for Review by DFO under the fish and fish habitat protection provisions of the *Fisheries Act*. To determine whether you should request a review, visit DFO's Projects Near Water webpage (<http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>).

Incomplete Requests for Review will be returned to the applicant without review by DFO. All information requested must be provided. If you attach documents to your application with additional information, you must still provide appropriate summaries in the spaces provided on the application document or your application will be considered incomplete.

Section A: Contact Information

Provide the full legal name of the proponent and primary mailing address for the proponent. When the proponent is a company, identify the full legal registered name of the company.

If applicable, also provide the contact information of the duly authorized representative of the proponent. Please note that a copy of correspondence to Contractor/Agency/Consultant will also be sent to the Proponent.

Section B: Description of Project

This information is meant to provide background about the proposed project. All components of the proposed project in or near water, must be described.

Proponents should provide information about all appropriate phases of the project, i.e., the construction, operation, maintenance and closure phases for the proposed project.

All details about the construction methods to be used, associated infrastructure, permanent and temporary structure, structure type (e.g. corrugated steel pipe vs box culvert), structures dimension, building materials to be used, machinery and equipment to be used must also be provided. For example, the construction of **permanent structures** may require the construction of temporary structures such as temporary dikes, in conjunction with other associated activities like the withdrawal of water, land clearing, excavation, grading, infilling, blasting, dredging, installing structures, draining or removing debris from water. Similarly, the equipment and materials to be used may include hand tools, backhoes, gravel, blocks or armor stone (provide the average diameter), concrete (indicate if pre-cast or poured in-water), steel beams or wood.

When physical structures in or near water are proposed, provide the plan and specifications of those works which would require a review.

Section C: Location of the Project

The purpose for this information is to describe and illustrate the location of the proposed project, and to provide geographical and spatial context. The information should also facilitate an understanding of how the project will be situated in relation to existing structures.

The details to be provided must include:

- Coordinates of the project (e.g., Latitude and Longitude or Universal Transverse Mercator Grid coordinates);
- A map(s), site plan, or diagrams indicating the high water mark and the location, size and nature of proposed and existing structures (e.g., floating or fixed), landmarks and proposed activities. In a marine setting, it may be helpful to depict the approximate location of the proposed development on a nautical chart or showing the relation of the site to sea marks or other navigational aids. These plans, maps or diagrams should be at an appropriate scale to help determine the relative size of the proposed structures and activities, the proximity to the watercourse or waterbody and the distance from existing structures;
- The community nearest to the location of the proposal as means to provide a general reference point. When possible, proponents should use geographical names recognized by the Geographical Names Board of Canada (<http://www.nrcan.gc.ca/earth-sciences/geography-boundary/geographical-name/11680>).
- If available, provide aerial photographs or satellite imagery of the water source(s) and waterbody(ies);
- Names of the watershed(s), water source(s) and/or waterbody(ies) likely to be affected by the proposal; and
- Brief directions to access the proposed project site.



Section D: Description of the Aquatic Environment

Proponents must describe the environmental context and aquatic resources present at the proposed site. The information must identify the current state of the fish and fish habitat prior to the carrying on of the project.

It is important to include information about the fish species present, the biological, chemical, physical features present (habitat characteristics), and the fish life-cycle functions (fish characteristics).

The spatial scope for assessing fish and fish habitat should encompass the direct physical footprint of the project, and the upstream and downstream areas affected.

As an example, the following is a non-exhaustive and non-prescriptive list of some common attributes which may characterize the aquatic environment:

- Type of water source or watercourse (groundwater, river, lake, marine, estuary, etc.);
- Characteristics of the water source or waterbody could include:
 - Substrate characterization - describe the types of substrate (e.g., bedrock, boulder, cobble, gravel etc.), identify the predominant substrate type (e.g., 80% cobble, 20% gravel etc.) and provide maps of the substrate;
 - Aquatic and riparian vegetation characterization - identify the prevalent types of vegetation (e.g. rooted, submerged, emergent, etc.), identify the relative abundance of the vegetation (e.g., 10% cattails, 80% grass, 10% sedge) , indicate the predominant vegetation (e.g., by species or types) and identify the vegetation densities (e.g., type of vegetation/ area);
 - Flow characterization - specify if the flow is controlled or if it is natural, identify if the flow is permanent or intermittent, identify the current and tide (marine environment) etc.;
 - Physical waterbody characterization - identify the average depth of water for water bodies, identify bathymetry of water bodies, provide bathymetric maps where available, channel width (determine the width of the channel from the high water mark), slope ;
 - Water quality characterization - (e.g., annual or average pH, salinity, alkalinity, total dissolved solids, turbidity, temperature etc.);
 - Biological water quality characterization - (e.g., benthic macro-invertebrates, zooplankton, phytoplankton, etc.)
- Fish species characterization - identify the fish species (including molluscs, crustaceans, etc.) known or suspected to be in the area, predator prey relationships etc. Identify what source of information was used to determine the presence of fish in that area; and
- Estimate the fish abundance - estimate the number of fish present, estimate the year class for each species etc.

There are many different methods and attributes available to characterize fish and fish habitat. Proponents must describe all sources of information used, all fish and environment sampling techniques used, all modelling techniques used and all other approaches used to define the fish and fish habitat. Proponents are encouraged to use recognized fisheries inventory methods such as those approved by DFO or provinces and territories, and/or scientifically defensible methodologies and techniques whenever possible.

Whenever possible, proponents should support descriptions of the aquatic environment with the use of detailed drawings, such as plans or maps and photographs of the habitat features. In an offshore marine setting, photos may not be useful to depict the proposed development site. Instead describe and/or sketch the specific features of the sea floor which may include the presence of submarine features such as canyons, cliffs, caverns, etc.

Section E: Potential Effects of the Proposed Project

The objective of this section is to identify all anticipated effects on fish and fish habitat likely to be caused by the project. Proponents should consider all mitigation or avoidance techniques.

The description must include qualitative and/or quantitative information about the predicted/potential effects to fish species and fish habitat. Some examples of likely effects may include mortality to fish, area of habitat loss, change to flow, changes to habitat function, reduction in prey availability etc.



The spatial scope of the aquatic effects assessment would include the direct physical "footprint" of the proposed project, and any areas indirectly affected, such as downstream or upstream areas. The footprint of each component of the project below the higher water mark should be provided individually. This may also include areas in or on the water, on the shoreline, coast or bank(s) (i.e., in the riparian zone).

The assessment must include the following attributes:

- Identification of all fish species affected by the proposed project as well as their life stages (e.g., juvenile, yearling, adult, etc.);
- Identification of the type of fish habitat affected (e.g., spawning habitat - gravel and cobble, feeding and rearing areas - side channel slough, small tributaries, etc.), estimate of the affected area (e.g., square meters or hectares);
- Description of the effect (e.g., mortality to fish from entrapment, delayed migration of spawning adults, reduction in prey availability, etc.);
- Probability of the effect - this is the likelihood of the effect occurring (e.g., probability of fish strike from turbines for specific fish sizes, probability of sediment plume within a distance from source, etc., or qualitative assessment: low, medium, high)
- Magnitude of the effect - this is the intensity or severity of the effect (e.g., total number of fish affected, or qualitatively assessment: low, medium, high).
- Geographic extent of the effect - this is the spatial range of the effect (e.g., localized to 100m from the work, channel reach or lake region, entire watershed etc.); and
- Duration of the effect - this is the temporal period for which the effect will persist (e.g., duration of delay to fish migration in hours, days, months or years).

The information to be provided must also describe the methods and techniques used to conduct the assessment. As much as possible, methods and techniques used should be scientifically defensible.

The schedule should, at minimum, identify the proposed start and end dates for carrying out each proposed activity, and where applicable, identify the respective phase of the proposal; i.e., the construction, operation, maintenance and closure phases. In some cases, in order to provide additional context, it may be relevant to identify other information such as the expected life span of permanent and temporary structures.

Proponents must provide comprehensive information about all available measures that are proposed to avoid or mitigate potential harmful alteration, disruption or destruction of fish habitat, or death of fish (e.g., in standards or codes of practice).

Residual harmful impacts that remain after the application of such measures.

It is important to clearly describe and quantify harmful impacts because DFO will use this information as part of its decision making on whether harmful alteration, disruption or destruction of fish habitat or death of fish is likely and an authorization is required under subsection 35(2)(b) or 34.4(2)(b) of the *Fisheries Act*.

Section F: Submission and Signature

The proponent must sign their application. A signed original of the Request for Review must be provided to the regional DFO office (<http://www.dfo-mpo.gc.ca/pnw-ppe/contact-eng.html>), even if an electronic copy was sent by email. Should the review of your project indicate that harmful alteration, disruption or destruction of fish habitat or death of fish is likely, the information provided in the Request for Review document can be referred to in the subsequent application for an authorization under Paragraphs 35(2)(b) or 34.4 of the *Fisheries Act*.

Section G: Definitions

Aquatic Species at Risk: an extirpated, endangered, threatened species, or a species of special concern. A non-exhaustive list of aquatic species at risk found in Canadian waters can be found here (<http://www.dfo-mpo.gc.ca/species-especes/sara-lep/identify-eng.html>).

Aquatic Species at Risk Critical Habitat

the habitat that is necessary for the survival or recovery of a listed wildlife species and that is identified as the species critical habitat in the recovery strategy or in an action plan for the species.



Aquatic Species at Risk Residence: the specific dwelling place, such as a den, nest or other similar area or a place that is occupied or habitually occupied by one or more individuals during all or part of their life cycles, including breeding, rearing, staging, wintering, feeding, or hibernating.

Aquatic invasive species: are fish, invertebrate or plant species that have been introduced into a new aquatic environment, outside of their natural range. Once introduced, aquatic invasive species populations can grow quickly because they don't have natural predators in their new environment. As a result, they can outcompete and harm native species. They can even alter habitats to make them inhospitable for the native species. A non-exhaustive list of aquatic invasive species can be found here (<http://www.dfo-mpo.gc.ca/species-especes/ais-eae/identify-eng.html>).

Emergency circumstance: If your project must be conducted in response to an emergency, you may apply for an Emergency Authorization. The emergency situations are:

- The project is required as a matter of national security
- The project is being conducted in response to a national emergency where special temporary measures are being taken under the federal *Emergencies Act*
- The project is required to address an emergency that poses a risk to public health or safety or to the environment or property.

Fish habitat: means habitat that can directly or indirectly support life processes. This includes but is not limited to: spawning grounds, nursery, rearing, food supply and migration areas.

Harmful alteration, disruption or destruction means any temporary or permanent change to fish habitat that directly or indirectly impairs the habitat's capacity to support one or more life processes of fish.

High Water Mark: The usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to leave a mark on the land.

APPENDIX A - PHOTO LOG



235 Quarry Drive:
Progressive sloughing of surficial
soil, driven by stormwater
seepage.
Minor toe erosion of friable
bedrock present at this location.



239 Quarry Drive:
Bedrock at coastline has dipped,
as shown by dashed line,
exposing surficial soil to wave
action and spray-erosion, under-
cutting protective root-masses.
Presence of large woody debris
is a benefit, but transient.



434 Baker Road:

Background: surficial soil
vulnerable to wave erosion
rising from bedrock.
Undercut root-masses
overhanging.

Foreground: Presence of a natural
'rock cluster', which has been
recommended to be reproduced
during the proposed beach
nourishment program.



431 Baker Road:

Lack of bedrock at surface in this location allows for undercutting of root mass which constitutes the shoreline along this property. Some undercuts were observed to be greater than 1.0m in depth.

235 QUARRY DRIVE - FACING SOUTH (JUNE 2023)



WEST OF 235 QUARRY DRIVE - FACING NORTH -
CRD STAIRCASE AND ARMOURING (JUNE 2023)



WEST OF 235 QUARRY DRIVE - FACING NORTH -
CRD STAIRCASE AND ARMOURING (JUNE 2023)



235 QUARRY DRIVE - FACING NORTH (JUNE 2023)





235 QUARRY DRIVE - FACING NORTH (JUNE 2023)





239 QUARRY DRIVE - TREE TOPPLE (22-FEB-2024)



239 QUARRY DRIVE - TREE TOPPLE (22-FEB-2024)



239 QUARRY DRIVE - TREE TOPPLE (22-FEB-2024)



APPENDIX B - MAPS



Capital Regional District

Sensitive Shoreline Area

- Sensitive Shoreline Area
- Property Boundary

Forage Fish Spawning Habitat

- Surf Smelt
- Surf Smelt/Pacific Sandlance

Eelgrass Meadow (2022)

- Dense
- Moderate
- Undetermined



0 100 200 400 600 Meters
Project: 235 Quarry Road, 239 Quarry Road, 431 Baker Road & 434 Baker Road
Sources: Capital Regional District

CORVIDAE
ENVIRONMENTAL CONSULTING INC

Corvidae Project No.
COR-2023-050

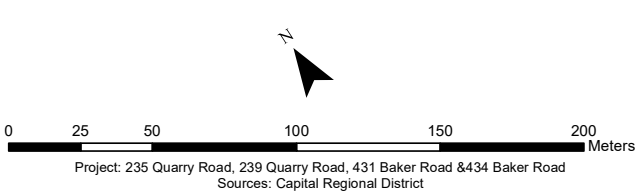
Rev. #	Date
0	October 19, 2023
1	October 23, 2023

Figure

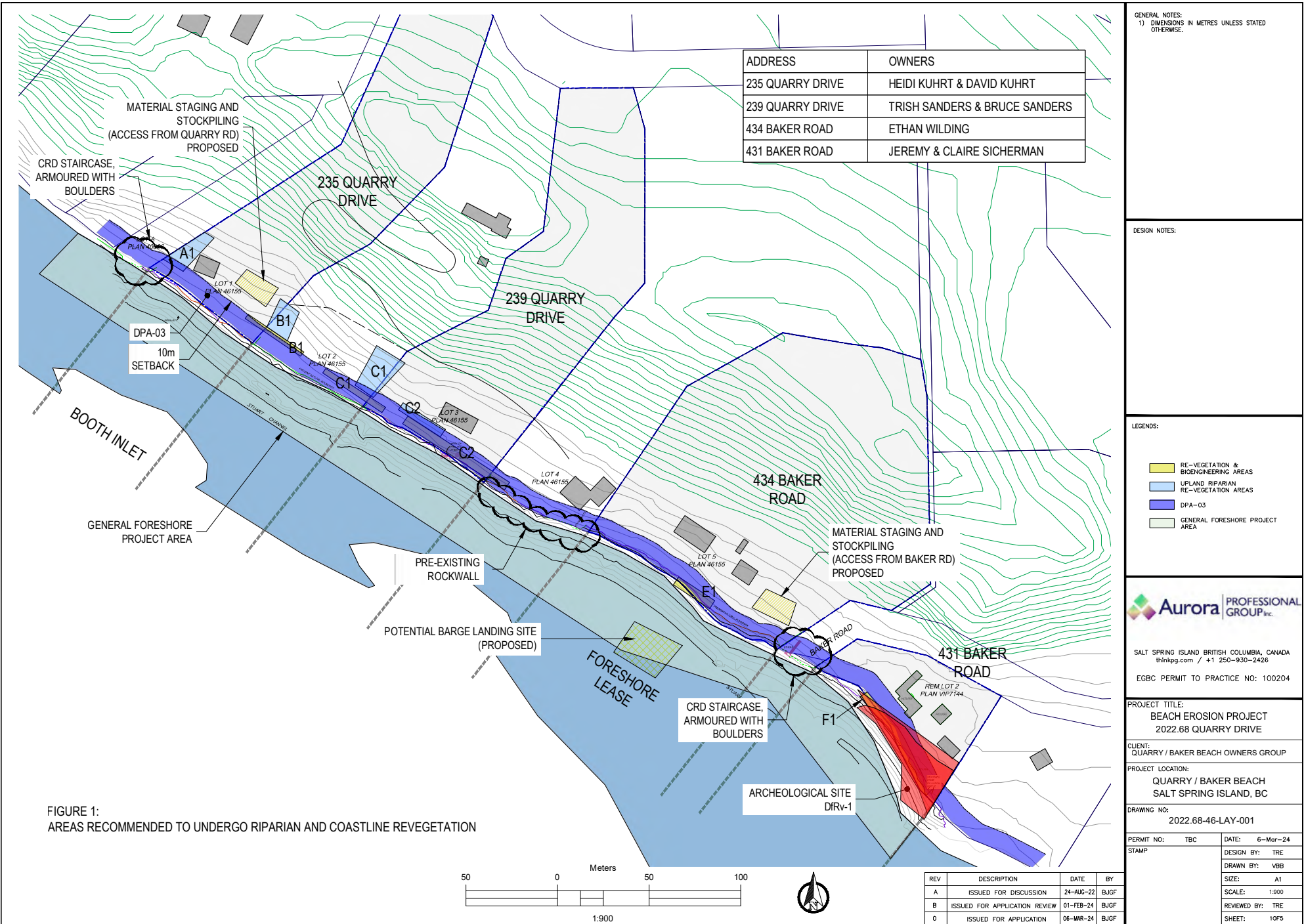


Summary of Areas Recommended to Mitigation

Pot Size	Treatment Recommendation	Planting Area
• 1 gallon	Upland riparian revegetation	Concept Planting
• 2 gallon	Re-vegetation and bioengineering	
• 3 gallon	Recommended wave deflection	
	Beach nourishment application areas	



	Rev. #	Date
	0	January 26, 2024
Corvidae Project No. COR-2023-050		Figure 1



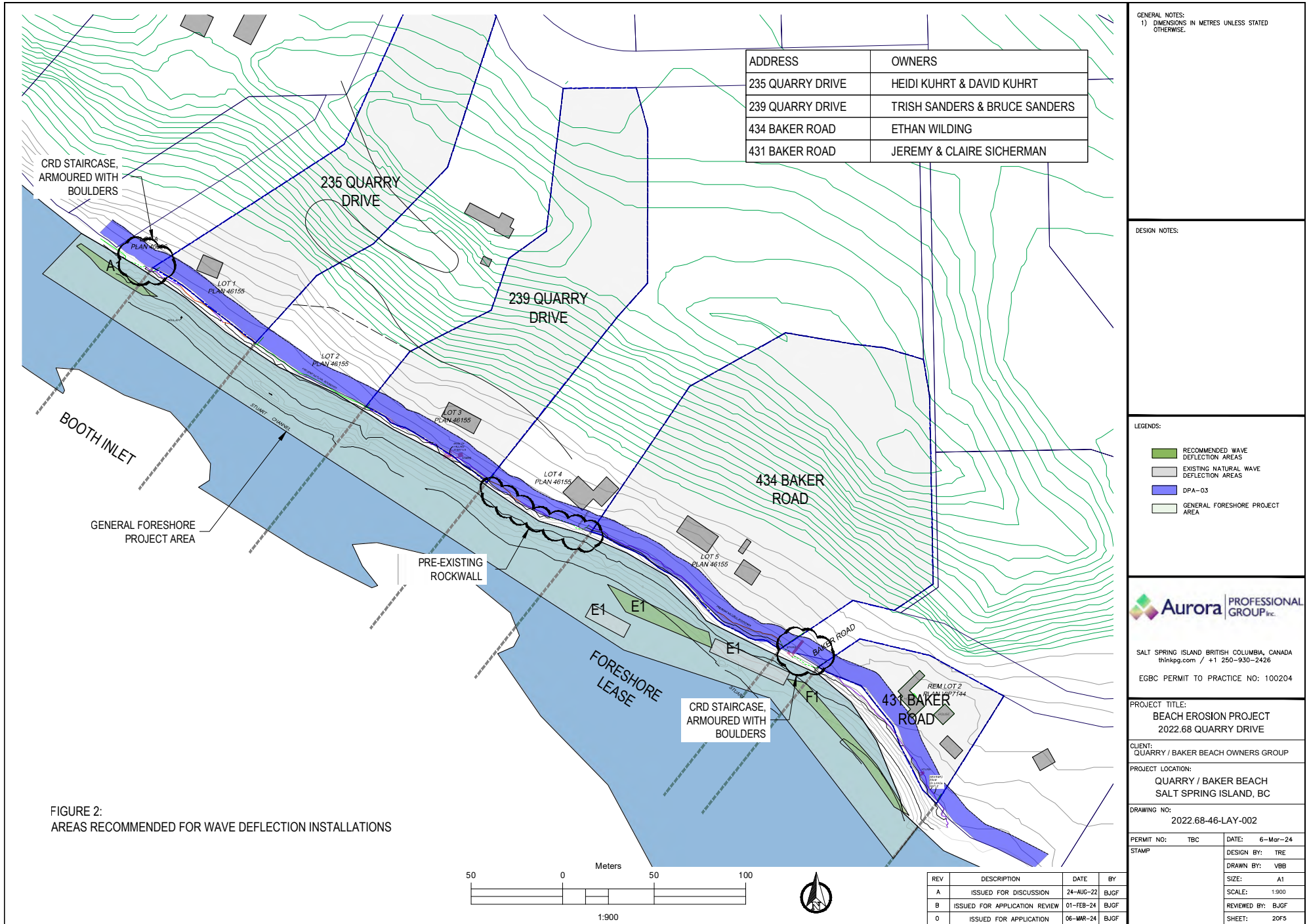
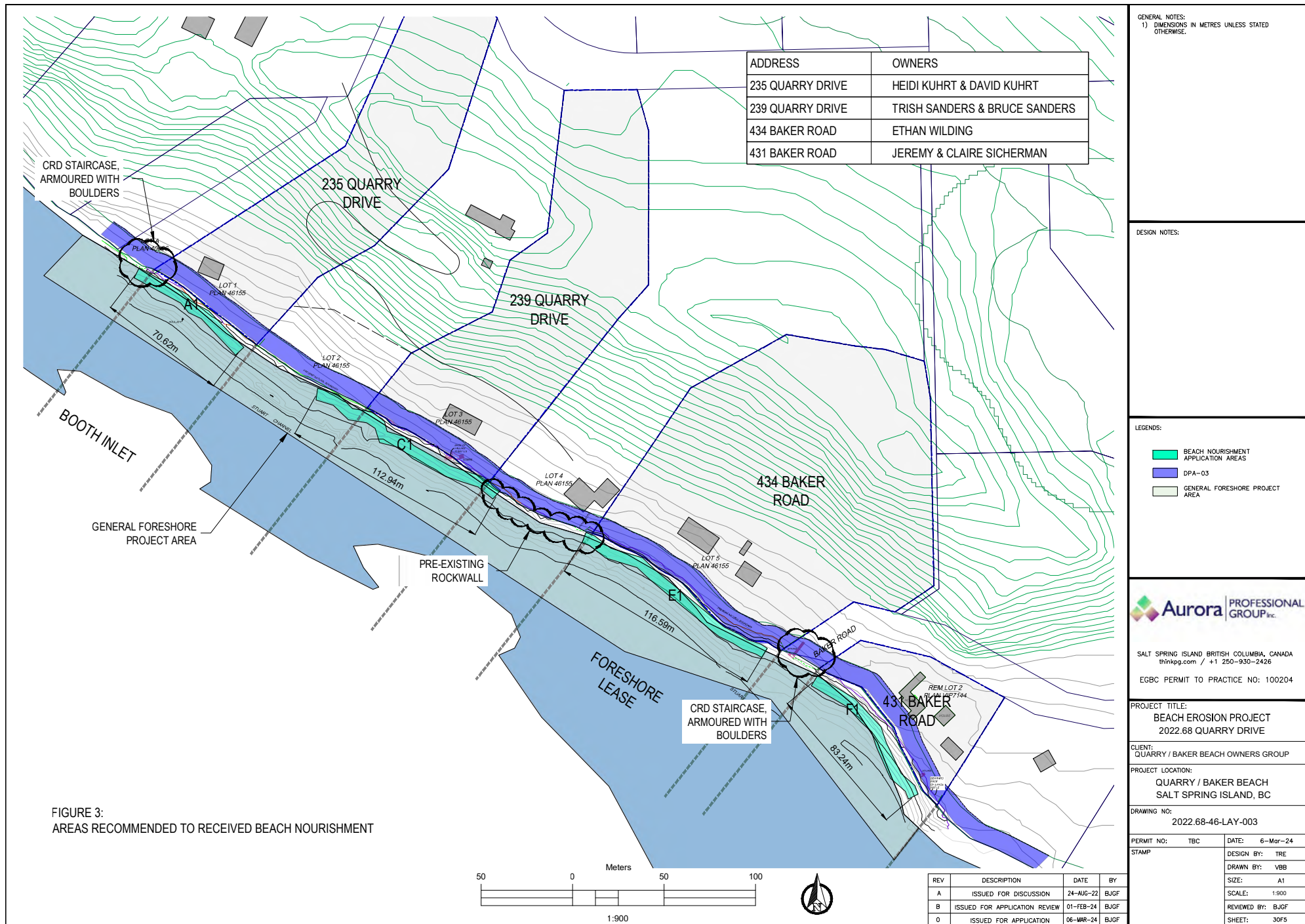


FIGURE 2:
AREAS RECOMMENDED FOR WAVE DEFLECTION INSTALLATIONS



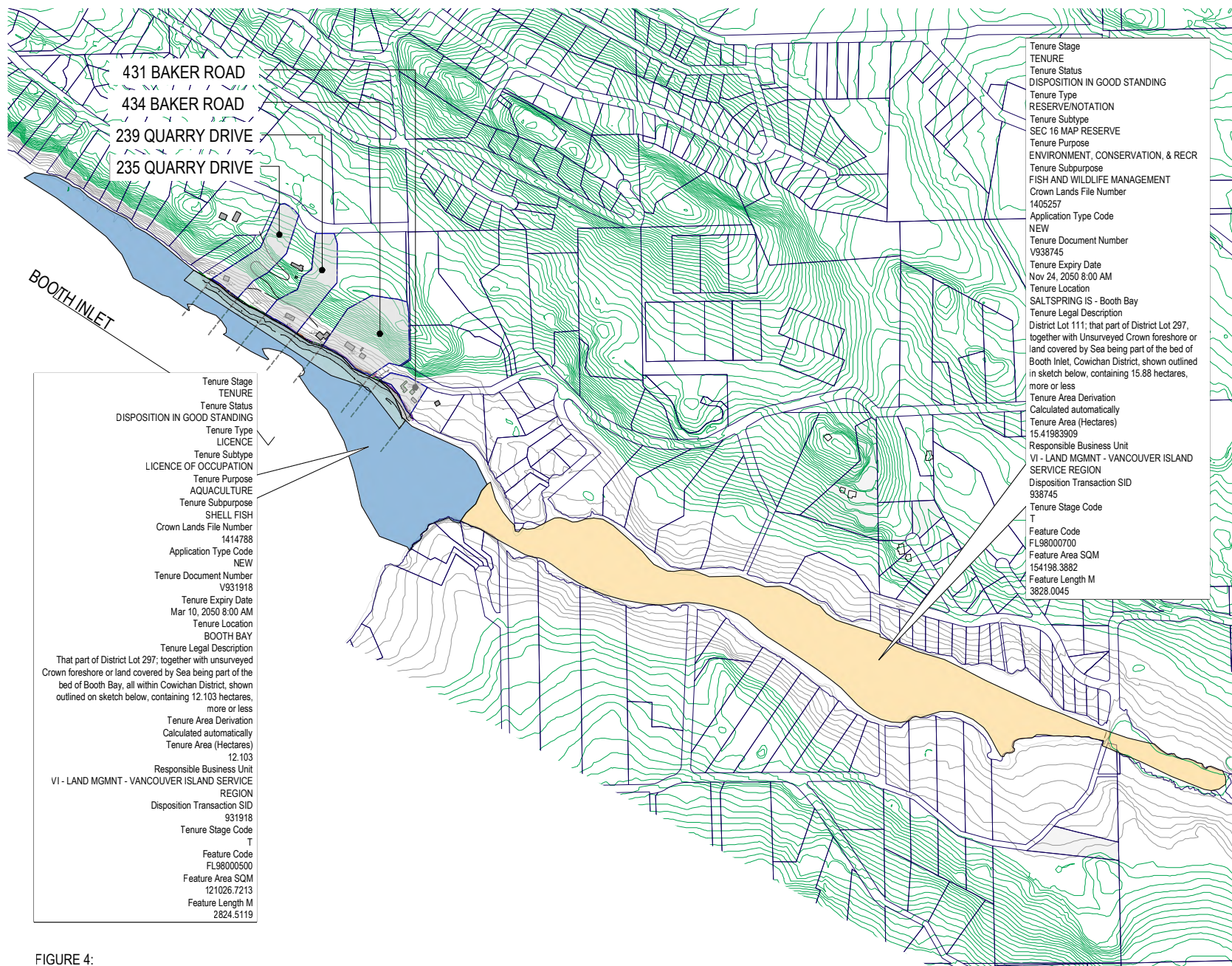


FIGURE 4:
FORESHORE LEASES

Tenure Stage
TENURE
Tenure Status
DISPOSITION IN GOOD STANDING
Tenure Type
RESERVE/NOTATION
Tenure Subtype
SEC 16 MAP RESERVE
Tenure Purpose
ENVIRONMENT, CONSERVATION, & RECR
Tenure Subpurpose
FISH AND WILDLIFE MANAGEMENT
Crown Lands File Number
1405257
Application Type Code
NEW
Tenure Document Number
V938745
Tenure Expiry Date
Nov 24, 2050 8:00 AM
Tenure Location
SALTSPRING IS - Booth Bay
Tenure Legal Description
District Lot 111; that part of District Lot 297,
together with Unsurveyed Crown foreshore or
land covered by Sea being part of the bed of
Booth Inlet, Cowichan District, shown outlined
in sketch below, containing 15.88 hectares,
more or less
Tenure Area Derivation
Calculated automatically
Tenure Area (Hectares)
15.41983909
Responsible Business Unit
VI - LAND MGMNT - VANCOUVER ISLAND
SERVICE REGION
Disposition Transaction SID
938745
Tenure Stage Code
T
Feature Code
FL98000700
Feature Area SQM
154198.3882
Feature Length M
3828.0045

Tenure Stage
TENURE
Tenure Status
DISPOSITION IN GOOD STANDING
Tenure Type
LICENCE
Tenure Subtype
LICENCE OF OCCUPATION
Tenure Purpose
AQUACULTURE
Tenure Subpurpose
SHELL FISH
Crown Lands File Number
1414788
Application Type Code
NEW
Tenure Document Number
V931918
Tenure Expiry Date
Mar 10, 2050 8:00 AM
Tenure Location
BOOTH BAY
Tenure Legal Description
That part of District Lot 297; together with unsurveyed
Crown foreshore or land covered by Sea being part of the
bed of Booth Bay, all within Cowichan District, shown
outlined on sketch below, containing 12.103 hectares,
more or less
Tenure Area Derivation
Calculated automatically
Tenure Area (Hectares)
12.103
Responsible Business Unit
VI - LAND MGMNT - VANCOUVER ISLAND SERVICE
REGION
Disposition Transaction SID
931918
Tenure Stage Code
T
Feature Code
FL98000500
Feature Area SQM
121026.7213
Feature Length M
2824.5119

GENERAL NOTES:
1) DIMENSIONS IN METRES UNLESS STATED
OTHERWISE.

DESIGN NOTES:

LEGENDS:



SALT SPRING ISLAND BRITISH COLUMBIA, CANADA
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EGBC PERMIT TO PRACTICE NO: 100204

PROJECT TITLE:
BEACH EROSION PROJECT
2022.68 QUARRY DRIVE

CLIENT:
QUARRY / BAKER BEACH OWNERS GROUP

PROJECT LOCATION:
QUARRY / BAKER BEACH
SALT SPRING ISLAND, BC

DRAWING NO:
2022.68-46-LAY-004

PERMIT NO:	TBC	DATE:	6-Mar-24
STAMP		DESIGN BY:	TRE
		DRAWN BY:	VBB
		SIZE:	A1
		SCALE:	As Shown
		REVIEWED BY:	BJGF
		SHEET:	40FS

REV	DESCRIPTION	DATE	BY
A	ISSUED FOR DISCUSSION	24-AUG-22	BJGF
B	ISSUED FOR APPLICATION REVIEW	01-FEB-24	BJGF
C	ISSUED FOR APPLICATION	06-MAR-24	BJGF

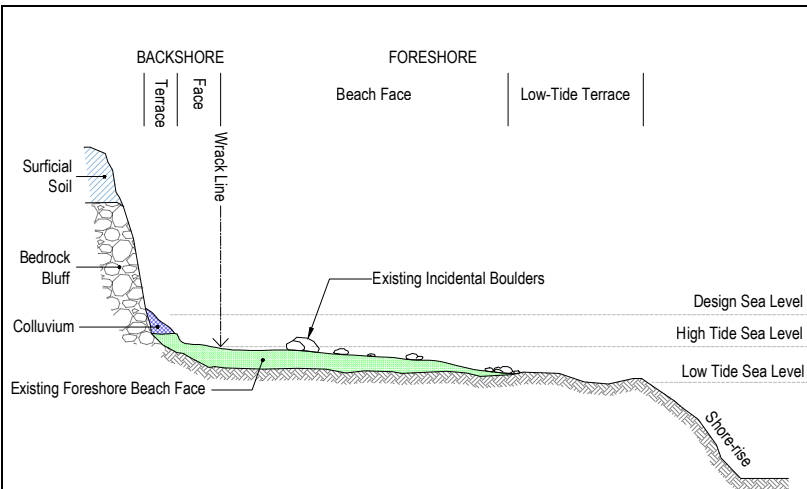


FIGURE 5:
NOMINAL CROSS-SECTION OF A PROJECT AREA
CURRENT CONDITION

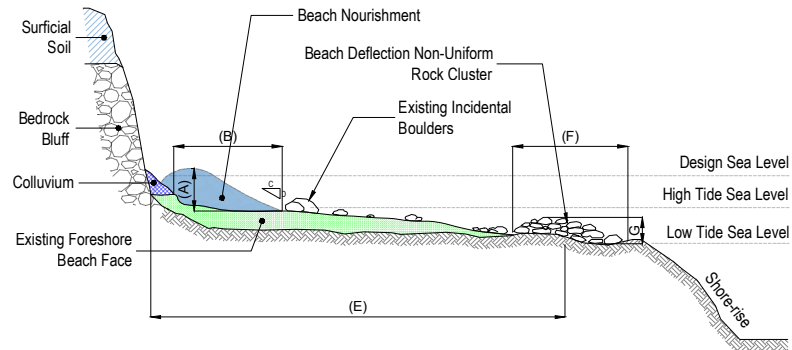


FIGURE 6:
NEAR-TERM CROSS-SECTION

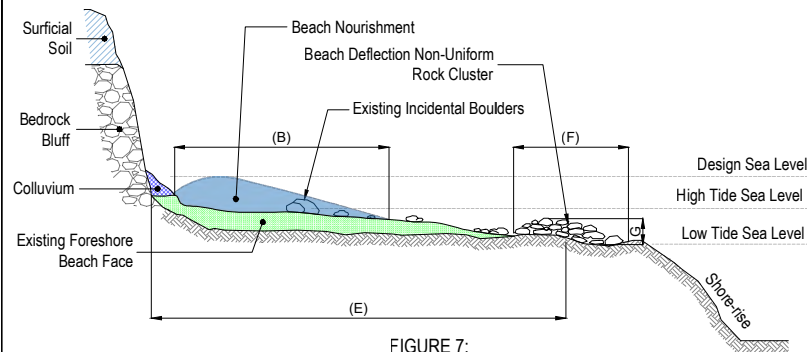


FIGURE 7:
5 YEAR CROSS-SECTION

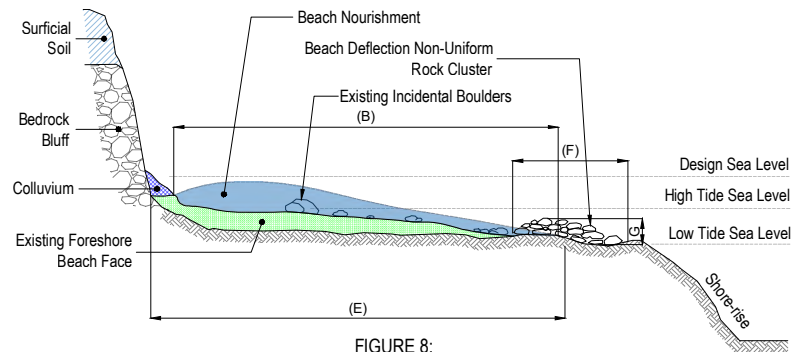


FIGURE 8:
15 YEAR CROSS-SECTION

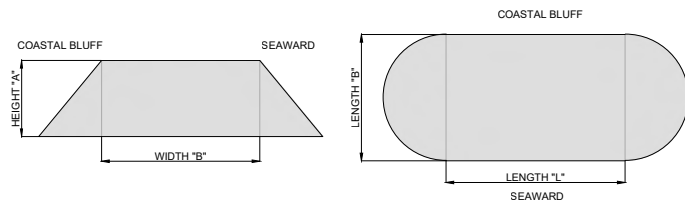


FIGURE 9:
INSTALL PROFILE
(MASS PLACEMENT)

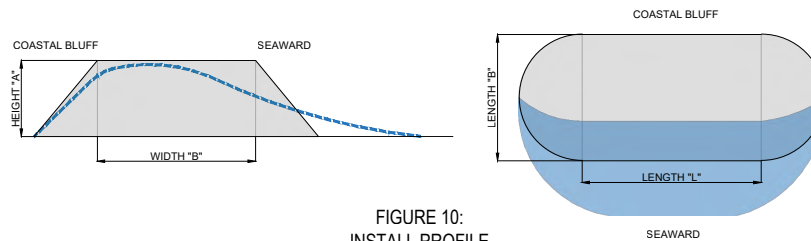


FIGURE 10:
INSTALL PROFILE
(SHAPING)

REV	DESCRIPTION	DATE	BY
A	ISSUED FOR DISCUSSION	24-AUG-22	BJGF
B	ISSUED FOR APPLICATION REVIEW	01-FEB-24	BJGF
0	ISSUED FOR APPLICATION	06-MAR-24	BJGF

GENERAL NOTES:
1) DIMENSIONS IN METRES UNLESS STATED OTHERWISE.

DESIGN NOTES:

LEGENDS:

- Beach Nourishment
- Existing Foreshore Beach Face
- Colluvium
- Surficial Soil
- Bedrock Bluff

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EGBC PERMIT TO PRACTICE NO: 100204

PROJECT TITLE:
BEACH EROSION PROJECT
2022.68 QUARRY DRIVE

CLIENT:
QUARRY / BAKER BEACH OWNERS GROUP

PROJECT LOCATION:
QUARRY / BAKER BEACH
SALT SPRING ISLAND, BC

DRAWING NO:
2022.68-46-LAY-005

PERMIT NO:	TBC	DATE:	6-Mar-24
STAMP		DESIGN BY:	TRE
		DRAWN BY:	VBB
		SIZE:	A1
		SCALE:	NTS
		REVIEWED BY:	BJGF
		SHEET:	50/5

REQUEST FOR REVIEW

BAKER BEACH GREEN SHORE MITIGATION FOR BACKSHORE AND FORESHORE, SALT SPRING ISLAND

PREPARED FOR:
FISHERIES AND OCEANS CANADA

CORVIDAE PROJECT #2023-050
UPDATED JULY 2024



TABLE OF CONTENTS

A) CONTACT INFORMATION	1
B) DESCRIPTION OF PROJECT	2
C) LOCATION OF THE PROJECT	7
D) DESCRIPTION OF THE AQUATIC ENVIRONMENT	8
E) POTENTIAL EFFECTS OF THE PROPOSED PROJECT	11
APPENDIX A – PLANTING LIST	17
APPENDIX B – PHOTOLOG.....	18
APPENDIX C – MAPS.....	19
APPENDIX D TYPICAL DRAWING FOR BEACH NOURISHMENT AND WAVE DEFLECTION	20
APPENDIX E – EQUIPMENT USE COMMENTARY	21



This report is based on the requirements for a Request for Review by DFO under the fish and fish habitat protection provisions of the *Fisheries Act* (<https://www.dfo-mpo.gc.ca/pnw-ppe/reviews-revues/applicants-guide-candidats-eng.html>). Additional information is found in the Appendices. **New information provided in response to DFO # 24-HPAC-00369, Additional information request is provided in green text.** All response text is bold.

A) CONTACT INFORMATION

Name of Business/Company: n/a

Address	PID	Legal Description	Owners
235 Quarry Dr	009-555-706	Lot 1 Sections 6 And 7 Range 1 West North Salt Spring Island Cowichan District Plan 46155	Heidi Kuhrt and David Demner
239 Quarry Dr	009-555-731	Lot 3, Sections 6 And 7, Range 1 West, North Salt Spring Island, Cowichan District, Plan 4615	Pat and Bruce Sanders
434 Baker Rd	009-555-781	Lot 5, Section 6, Range 1 West, North Salt Spring Island, Cowichan District, Plan 46155	Ethan Wilding
431 Baker Rd	000-014-656	Amended Lot 2 (Dd 251903i) Section 6 Range 1 West North Salt Spring Island Cowichan District Plan 7144 Except Part in Plan 40042	Claire & Jeremy Sicherman

City/Town: **Salt Spring Island**
 Province/Territory: **BC**
 Postal Code: **V8K 1J2**
 Tel. No.: **n/a**
 Email: **n/a**
 Select additional contact: **Environmental Consultant**
 Consultant: **Corvidae Environmental Consulting Ltd.**
 Mailing address: **6526 Water Street**
 City/Town: **Sooke**
 Province/Territory: **BC**
 Postal Code: **V9Z 0X1**
 Tel. No.: **250-415-8553**
 Email: **julieb@corvid.pro**

Is the Proponent the main/primary contact? Yes **No**

If no, please enter information for the primary contact or any additional contact.

Primary Contact:
Julie Budgen, RPBio
Biologist
Corvidae Environmental Consulting Ltd.
Mobile: 250-415-8553
julieb@corvid.pro

B) DESCRIPTION OF PROJECT

If your project has a title, please provide it.

Baker Beach Green Shore Mitigation for Backshore and Foreshore, Salt Spring Island

Is the project in response to an emergency circumstance*? Yes **No**

Does your project involve work in water? **Yes** No

If yes, is the work below the High Water Mark*? **Yes** No

What are you planning to do? Briefly describe all project components you are proposing in or near water.

The project is proposed in response to identified bluff failure that is occurring because of the following mechanisms:

- **Pore pressure/groundwater seepage from surficial soils, reducing cohesion and resulting in landward progression of the crest through continuous or punctuated mobilization of sediment.**
- **Toe-erosion of bedrock, or undercutting of shoreline sediment, which decreases stability of all materials above, often resulting in narrow failures from crest to base of coastal bluff.**
- **Landslip/tree-topple is occurring on Site wherein trees near, or overhanging, the coastal bluff mobilize consequent to soil creep, pore pressure or toe-erosion. These failures result in a larger volume of surficial sediment during failure than toe-erosion instability reaching the crest. Consequent to root reinforcement or friability of bedrock, landslip is likely to mobilize underlying shale and siltstone.**
- **Landslide is a moderate to large scale failure event which can mobilize bedrock and overlying surficial sediment. Coastal landslides are often consequent to a history of toe-erosion, bedrock fracture and an increase in pore pressure (i.e. saturated soils & rock-fractures during a storm event) which has destabilized the coastal bluff in that area.**

These mechanisms have been outlined in detail within Geohazard Assessment Reports that were completed for each property.

To reduce the risk of erosion, the following activities are proposed:

Bioengineering and Revegetation

- **Maintain the current natural beach slope to the extent possible.**
- **Remove invasive species along the backshore and re-plant with native species at a high density. Irrigate until established (i.e. three years or more till roots are established). Emphasis will be placed on 431 Quarry Road, where there is shoreline infestation of scotch broom (*Cytisus scoparius*), Himalayan blackberry (*Rubus armeniacus*) and bamboo (*Bambusa* sp.) will be replaced with native species.**
- **Enhancement of backshore vegetation through planting of native species, particularly overhanging species such as Oceanspray (*Holodiscus discolor*). A detailed re-vegetation plan and native plant species list is attached as Appendix A and lists the species, quantities, location, spacing, planting methods and area for revegetation for each property.**
- **Plant removal is limited to invasive species before the natives are planted. Removals will occur only within the "re-vegetation" areas shown in the plans.**

Wave Deflection

- With the strategic placement of boulders / non-uniform rock clusters along the low-tide terrace to provide relatively thorough coverage from the predominant wave direction.
- These installations are meant to mimic existing boulder clusters which can be seen in aerial imagery and duplicate the effect of the offshore bedrock 'islands'.
- 0.5 m – 1.2 m boulders, sandstone or low sulfide granite, rounded to sub-rounded (no blast rock)
- Spaced 0.5 m – 1.0 m
- Placed on largest side to minimize topple/movement
- Amoebic clusters of 10 – 15, covering ~5 m² – 15m²
- Total boulder placement area: 1,272.20 m², of which there is a ~20% density of boulders resulting in a total coverage from boulders of ~255 m².
- The area of boulder-placement has been added to each polygon in the latest schematic set, with summary numbers as follows:

Wave Deflection Placement Areas		
Location ID	Extent	Footprint (20%)
A1	210.3 m ²	42.1 m ²
E1	611.7 m ²	122.3 m ²
F1	450.2 m ²	90.0 m ²

- boulder placement for wave-energy dissipation are rock clusters that mimic existing natural deposits in the area (Photo 1 and Photo 2).
- Appendix D provides typical drawing for Wave deflection.



Photo 1 of existing natural deposits of "rock clusters" at the Project Site.



Photo 2 of existing natural deposits of "rock clusters" at the Project Site.

Beach Nourishment (BN)

- The entirety of BN placement is below highwater, if we are defining HTL to include king-tide/storm events or simply as any lands below the shoreline.
- Appendix D provides typical drawing for BN.
- Apply suitable substrate for forage fish spawning in the upper reaches of the beach profile where feasible.
- Match borrowed substrate with native sediments within the project area.
- Substrate will be clean alluvial/fluvial pebbles to cobbles with some coarse sand to gravel and a sparse amount of find sand. Substrate shall be washed of anything less coarse than 0.2 mm in size.
- Substrate will be rounded to sub-rounded, as per the Terrain Classification for BC.
- Size has been determined by sediment analysis and adjusted to sea level:

Grain size	Existing composition	2050 RCP8.5 Sea level change composition
4.8 mm+	59%	71%
1.8 to 4.7mm	20%	24%
Fine to coarse sand	22%	5%

- The lack of fines will allow for capture of that sediment size-fraction from the along-shore drift-cell sediment movement.
- No contaminants will be present as materials will be from a land parcel known not to have hosted Contaminated Sites Regulation Schedule 2 activities.
- The material shall be free of foreign materials, regardless of volumetric content.
- Total BN area is 2,399.0 m², for which the areas will be covered by a sculpted 'loaf' placement – to mimic deposit of a landslide from uplands - that will spread over subsequent years through tidal/wave/storm action.
- The area of boulder-placement has been added to each polygon in the latest schematic set, with summary numbers as follows:

Beach Nourishment Areas	
A1	434.4 m ²
C1	736.5 m ²
E1	704.5 m ²
F1	523.6 m ²

An evaluation of the recommended measures was conducted under the Green Shores for Homes credit scheme, wherefrom a score of 84/99 possible credits was determined to be accomplished. Additionally, the alignment with BC's Marine Strategy Intentions was determined to be meeting most intentions or having no effect. There was no adverse effect to BC Marine Strategy Intentions consequent to the recommended mitigation measures identified through the design process.

Please refer to attached site photographs in the Photo Log (Appendix B).

How are you planning to do it? Briefly describe the construction materials, methods, and equipment that you plan to use.

Bioengineering and Revegetation:

- Hand tools
- Limited use of small machinery where feasible.

Wave Deflection

- Barge mounted with equipment to move the materials (excavator) that has been equipped with biodegradable oils.
- Rock placement directed by a qualified professional.
- See Appendix D for typical drawings for BN and Appendix E for additional information on placement by equipment.

Beach Nourishment

- Barge with excavator.
- Strategic placement of material (e.g., gravel) to reduce erosion of upper beach and backshore areas directed by a qualified professional.
- See Appendix D for typical drawings for wave deflection and Appendix E for additional information on placement by equipment.

Works expected to take approximately one month and may be phased based on material availability and planting requirements. Works to take place within the allowable work window in the area, outside of Pacific sand lance spawning periods.

Include a site plan (figure/drawing) showing all project components in and near water.

Are details attached? **Yes** No

Identify which work categories apply to your project. **BOLD** the ones that apply.

Aquaculture Operations	Log Handling / Dumps
Aquatic Vegetation Removal	Log Removal
Beaches	Moorings
Berms	Open Water Disposal
Blasting / Explosives	Piers
Boat Houses	Riparian Vegetation Removal
Boat Launches / Ramps	Seismic Work
Breakwaters	Shoreline Protection
Bridges	Stormwater Management Facilities
Cable Crossings	Surface Water Taking
Causeways	Tailings Impoundment Areas
Culverts	Temporary Structures
Dams	Turbines
Dewatering	Water Control Structures
Dykes	Water Intakes / Fish Screens
Fishways / Ladders	Water Outfalls
Flow Modification (hydro)	Watercourse Realignment
Groundwater Extraction	Weirs
Groynes	Wharves
Habitat Restoration	Wind Power Structures
Ice Bridges	Other - Specify

Was your project submitted for review to another federal or provincial department or agency? **Yes** No

If yes, indicate to whom and associated file number(s).

- **FrontCounter (Tracking number 100439391)**
- **Islands Trust (Land Use Application – DP# TBC)**

C) LOCATION OF THE PROJECT

Coordinates of the proposed project

Latitude **48.868 N**, Longitude **123.549 W**

Include a map clearly indicating the location of the project as well as surrounding features.

Maps provided in Appendix C.

Name of Nearest Community (City, Town, Village):

Vesuvius

Municipality, District, Township, County, Province:

Salt Spring Island, Cowichan District, BC

Name of watershed (if applicable):

N/A

Name of watercourse(s) or waterbody(ies) near the proposed project:

Booth Inlet

Provide detailed directions to access the project site:

Take Vesuvius Bay Road to Chuan Dr. Turn on Quarry Dr.

D) DESCRIPTION OF THE AQUATIC ENVIRONMENT

Identify the predominant type of aquatic habitat where the project will take place. **BOLD** the ones that apply.

Estuary (Estuarine)
Lake (Lacustrine)
On the bank/shore at the interface between land and water (Riparian)
River or stream (Riverine)
Saltwater (Marine)
Wetlands (Palustrine)

Provide a detailed description of biological and physical characteristics of the proposed project site. This description should include information on aquatic species at risk* (<https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html>), their residence* and critical habitat* if found in the area. An overview of the distribution of aquatic species at risk and the presence of their critical habitat within Canadian waters can be found here <http://dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html>

The Project is located within the Coastal Douglas-fir (CDF) biogeoclimatic zone, specifically in the Moist Maritime Coastal Douglas-fir Subzone (CDFmm). Soils on the Site are comprised of loam, well-draining, Orthic Dystric Brunisol (GALIANO soil association). The Site slopes moderately to steeply from northeast to southwest in the direction of the shoreline.

At shoreline, the Site has an 8 m – 12 m coastal bluff consisting of siltstone and shale at base and capped with 1 m – 2 m of surficial material. Above which there are three distinct slope sections of the Site. The lowest is a gently sloping (5 % - 15 %) bench above the coastal bluff where single family dwellings on Site exists, above which is a bedrock-controlled section of 30 % – 35 %. This second benching section does not exceed the angle of repose for local loamy soils, above which local sediment has increased likelihood of instability. The last slope section crests at a ridge-top and drops in elevation to Quarry Drive.

South-facing, dry banks along the shoreline and immediate backshore area were forested and characterized by a Douglas-fir – arbutus woodland with lesser amounts of shore pine and Garry oak. The structural stage was observed to be young forest with larger (mid-seral) trees occurring intermittently. Species observed are consistent with the red-listed Douglas-fir – arbutus ecological community, which is an ecological community that is at risk of being lost (extirpated, endangered or threatened) in BC. Understory species in the immediate backshore included predominantly low growth of salal and dull Oregon-grape. Banks along the shoreline were characterized by pink (hairy) honeysuckle, grasses, weeds, evergreen huckleberry, and invasive species (English ivy, scotch broom, Himalayan blackberry, bull thistle, oxeye daisy, and spurge-laurel). The moss layer was very poorly developed near the shoreline.

Terrestrial species of management concern that may occur in the vicinity of the Site.

Common Name	Scientific Name	BC Provincial Status ¹	SARA Schedule 1 Status ²
Species			
Threaded vertigo	<i>Vertigo rowellii</i>	Blue	Special Concern
Painted Turtle - Pacific Coast Population	<i>Chrysemys picta</i> pop. 1	Red	Threatened
Macrae's clover	<i>Trifolium dichotomum</i>	Red	n/a
Leafless wintergreen	<i>Pyrola aphylla</i>	Blue	n/a
Western screech-owl, <i>kennicottii</i> subspecies	<i>Megascops kennicottii kennicottii</i>	Blue	Threatened
Ecological Community			
Garry oak / oceanspray	<i>Quercus garryana</i> / <i>Holodiscus discolor</i>	Red	n/a
Garry oak / California brome	<i>Quercus garryana</i> / <i>Bromus carinatus</i>	Red	n/a
Grand fir / dull Oregon-grape	<i>Abies grandis</i> / <i>Mahonia nervosa</i>	Red	n/a
Douglas-fir / dull Oregon-grape	<i>Pseudotsuga menziesii</i> / <i>Mahonia nervosa</i>	Red	n/a
Trembling aspen / Pacific crab apple / slough sedge	<i>Populus tremuloides</i> / <i>Malus fusca</i> / <i>Carex obnupta</i>	Red	n/a

¹ BC CDC 2023. BC Species and Ecosystems Explorer. Ministry of Environment.

² Government of Canada 2023. Species at Risk Public Registry

The shoreline orientation is controlled by the bedrock structure and is exposed to the west and northwest. Wave fetches to the northwest are in the order of 20 km (10 n mi) making this a semi-protected shoreline. The shoreline is a combination of rock and sediment. The bedrock is shale and siltstone (Nanaimo Group; Muller 1980). A wave-cut rock platform has been cut into the bedrock leaving a relatively gradual foreshore slope and a steep bedrock cliff in the backshore.

The bedrock platform has a discontinuous veneer of pebbles, cobbles, and boulders. There is a continuous beach (~5 m in width) in the upper intertidal at the base of the cliff; sediments on the beach are pebble to sand-sized, shale fragments that have weathered off the cliff face. There are two large intertidal siltstone reefs offshore that provide shelter so that muddy sand has accumulated in the wave shadow of the lower intertidal zone landward of these reefs.

Erosion on the cliff varies along the shore with some segments showing more stability due to resistant bedrock and some segments showing less stability where the siltstone is friable. On friable sections, one can scrape off sediment by hand. Stability is indirectly indicated by growth of vegetation on the cliff face. For example, the cliff at 431 Baker Rd is almost completely vegetation covered, indicating greater stability. The rate of cliff erosion has not been documented.

The primary source of sediment to the shore system is from cliff erosion. Most of the material presently being eroded is fine and is carried alongshore to the southeast by wave-driven alongshore currents. Some of the coarser sediment, boulders and cobbles, may be derived from erosion of glacial till layers, where the fine sediments of the till are swept away by waves and tidal currents, and the coarser components (pebbles, cobbles and boulders) remain as a surface lag on the bedrock.

While no direct indicators of longshore transport were noted during the survey or on aerial photos, the dominant fetches from the west and northwest will drive a southeast-directed longshore transport. Sediments to the southeast are finer and there is a very large ebb-tidal delta at the western entrance of Booth Inlet. These sediment trends support the assumption that sediment transport is from northwest to southeast.

The Baker Road properties are in a near natural state. But to the north, a bulldozer has scraped boulders into linear, groyne-like features in the intertidal zone at the 183 to 205 Quarry Rd properties; these features have not been effective at catching sediment. Between the 234 Quarry Road and 431 Baker Road properties, there are three sections of rip-rap (large boulders) placed in the upper intertidal zone at:

- the NW CRD access stairs (10 m alongshore length),
- a private residence at 241 Quarry Rd (30 m of along length) and
- the SE CRD beach access stairs (30 m of alongshore length).

A total of 70 m of rip-rap presently exists along 500 m of shoreline (14%).

The shoreline type within the proposed project area is classified as low rock/boulder (Islands Trust n.d.). As per Map 11 of the Salt Spring Island Official Community Plan, a portion of the shoreline near 431 and 434 Baker Road is classified as an 'Environmentally Sensitive Shoreline Area'.

Surf smelt and Pacific sand lance spawning habitat suitability assessments were completed for Salt Spring Island by the British Columbia Marine Conservation and Research Society between September 2015 and September 2016. Beach spawning forage fish are an important food source for marine predators.

Of the 194 suitable spawning beaches documented surrounding Salt Spring Island, fifteen (15) were classified as Pacific sand lance, fifty-four (54) as surf smelt, and one-hundred and twenty-five (125) as mixed surf smelt/Pacific sand lance spawning habitat. Mapped suitable spawning habitat for surf smelt and mixed surf smelt/Pacific sand lance overlaps the project footprint, specifically at the eastern-most beach nourishment application area fronting 431 Baker Road. This site was noted to have a continuous sediment distribution (fine to coarse). Suitable surf smelt spawning habitat is mapped east of 431 Baker Road, however, this area is outside of the proposed project footprint (Figure 2 in Appendix C). Surf smelt are known to spawn year-round in Puget Sound and also have distinct winter and summer spawning stocks (Penttila 2007). In British Columbia, this same pattern has been detected (de Graaf unpublished data). Pacific sand lance spawning is from Nov – January with incubating embryos detected into February (30-45 day fall/winter incubation period¹).

Other notable marine environmental features include the presence of mapped eelgrass beds (flat, continuous) just offshore in proximity to the Site that provide habitat for herring and forage fish.

Aquatic species at risk that may occur in the vicinity of the Site.

Common Name	Scientific Name	SARA Schedule 1 Status ¹
Steller Sea Lion	<i>Eumetopias jubatus</i>	Special Concern
Killer Whale (Northeast Pacific southern resident population)	<i>Orcinus orca</i>	Endangered
Killer Whale (Northeast Pacific transient population)	<i>Orcinus orca</i>	Threatened
Humpback Whale	<i>Megaptera novaeangliae</i>	Special Concern
Harbour Porpoise	<i>Phocoena phocoena</i>	Special Concern
Grey Whale (Eastern North Pacific population)	<i>Eschrichtius robustus</i>	Special Concern
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	Endangered
Northern Abalone	<i>Haliotis kamtschatkana</i>	Endangered

¹ British Columbia Marine Conservation and Research Society. 2017. Salt Spring Island and Wallace Island Surf smelt and Pacific sand lance Spawning Habitat Suitability Assessments September 2015-September 2016

Yelloweye Rockfish	<i>Sebastes ruberrimus</i>	Threatened
Tope	<i>Galeorhinus galeus</i>	Special Concern

¹ Government of Canada 2023. Species at Risk Public Registry

There are four identified erosion mechanisms:

- Pore pressure / groundwater seepage;
- Toe-erosion of bedrock, or undercutting of shoreline sediment ;
- Landslip/Tree-topple;
- Landslide.

Include representative photos of affected area (including upstream and downstream area) and clearly identify the location of the project.

Photo log and maps attached (Appendix B and C).

E) POTENTIAL EFFECTS OF THE PROPOSED PROJECT

Have you reviewed the Pathways of Effects (PoE) diagrams (<http://www.dfo-mpo.gc.ca/pnw-ppe/pathways-sequences/index-eng.html>) that describe the type of cause-effect relationships that apply to your project? **Yes** No

If yes, select the PoEs that apply to your project. **BOLD** the ones that apply.

Addition or removal of aquatic vegetation	Placement of material or structures in water
Change in timing, duration, and frequency of flow	Riparian Planting
Cleaning or maintenance of bridges or other structures	Streamside livestock grazing
Dredging	Structure removal
Excavation	Use of explosives
Fish passage issues	Use of industrial equipment
Grading	Vegetation clearing
Marine seismic surveys	Wastewater management
Organic debris management	Water extraction
Placement of marine finfish aquaculture site	

Will there be changes (i.e., alteration) in the fish habitat*? **Yes** No Unknown

If yes, provide a description.

The proposed mitigation for shoreline erosion will have a net benefit for fish and fish habitat. The removal of invasive species replaced with native vegetation will provide stability of the coastal bluff and increase shade in the backshore. Beach nourishment and placement of boulders for wave deflection will further reduce the risk of erosion and minimize fine sediment from entering the marine environment.

Is there likely to be a harmful alteration, disruption or destruction of habitat used by fish? Yes **No** Unknown

Is there likely to be destruction or loss of habitat used by fish? Yes **No** Unknown

What is the footprint (area in square meters) of your project that will take place below the high-water mark*?

Beach nourishment and wave deflection will occur at each property totaling approximately 1 ha (25 m x 400 m). See Appendix C for proposed placement of clean pebbles and boulder clusters.

Is your project likely to change water flows or water levels? Yes **No** Unknown

If your project includes withdrawing water, provide source, volume, rate and duration. **N/A**

If your project includes a water control structure, provide the % of flow reduction. **N/A**

If your project includes discharge of water, provide source, volume, and rate. **N/A**

Will your project cause death of fish? Yes **No** Unknown

If yes, how many fish will be killed (for multi-year project, provide average)? What species and life stages? **N/A**

What is the time frame of your project?

There are two timeframes proposed for this work:

August – September, 2024

December 2024 – February 15, 2025 (if work cannot be started/completed in first window)

If applicable, provide schedule for the maintenance. **N/A**

If applicable, provide schedule for decommissioning. **N/A**

Are there additional effects to fish and fish habitat that will occur outside of the time periods identified above? Yes **No**

(If yes, provide details). **N/A**

Can you follow appropriate Timing Windows (<http://www.dfo-mpo.gc.ca/pnw-ppe/timing-periodes/index-eng.html>) for all your project activities below the High Water Mark*? **Yes** No

(If no, provide explanations). **N/A**

Have you considered and incorporated all options for redesigning and relocating your project to avoid negative effects to fish and fish habitat? **Yes** No

If yes, describe.

Yes, it is not possible to redesign or relocate the project as it is site specific to reduce erosion risk. The project is designed using the guidance provided in Green Shore for Homes and BC's Marine Strategy Intentions.

Have you consulted DFO's Fish and Fish Habitat Protection Measures Habitat (<https://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html>) to determine which measures apply to your project? **Yes** No

Will you be incorporating applicable measures into your project? **Yes** No

If yes, identify which ones. If No, identify which ones and provide reasons.

Applicable measures that will be incorporated are listed below:

- Use machinery equipped with low pressure tracks/wheels to reduce risk of crushing organisms living in the intertidal zone.
- Plan work for low tide to protect fish, including their eggs, juveniles, spawning adults, and the organisms upon which they feed and migrate.
- Maintain fish passage by avoiding changing water flow, water level, or obstructing with the movement and migration of fish.
- Conduct environmental monitoring, including water quality, during all project activities that may result in potential negative effects to fish and fish habitat.
- Maintain all machinery on site in a clean condition free of fluid leaks to prevent any deleterious substances from entering the water. Use biodegradable hydraulic fluid.
- Avoid depositing any deleterious substances in the watercourse.
 - Beach nourishment and wave deflection boulders will arrive to site washed and free of invasive species.
- Develop a response plan to be implemented immediately in the event of a spill.
 - Ensure large marine spill kit is visible and accessible.
 - Refuel with absorbent pads, spill trays, and preform in a way that does not allow contaminants to enter the water.
 - Immediately report any spills to water of sediments, debris, wash or contact water to 1-800-663-3456. If possible, immediately remove the materials from the water and implement emergency mitigation and cleanup measures.
- Ensure clean up measures are suitably applied so as not to result in further alteration of the bed or banks of the watercourse.
- Conduct activities outside the spawning period for Pacific sand lance (Nov – January)

Have you considered whether DFO standards and codes of practice apply to your project? No **Yes**

If Yes, include a list.

N/A

Have you considered other avoidance and mitigation measures? No **Yes**

If Yes, include a list.

- Minimize number of traverses in the intertidal zone by equipment during beach nourishment and wave deflection activities.
- Limit riparian planting to the areas outlined in the re-vegetation plan. Stage plants above the high tide mark.
- Limit barge placement to a single point and minimize time in contact with shoreline to the extent practical.
- Conduct activities during low tide during summer months.
- Avoid disturbance to eel grass and sensitive areas.
- Deposit beach nourishment pebbles in “loafs” in the near shore and allow to naturally disperse by wave and tide action.

Are there any relevant measures that you are unable to incorporate? Yes **No**

(If yes, identify which ones). **N/A**

What harmful effects to fish and fish habitat do you foresee after taking into account the avoidance and mitigation measures described above?

Although very unlikely, there is the potential for deleterious substances (e.g., sediment, fluids from machinery) from the project to enter the waterbody, which could cause contravention of the *Fisheries Act*.

To reduce the risk of burial or crushing mortality of sessile invertebrates, the proponent will:

- Use of low pressure equipment.
- Limit the number of traverse in the intertidal zone.
- Place beach nourishment in loafs and allow for dispersal by wave the tide action to mimic natural processes.

By implementing the mitigation measures outlined in this document, the Project does not anticipate, or intend, any harmful effects to fish or fish habitat. The goal of the project is to reduce erosional risk and improve fish habitat along the proponent properties.

Do these include effects on aquatic species at risk*? Yes **No**

If yes, please describe, including how many individuals will be harmed, harassed, or otherwise affected by the project, and how? **N/A**

Do these include effects on areas identified as their residence or critical habitat? Yes **No**

If yes, please describe. **N/A**

Are there any aquatic invasive species in the vicinity of your project area? Yes **No**

(If yes, identify which ones).

Does your project aim to, or will it be likely to, affect any of these aquatic invasive species? Yes **No**

If yes, how? **N/A**

Quantify temporary and permanent impacts: provide detailed information related to all temporary (e.g., equipment access) and permanent (e.g., persist after completion) project components including all activities, structures, area of operations, etc. In your answer, please clarify if any aquatic vegetation or invertebrates will be buried or crushed during gravel and boulder placement, or from equipment tracking.

The use of a tracked vehicle (excavator) along the shoreline and placement of boulders and beach nourishment does pose a risk to sessile invertebrates. A response on the crushing or smothering of aquatic vegetation or invertebrates is attached as Appendix D.

Temporary disturbance during project completion includes disturbance of the shoreline as well as the temporary displacement of large boulders / rocks for access purposes. Overall, the project is designed to reduce the risk of shoreline erosion while contributing to natural intertidal processes. No adverse impacts are expected to persist after project completion.

Quantify footprints: the spatial extent of all temporary (e.g., machinery rutting on intertidal area) and permanent project components (e.g., gravel nourishment and boulder cluster footprint) in m² for both riparian and aquatic impacts.

Based on Figure 1 in Appendix C – Maps, the actual footprint (i.e., the shaded polygons) of the beach nourishment and boulder cluster wave areas looks to be significantly less than 10,000 m². Please

confirm the footprint below the high tide line for the beach nourishment and boulder cluster wave deflection areas separately.

The total boulder placement area: 1,272 m², of which there is a ~20% density of boulders resulting in a total coverage from boulders of ~254 m². The total footprint of the BN area is 2,399 m². The total footprint of the project is 2,653 m² for beach nourishment and boulder cluster wave deflection. Appendix D provides typical drawings for the wave deflection.

Please also confirm the total riparian footprint in square meters (m²) for the project, including any areas of temporary riparian vegetation disturbance. In your answer, please also provide a description of the riparian vegetation that will be removed/disturbed and re-planted (i.e., species to be impacted and re-planted).

Invasive species to be removed include scotch broom, Himalayan blackberry, and bamboo. No other riparian vegetation will be disturbed, outside of the “revegetation” areas. Species to be planted are included in the attached Planting Plan. Total revegetation area, per property, is included in the planting plan, as well as in the table below.

Property	Revegetation Area (m²)
235 Quarry Dr	400
239 Quarry Dr	220
434 Baker Rd	160
431 Baker Rd	350

DFO understands machinery access is required below the high high tide line. Please quantify the anticipated footprint (m²) below the high high tide line machinery will have on the beach area to access the site (i.e., length in meters the excavator will travel on the beach multiplied by the width of the machinery tracks). Please provide the number of trips up and down the beach that are anticipated as part of the works.

Please provide a detailed Environmental Management Plan (EMP) describing what mitigation measures are proposed specifically to avoid impacts to fish and fish habitat for each work, undertaking, or activity. For example:

- Mitigation measures to avoid impacts to forage fish if beach spawning habitat is present (e.g., least risk timing windows, forage fish embryo surveys prior to construction, etc.).
- Mitigation measures to prevent impacts to fish and fish habitat during barge operation and positioning (particularly how impacts to the mapped eelgrass habitat will be avoided), and excavator operation (i.e., minimizing equipment tracking on the beach, operating the excavator as high up in the intertidal area as possible, etc.).
- Mitigation measures for gravel berm and boulder placement (e.g., working when the site is dewatered by a low or falling tide, re-locating colonized rocks for replacement at a similar tidal elevation to facilitate re-colonization of the site, etc.).

Activity	Potential effect	Mitigation measure

Barge landing	• Disruption to eel grass and sensitive features	• Select mooring location that reduces risk to the marine environment (i.e., on bedrock). • Limit duration of barge in contact with bed to time required to offload equipment and materials. • Move offshore when not in use. • Use proposed foreshore lease (Appendix C)
Placement of wave deflection and BN materials	• Disruption of eel grass beds and sensitive shoreline • Disruption of spawning habitat • Crushing of sessile invertebrates	• Avoid eel grass beds and sensitive shorelines to the extent practical. • Minimize number of traverses along the intertidal zone by equipment. • Conduct activities in summer to avoid winter spawning by surf smelt and Pacific sand lance. • Place BN pebbles in loafs along the shoreline to allow for natural dispersal. • Place wave deflection boulders in similar configurations and position in the intertidal zone as existing boulders. Place in a stable configuration to reduce movement and encourage recolonization • Follow placement as shown in Appendix C and typical drawings provided in Appendix D. • Refuel equipment with drip trays/absorbent material in place. Have a spill kit accessible during fuel transfers.
Riparian planting	• Disruption of riparian habitat and function	• Follow re-vegetation plan. • Remove invasive species in the riparian planting area. • Re-vegetate with native species that do not require maintenance once established.

APPENDIX A – PLANTING LIST

Property	Area (m2)	Species	Scientific Name	Location	Total Plants Needed	Notes	
235 Quarry	400	Trees / Shrubs					
Total Est. Plants		Bitter cherry	<i>Prunus emerginata</i>	Lower slope	5	This area has a graded slope. House is closer to bank. Three apple trees planted (recently). Plant more all over the slope, due to grade. Push out top ridge only in places with no kingfisher cavities. Plant using hand tools.	
		Black hawthorn	<i>Crataegus douglasii</i>	Lower/mid slope	20		
		Dune grass	<i>Eylmus mollis</i>	Bottom/toe	15		
		Evergreen huckleberry	<i>Vaccinium ovatum</i>	Upper slope, edge	20		
		Flowering currant	<i>Ribes sanguineum</i>	Flat area near house with sfc drainage	10		
		Indian plum	<i>Oelmeria cerasiformis</i>	Mid to lower slope	10		
		Kinnikinnick	<i>Arctostaphylos uva-ursi</i>	Upper slope, edge	10		
		Mock orange	<i>Philadelphus lewisii</i>	Flat area near house with sfc drainage, and on slope	10		
		Oceanspray	<i>Holodiscus discolor</i>	Steeper areas on slope	10		
		Pacific crabapple	<i>Malus fusca</i>	Top, by other apples, and closer to bank of house, spaced accordingly	10		
		Saskatoon	<i>Amelanchier alnifolia</i>	Mid to lower slope	20		
		Snowberry	<i>Symphoricarpos albus</i>	forest by house, flat area	15		
		Tall Oregon grape	<i>Mahonia aquifolium</i>	Upper slope, edge	20		
		Springbank clover	<i>Trifolium wormskioldii</i>				
				Total Plants	175		
				Density (plant/m2)	0.44		

Property	Area (m2)	Species	Scientific Name	Location	Total Plants Needed	Notes	
239 Quarry	220	Trees / Shrubs					
Total Est. Plants		Beaked hazelnut	<i>Corylus cornuta</i>	Upper drainage area, by house	4	This area has less space, there are large trees, one tree came down in the spring. Plant around downed tree roots in lower bank. Push out top ridge only in places with no kingfisher cavities. Plant using hand tools.	
		Dune grass	<i>Elymus mollis</i>	Lower shoreline area	20		
		Evergreen huckleberry	<i>Vaccinium ovatum</i>	Upper bank and drainage area	20		
		Flowering currant	<i>Ribes sanguineum</i>	Upper bank	5		
		Indian plum	<i>Oelmeria cerasiformis</i>	Upper and mid-lower bank	5		
		Kinnikinnick	<i>Arctostaphylos uva-ursi</i>	Upper bank and edge/steep slope	20		
		Oceanspray	<i>Holodiscus discolor</i>	Upper bank and drainage area	5		
		Pacific crabapple	<i>Malus fusca</i>	Lower bank	5		
		Saskatoon	<i>Amelanchier alnifolia</i>	Lower bank and drainage area	5		
		Snowberry	<i>Symphoricarpos albus</i>	Upper bank and drainage area	5		
		Tall Oregon grape	<i>Mahonia aquifolium</i>	Upper bank	10		
		Springbank clover	<i>Trifolium wormskioldii</i>	Upper drainage area, by house			
				Total Plants	104		
				Density (plant/m2)	0.47		

[illegible]

Property	Area (m2)	Species	Scientific Name	Location	Total Plants Needed	Notes
431 Baker	350	Trees / Shrubs				
Total Est. Plants		Beaked hazelnut	<i>Corylus cornuta</i>	Top, west end.	4	This property has the most invasives. Following removal it will be a long, open slope. High density planting throughout. Plant using hand tools and low ground pressure equipment.
		Bitter cherry	<i>Prunus emarginata</i>	Mid to lower slope, spaced to sides	4	
		Black hawthorn	<i>Crataegus douglasii</i>	Mid to lower slope	6	
		Dune grass	<i>Elymus mollis</i>	bottom/toe of slope	60	
		Evergreen huckleberry	<i>Vaccinium ovatum</i>	Upper slope area	6	
		Flowering currant	<i>Ribes sanguineum</i>	Mid to lower slope	10	
		Indian plum	<i>Oelmeria cerasiformis</i>	Mid to lower slope	10	
		Mock orange	<i>Philadelphus lewisii</i>	Upper slope area	10	
		Oceanspray	<i>Holodiscus discolor</i>	Mid to lower slope	10	
		Pacific crabapple	<i>Malus fusca</i>	Upper slope area	10	
		Saskatoon	<i>Amelanchier alnifolia</i>	Mid to lower slope	6	
		Snowberry	<i>Symphoricarpos albus</i>	Upper slope area	20	
		Springbank clover	<i>Trifolium wormskioldii</i>			
				Total Plants	156	

APPENDIX B – PHOTOLOG



235 Quarry Drive:
Progressive sloughing of surficial
soil, driven by stormwater
seepage.
Minor toe erosion of friable
bedrock present at this location.



239 Quarry Drive:
Bedrock at coastline has dipped,
as shown by dashed line,
exposing surficial soil to wave
action and spray-erosion, under-
cutting protective root-masses.
Presence of large woody debris
is a benefit, but transient.



434 Baker Road:

Background: surficial soil
vulnerable to wave erosion
rising from bedrock.

Undercut root-masses
overhanging.

Foreground: Presence of a natural
'rock cluster', which has been
recommended to be reproduced
during the proposed beach
nourishment program.



431 Baker Road:

Lack of bedrock at surface in this location allows for undercutting of root mass which constitutes the shoreline along this property. Some undercuts were observed to be greater than 1.0m in depth.

APPENDIX C – MAPS



Capital Regional District

Sensitive Shoreline Area

- Sensitive Shoreline Area
- Property Boundary

Forage Fish Spawning Habitat

- Surf Smelt
- Surf Smelt/Pacific Sandlance

Eelgrass Meadow (2022)

- Dense
- Moderate
- Undetermined



0 100 200 400 600 Meters
Project: 235 Quarry Road, 239 Quarry Road, 431 Baker Road & 434 Baker Road
Sources: Capital Regional District

CORVIDAE
ENVIRONMENTAL CONSULTING INC

Corvidae Project No.
COR-2023-050

Rev. #	Date
0	October 19, 2023
1	October 23, 2023

Figure 2



ADDRESS	OWNERS
235 QUARRY DRIVE	HEIDI KUHRT & DAVID KUHRT
239 QUARRY DRIVE	TRISH SANDERS & BRUCE SANDERS
434 BAKER ROAD	ETHAN WILDING
431 BAKER ROAD	JEREMY & CLAIRE SICHERMAN

GENERAL NOTES:
1) DIMENSIONS IN METRES UNLESS STATED OTHERWISE.

DESIGN NOTES:

LEGENDS:



SALT SPRING ISLAND BRITISH COLUMBIA, CANADA
thinkpg.com / +1 250-930-2426

EGBC PERMIT TO PRACTICE NO: 100204

PROJECT TITLE:
BEACH EROSION PROJECT
2022.68 QUARRY DRIVE

CLIENT:
QUARRY / BAKER BEACH OWNERS GROUP

PROJECT LOCATION:
QUARRY / BAKER BEACH
SALT SPRING ISLAND, BC

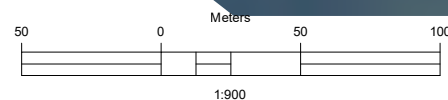
DRAWING NO:
2022.68-46-LAY-005

PERMIT NO: TBC DATE: 4-Jun-24
STAMP

REV	DESCRIPTION	DATE	BY
A	ISSUED FOR DISCUSSION	24-AUG-22	BJGF
B	ISSUED FOR APPLICATION REVIEW	01-FEB-24	BJGF
O	ISSUED FOR APPLICATION	06-MAR-24	BJGF
1	DESIGN UPDATES RELATING TO FRONT COUNTER REQUEST	29-MAY-24	BJGF

DESIGN BY: TRE
DRAWN BY: VEB
SIZE: A1
SCALE: 1:900
REVIEWED BY: TRE
SHEET: 50/6

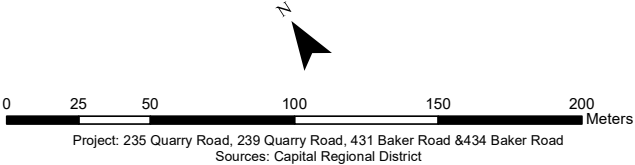
FIGURE 5:
OVERALL PROJECT AREA





Summary of Areas Recommended to Mitigation

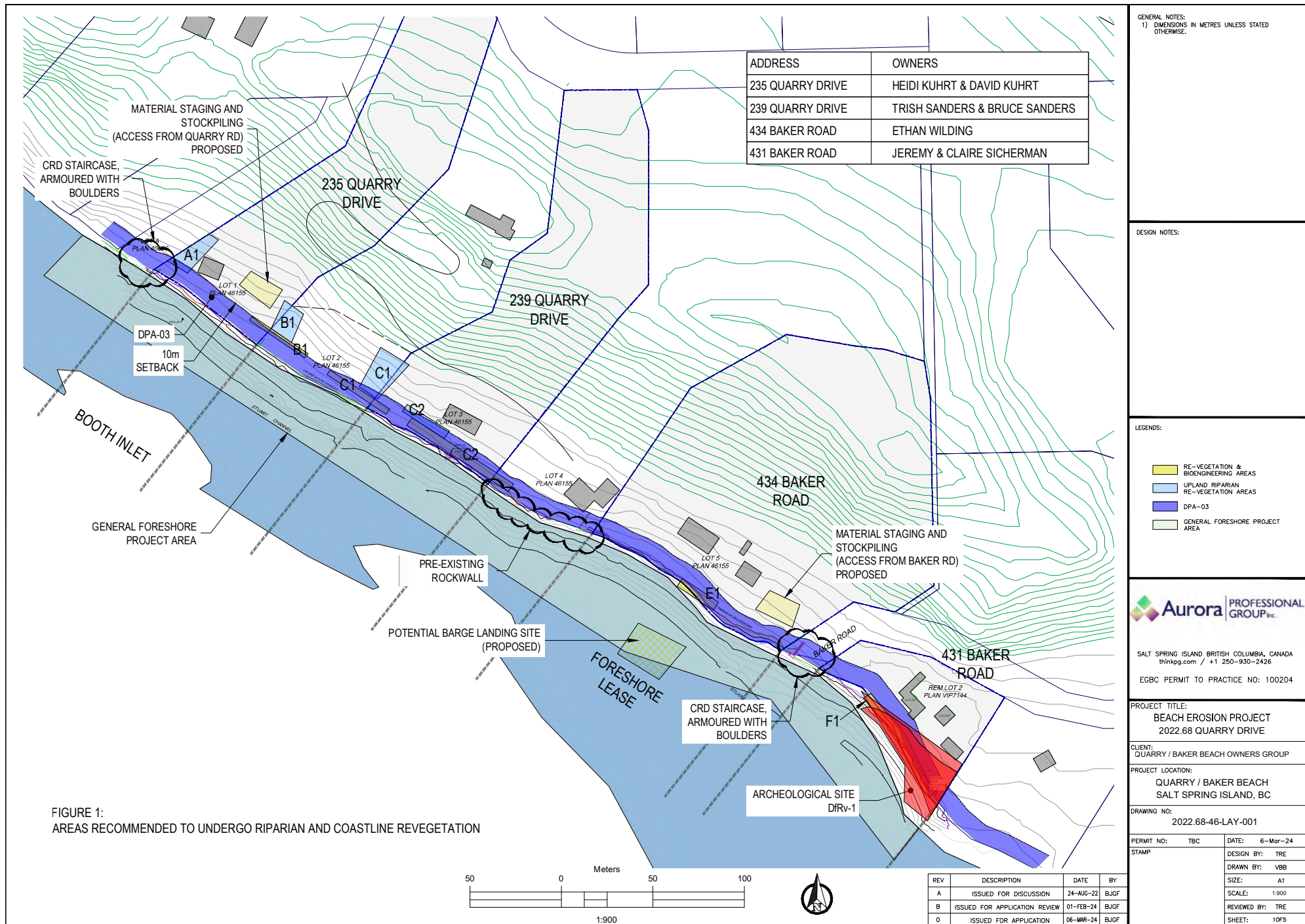
Pot Size	Treatment Recommendation	Planting Area
• 1 gallon	Upland riparian revegetation	Concept Planting
• 2 gallon	Beach nourishment application areas	
• 3 gallon	Re-vegetation and bioengineering	
	Recommended wave deflection	



Corvidae Project No.
COR-2023-050

Rev. #	Date
0	January 26, 2024

Figure 1



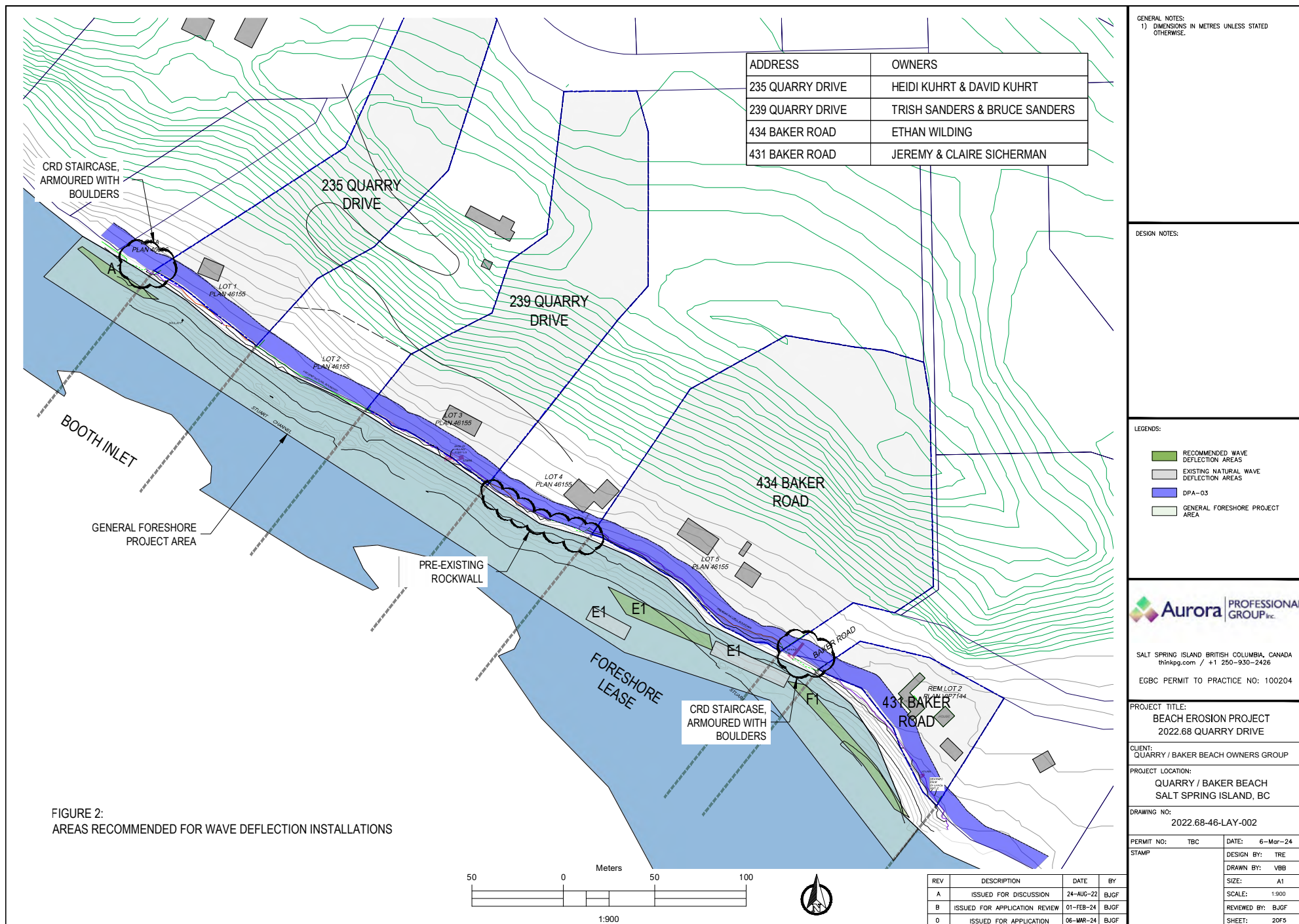
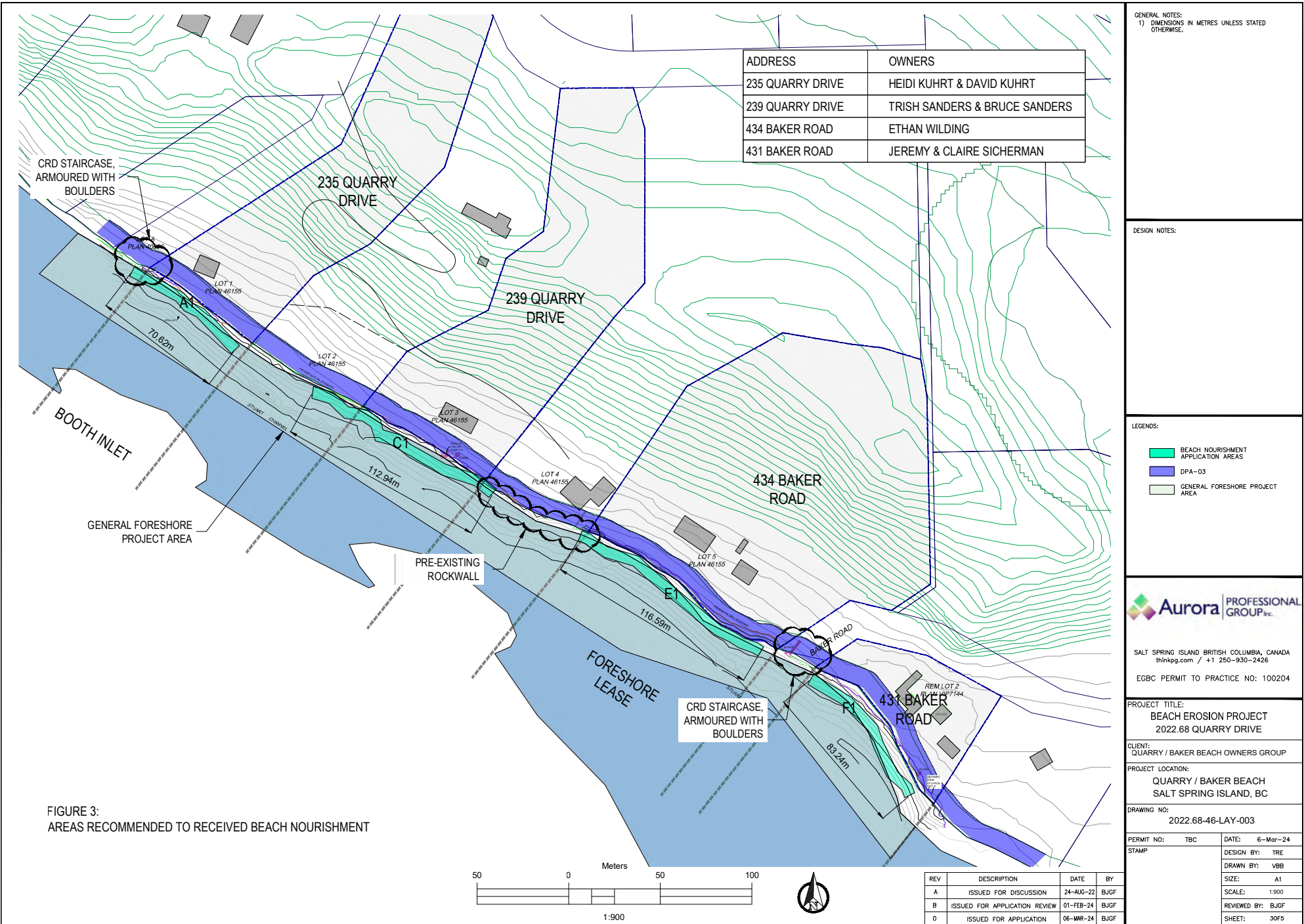


FIGURE 2:
AREAS RECOMMENDED FOR WAVE DEFLECTION INSTALLATIONS



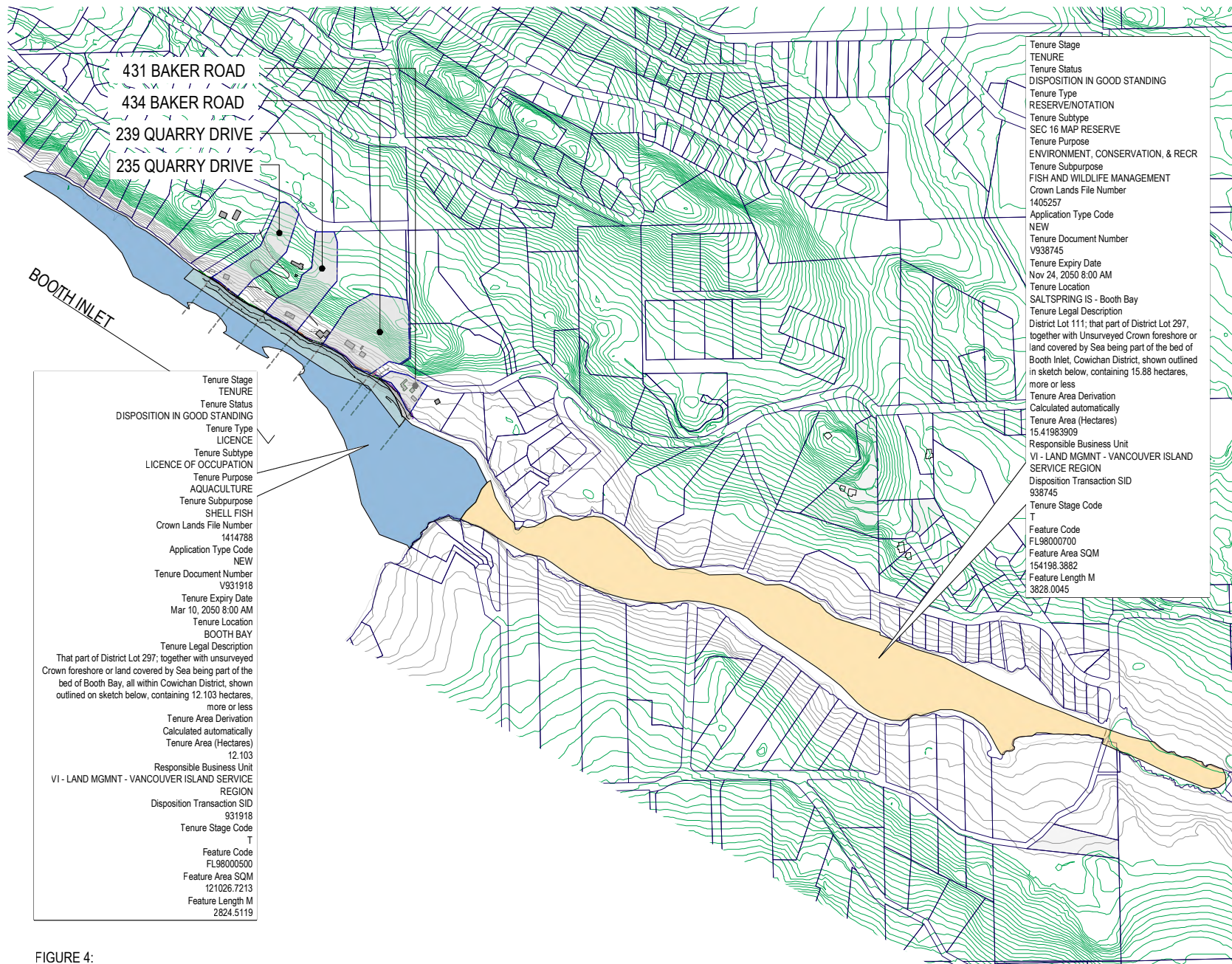


FIGURE 4:
FORESHORE LEASES

Tenure Stage
TENURE
Tenure Status
DISPOSITION IN GOOD STANDING
Tenure Type
RESERVE/NOTATION
Tenure Subtype
SEC 16 MAP RESERVE
Tenure Purpose
ENVIRONMENT, CONSERVATION, & RECR
Tenure Subpurpose
FISH AND WILDLIFE MANAGEMENT
Crown Lands File Number
1405257
Application Type Code
NEW
Tenure Document Number
V938745
Tenure Expiry Date
Nov 24, 2050 8:00 AM
Tenure Location
SALTSPRING IS - Booth Bay
Tenure Legal Description
District Lot 111; that part of District Lot 297,
together with Unsurveyed Crown foreshore or
land covered by Sea being part of the bed of
Booth Inlet, Cowichan District, shown outlined
in sketch below, containing 15.88 hectares,
more or less
Tenure Area Derivation
Calculated automatically
Tenure Area (Hectares)
15.41983909
Responsible Business Unit
VI - LAND MGMNT - VANCOUVER ISLAND
SERVICE REGION
Disposition Transaction SID
938745
Tenure Stage Code
T
Feature Code
FL98000700
Feature Area SQM
154198.3882
Feature Length M
3828.0045

Tenure Stage
TENURE
Tenure Status
DISPOSITION IN GOOD STANDING
Tenure Type
LICENCE
Tenure Subtype
LICENCE OF OCCUPATION
Tenure Purpose
AQUACULTURE
Tenure Subpurpose
SHELL FISH
Crown Lands File Number
1414788
Application Type Code
NEW
Tenure Document Number
V931918
Tenure Expiry Date
Mar 10, 2050 8:00 AM
Tenure Location
BOOTH BAY
Tenure Legal Description
That part of District Lot 297; together with unsurveyed
Crown foreshore or land covered by Sea being part of the
bed of Booth Bay, all within Cowichan District, shown
outlined on sketch below, containing 12.103 hectares,
more or less
Tenure Area Derivation
Calculated automatically
Tenure Area (Hectares)
12.103
Responsible Business Unit
VI - LAND MGMNT - VANCOUVER ISLAND SERVICE
REGION
Disposition Transaction SID
931918
Tenure Stage Code
T
Feature Code
FL98000500
Feature Area SQM
121026.7213
Feature Length M
2824.5119

GENERAL NOTES:
1) DIMENSIONS IN METRES UNLESS STATED
OTHERWISE.

DESIGN NOTES:

LEGENDS:



SALT SPRING ISLAND BRITISH COLUMBIA, CANADA
thinkpg.com / +1 250-930-2426

EGBC PERMIT TO PRACTICE NO: 100204

PROJECT TITLE:
BEACH EROSION PROJECT
2022.68 QUARRY DRIVE

CLIENT:
QUARRY / BAKER BEACH OWNERS GROUP

PROJECT LOCATION:
QUARRY / BAKER BEACH
SALT SPRING ISLAND, BC

DRAWING NO:
2022.68-46-LAY-004

PERMIT NO:	TBC	DATE:	6-Mar-24
STAMP		DESIGN BY:	TRE
		DRAWN BY:	VBB
		SIZE:	A1
		SCALE:	As Shown
		REVIEWED BY:	BJGF
		SHEET:	40FS

REV	DESCRIPTION	DATE	BY
A	ISSUED FOR DISCUSSION	24-AUG-22	BJGF
B	ISSUED FOR APPLICATION REVIEW	01-FEB-24	BJGF
C	ISSUED FOR APPLICATION	06-MAR-24	BJGF

APPENDIX D TYPICAL DRAWING FOR BEACH NOURISHMENT AND WAVE DEFLECTION

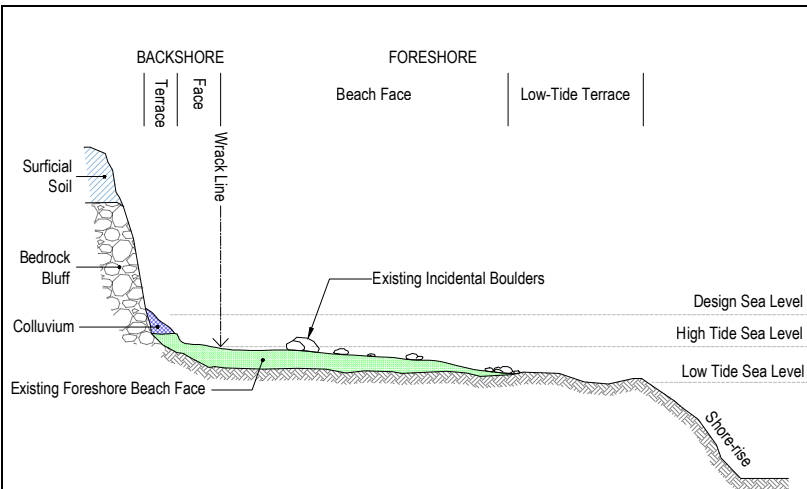


FIGURE 5:
NOMINAL CROSS-SECTION OF A PROJECT AREA
CURRENT CONDITION

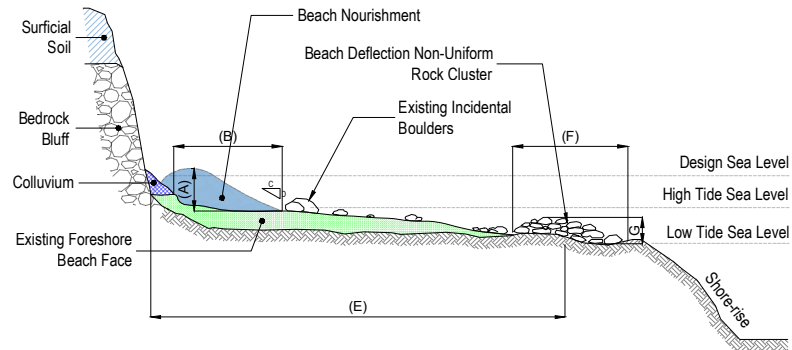


FIGURE 6:
NEAR-TERM CROSS-SECTION

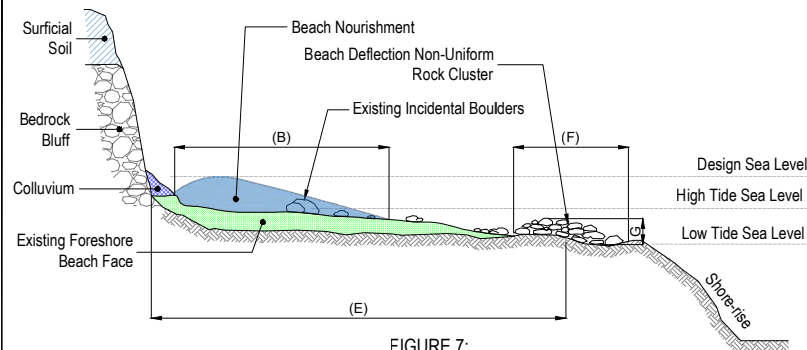


FIGURE 7:
5 YEAR CROSS-SECTION

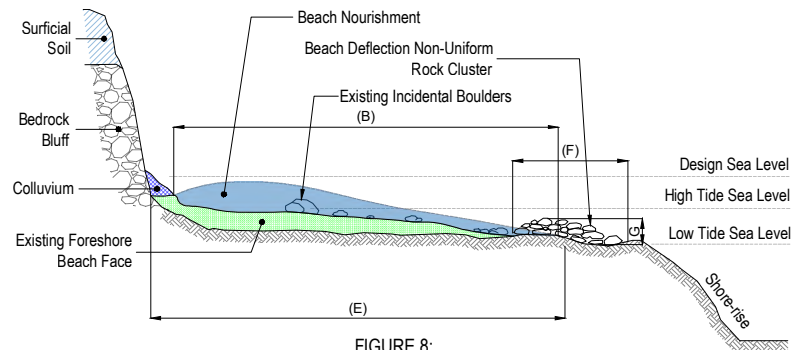


FIGURE 8:
15 YEAR CROSS-SECTION

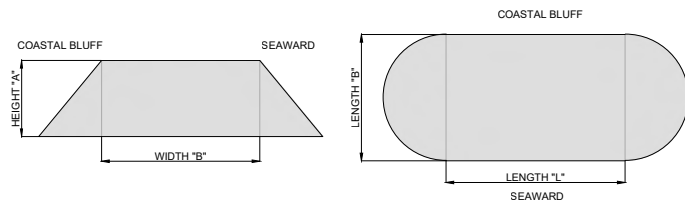


FIGURE 9:
INSTALL PROFILE
(MASS PLACEMENT)

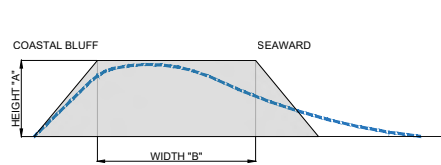
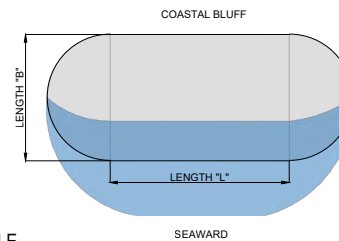


FIGURE 10:
INSTALL PROFILE
(SHAPING)



REV	DESCRIPTION	DATE	BY
A	ISSUED FOR DISCUSSION	24-AUG-22	BJGF
B	ISSUED FOR APPLICATION REVIEW	01-FEB-24	BJGF
O	ISSUED FOR APPLICATION	06-MAR-24	BJGF

GENERAL NOTES:
1) DIMENSIONS IN METRES UNLESS STATED OTHERWISE.

DESIGN NOTES:

LEGENDS:

- Beach Nourishment
- Existing Foreshore Beach Face
- Colluvium
- Surficial Soil
- Bedrock Bluff

Aurora PROFESSIONAL GROUP INC.

SALT SPRING ISLAND BRITISH COLUMBIA, CANADA
thinkpg.com / +1 250-930-2426

EGBC PERMIT TO PRACTICE NO: 100204

PROJECT TITLE:
BEACH EROSION PROJECT
2022.68 QUARRY DRIVE

CLIENT:
QUARRY / BAKER BEACH OWNERS GROUP

PROJECT LOCATION:
QUARRY / BAKER BEACH
SALT SPRING ISLAND, BC

DRAWING NO:
2022.68-46-LAY-005

PERMIT NO: TBC	DATE: 6-Mar-24
STAMP	DESIGN BY: TRE
	DRAWN BY: VBB
	SIZE: A1
	SCALE: NTS
	REVIEWED BY: BJGF
	SHEET: 50/5

APPENDIX E – EQUIPMENT USE COMMENTARY

Commentary on potential for ‘crush’ or ‘smother’ of existing organisms within near shore low-tide terrace.

This commentary is intended to address stated perspective about potential for ‘crush’ or ‘smother’ of existing organisms within near shore low-tide terrace during implementation or consequent to beach nourishment.

For the purposes of this commentary, crush will refer to the machine-trampling of organisms; while smother is meant to describe the burial beyond reasonable survival under placed beach nourishment materials.

Crush

A tracked vehicle will be used during placement of boulders and for final sculpting of beach nourishment materials. To facilitate the smooth operation of such machinery in an environment with plentiful cobble to stones, which can get caught in tread-mechanics and often lead to de-tracking or damage, the placement of protective sheeting is going to be requested of the contracted operator. Such sheeting, much like swamp mats, will distribute the applied force, and prevent the ‘churning’ of existing sediment/gravel by machine travel. The benefit to proponents will include less machine ‘down time’, and more clearly defined operating environment for the implementation contractor.

Smother

The introduction of beach nourishment materials is intended to mimic a seismic event and slope failure of the uplands, resulting in a moderate ‘loaf’ of material that will be re-worked and re-distributed throughout the low-tide terrace over the subsequent years. This approach is intended to minimize the potential for smothering, as the organisms will adapt as the beach nourishment spreads, while meeting the Green Shores imperative of simulating ‘natural processes’.

Additionally, the low-tide terrace currently has moderate coverage (~50%) with sediment/gravel greater than 5cm depth, resulting in a placement environment which will have less existing fauna than typical of gravel beaches without a bedrock terrace.

However, I do recognize that the depth and extent of sediment/gravel increases when traveling alongshore to the southeast. For that reason, and to directly address the coastal erosion mechanism occurring along the southeast of 431 Baker Road land parcel, the placement of beach nourishment material will be above the wrack line. By placing beach nourishment above the wrack line, the likelihood of fauna which rely on tidal wetting is greatly reduced.

I provide the above commentary for consideration of the Baker Beach Coastal Erosion Mitigation program. Should there be more discussion or additional information required, please contact the undersigned.

Best Regards,

A handwritten signature in black ink, appearing to read "Tom Elliot", is written over a circular professional stamp. The stamp is blue and contains the text: "PROFESSIONAL", "PROVINCE OF", "Dr. T. ELLIOT", "# 43570", "BRITISH COLUMBIA", and "GEO SCIENTIST".

Digital reproduction of physical stamp and signature. For original, please contact the issuer.

Thomas R Elliot PhD P.Geo P.Ag

MEMORANDUM

File No.: PLDP20240056 - 235 Quarry Dr.
X-Ref PLDP20240057 - 239 Quarry Dr.
File: PLDP20240058 - 431 Baker Rd.

DATE: May 2, 2025
TO: Legislative Clerk
Salt Spring Island Team
FROM: Stefan Cermak, Director, Planning Services
COPY: Oluwashogo Garuba, A/Planner 2
Chris Hutton, Regional Planning Manager, Salt Spring
SUBJECT: Delegated Development Permit Application
Applicant: Bradley Fossen
Location: 235 Quarry Drive, Salt Spring Island, BC

PURPOSE

The purpose of this memo is to not approve issuance of development permit PLDP20240056 (Fossen) pursuant to Land Use Permit Delegation Bylaw 534.

I have reviewed the staff report and professional reports (Attachment 1) and have concluded that the proposed development activities are not consistent with the objectives and guidelines of the development permit area. Specifically, the proposed sparse placement of boulders and installation of beach sediments conflict with Salt Spring Island Official Community Plan (OCP) Bylaw No. 434, 2008 objectives E.3.3.1 and E.3.3.2 and guidelines E.3.4.1; E.3.4.2; E.3.4.9; E.3.4.21; and E.3.4.22.

The applicant may have the decision to not approve issuance reconsidered by the Salt Spring Island Local Trust Committee by submitting a written request for reconsideration to the Deputy Secretary/Legislative Clerk within thirty days after the decision is delivered to or made available to the applicant.

The request for reconsideration must include the following:

- The applicant's address for receiving correspondence related to the request for reconsideration;
- A copy of the written decision;
- Reasons why the applicant wishes the decision to be reconsidered by the Local Trust Committee;
- The decision which the applicant requests be made by the Local Trust Committee;
- Reasons in support of the decision requested from the Local Trust Committee; and
- A copy of any documents which support the applicant's request for reconsideration by the Local Trust Committee.

Each reconsideration request shall be placed on the agenda of a regular Local Trust Committee meeting and shall include a copy of the materials that were considered by the Director of Planning Services (the "delegate") in making the decision that is to be reconsidered, and any further materials delivered by the applicant.

The Local Trust Committee may consider any presentations made by the applicant and may either:

- confirm all or part of the delegate’s decision,
- set aside all or part of the delegate’s decision; or
- amend the delegate’s decision or make a new decision.

NEXT STEPS

Director of Planning Services to contact applicant to inform them of decision. Applicant to consider appeal within 30 days. Deputy Secretary/Legislative Clerk to place appeal and relevant materials on regular Local Trust Committee agenda if applicable. Director to inform Local Trust Committee of decision once applicant has been informed. Planner to update file and/or direct Planning Team Assistant to update electronic file.

Submitted By:	Stefan Cermak, Director, Planning Services	May 2, 2025

ATTACHMENTS

1. Staff Report dated April 29, 2025 – with attachments

DATE: April 29, 2025

TO: Stefan Cermak, Director of Planning Services

FROM: Oluwashogo Garuba, A/Planner 2
Salt Spring Island Team

COPY: Chris Hutton, Regional Planning Manager

SUBJECT: Delegated Development Permit Application
Applicant: Bradley Fossen
Location: 235 Quarry Drive, Salt Spring Island, BC

RECOMMENDATION

1. That the Director of Planning Services deny issuance of PLDP20240056 (Fossen) as the proposed activities are not consistent with some of the Development Permit Area 3 (DPA 3) guidelines as outlined in the Salt Spring Island Official Community Plan (OCP) Bylaw No. 434, 2008.

REPORT SUMMARY

This report is to consider issuance of a delegated Development Permit (DP) application for the proposed beach erosion mitigation activity within the **Development Permit Area 3 – Shoreline Zones** located at 235 Quarry Drive, SSI (009-555-706). The application is supported by a letter of advice from the Department of Fisheries and Oceans and the following reports:

- Marine shoreline characteristics report.
- Geohazard assessment report.
- Environmental assessment report.

These reports and the proposal have been assessed by staff against the guidelines for development in DPA 3 as outlined in the Salt Spring Island Official Community Plan (OCP) Bylaw No. 434, 2008 and were found not to be substantially in accordance with the objectives and guidelines of DPA 3. Staff therefore recommends denying issuance of the requested DP.

BACKGROUND

The 1.24 hectares (3.06 acres) property, zoned Rural (R) is located at 235 Quarry Drive, SSI. The applicant has proposed shoreline stabilization works due to the identified bluff failure at the subject property which is occurring as a result of upland conveyance of rainwater contributing to pore water pressure in the soils/surficial material wedge sitting atop bedrock coastal bluffs and wave action creating toe erosion

(bedrock) or undercutting (sediments). Because of this, the owner of this property has proposed the following mitigation activities based on the recommendations of the professional Geophysicist and the reports of the geohazard and environmental assessments that were carried out:

1. Backshore planting of grasses and sedge to create clumps on the backshore terrace in order to encourage sediment accumulation.
2. Coastline planting of salt tolerant woody species of trees.
3. Planting of hydrophilic species common to the Douglas-fir-arbutus woodland species understory.
4. Sparse placement of boulders to accomplish wave deflection along the low-tide terrace to mimic and enhance the natural process.
5. Installation of beach sediments in order to dissipate incoming wave energy by changing the plunging breaker wave type (higher erosion) occurring under storm event conditions to a surging breaker wave type (lower erosion).

According to the Salt Spring Island Official Community Plan (OCP) Bylaw No. 434, 2008 guidelines for development within the DPA 3, the construction of shoreline stabilization works is not exempt from the requirement to obtain a development permit (Section E.3.1.2) in order to achieve the objectives of the DPA 3.

Therefore, a DP application is required for the proposed construction of shoreline stabilization works within the DPA 3. The Salt Spring Island Delegation Bylaw No. 534, 2022 delegates the consideration of this application and its issuance to the Director of Planning Services.



Figure 1: Subject property

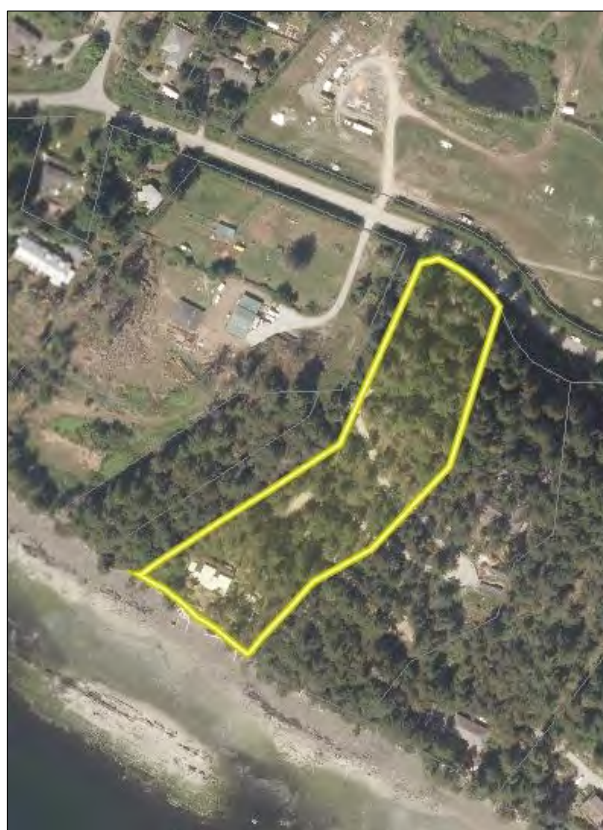


Figure 2: Ortho photo of subject property

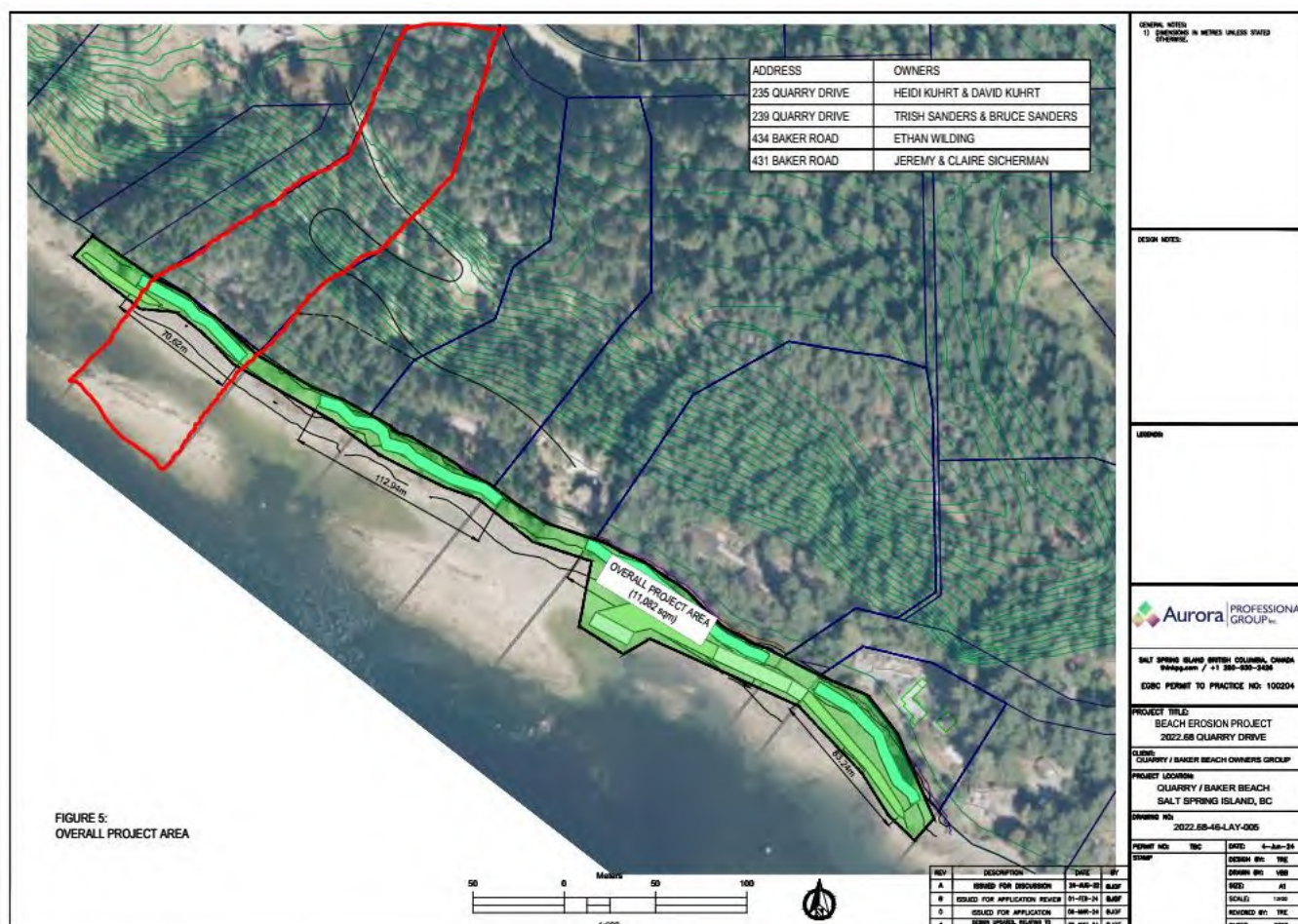


Figure 3 – Site Plan (areas within red highlight)

Professional reports submitted and attached:

- Geohazard Assessment report, October 15, 2023, prepared by Thomas R Elliot, PhD P. Geo P. Ag.
- Assessment of Marine Shoreline Characteristics, December 18, 2023, prepared by Thomas R Elliot, PhD P. Geo P. Ag.
- Summary of Baker Beach Shoreline Erosion Mitigation Recommendations, January 25, 2024, prepared by Thomas R Elliot, PhD P. Geo P. Ag.
- Environmental Assessment report, December 2023, prepared by Erin Vekic, R.P. Bio, M.Sc.

The DPA 3 checklist can be found as Attachment 2. The assessment reports listed above can be found as Attachments 3, 4, 5 and 6. The geotechnical assessment report indicates that the proposed erosion mitigation development activities do not increase the hazard rating to the existing single-family dwelling or the use of the subject property and also contains preliminary mitigation measures for the proposed beach nourishment activities. Staff have evaluated the proposed erosion mitigation activities and determined that they do not meet all of the DPA 3 objectives and guidelines.

ANALYSIS

Policy/Regulatory

Official Community Plan:

The Salt Spring Island Official Community Plan No. 434 designates the subject property as Rural Neighbourhood (RL) and the marine area as Marine Other. Staff note that a rock outcrop is approximately 50m from the natural boundary immediately adjacent to the subject property (Figure 3). This rock outcrop and another southeast of the subject property is designated as Parks and Recreation. The designation highlights one aspect of the public value of the area as a recreational site.

Land Use Bylaw:

The subject property is zoned Rural (R) in the Salt Spring Island Land Use Bylaw (LUB) No. 355, 1999 while the proposed erosion mitigation activities will be taking place within Shoreline 6 (S6) zone. The rock outcrops approximately 50m from the natural boundary are zoned Parks and Reserve 6.

The proposed development has been recommended by Thomas R Elliot, P. Geo (Geohazard Assessment report, 2023) to protect the marine environment from erosional geohazard.

Development Permit Area 3 – Shoreline (DPA 3)

The subject property is within DPA 3. This includes all the area of land covered by water between the natural boundary of the sea and a line drawn parallel to and 300 m seaward of the natural boundary of the sea. It also encloses the land within 10m of the natural boundary of the sea (measured horizontally) in areas where the marine environment has been identified as being particularly sensitive to development impacts.

This Development Permit Area includes shoreline waters and natural fish and wildlife habitat that could be subject to degradation due to development. It also includes areas of land that lie adjacent to and influence the island's most sensitive shoreline environments. Shoreline areas and beaches may contain unstable slopes and soils subject to erosion, land slip and rock falls. There are also high aesthetic values along shoreline areas.

The objectives of DPA 3 (Section E.3.3) are:

- To protect the quality of the tidal waters that surround Salt Spring Island.
- To protect fish and wildlife habitat.
- To prevent erosion and hazardous conditions that could result from interrupting the natural geo-hydraulic processes along the shoreline.
- To protect development from hazardous conditions.
- To protect the natural beauty of the island's shoreline areas where commercial and industrial developments are allowed. To ensure such development is unobtrusive and contributes to the natural, public character of the Crown foreshore.

As per subsection E.3.1.2 article (f), DPA 3 is applicable when there is a construction of shoreline stabilization works.

2024 DPA 3 Assessment Report

1. ***Environmental Assessment Report:*** was prepared by Erin Vekic, R.P. Bio, M. Sc. for this proposed development. According to Erin Vekic, the environmental assessment (EA) was designed to comply

with the DPA 3 guidelines outlined in the OCP. Although several mitigation measures were proposed in the report, the potential impact of the activities were not identified in the report. Also, the report did not specify how the fine gravel and sediments proposed for erosion control will remain in place in order to control the erosion. The report also did not indicate the potential impact to the eelgrass beds and forage fish spawning areas.

2. **Geohazard Assessment Report:** was prepared and submitted by Thomas R Elliot, PhD P. Geo P. Ag. The report indicated that there is a low risk of landslide hazard impacting the single-family dwelling but there is a high risk of erosional geohazard impacting the marine environment in an ongoing and progressive manner. The proposed erosion mitigation activities according to the report do not increase the hazard rating to the existing single-family dwelling.
3. **Final Summary Report on Mitigation:** was prepared and submitted by Thomas R Elliot, PhD P. Geo P. Ag., dated January, 2024. The report indicated that the erosion mitigation activities to be carried out to minimize the impact of the erosion happening on the shoreline. The report however did not indicate how long the beach nourishment will be able to dissipate the incoming wave energy before the sediments get dispersed.

Development Permit

Staff has not attached a draft permit at this time as the proposed development activities do not meet the DPA 3 guidelines. However, staff may report back with a draft Development Permit if the Director determines that the DPA 3 guidelines are met.

Rationale for Recommendation

The recommendations on page 1 are supported as:

1. the proposed activities are not consistent with the following guidelines of DPA 3:

E.3.4.1: All work that takes place below the natural boundary of the sea should be done in a way that minimizes degradation of water quality and disturbance of the substrate. - There is potential for disturbance of substrate arising from the proposed sediment deposit and use of machinery.

E.3.4.2: All work that takes place on land within 10 m of the natural boundary of the sea should be planned and carried out in a way that is consistent with the Land Development Guidelines for the Protection of Aquatic Habitat (Appendix 7).

- The deposit of sediments is likely to have negative impact on the fish habitat and the applicant has neither provided information on the likely impacts of this activity nor provided mitigation measure to minimize these potential impacts.

E.3.4.9: The shoreline should not be filled in to create additional land, except minor areas of fill necessary to complete the boardwalk section of the Ganges Public Pathway System in Ganges Harbour.

- The proposed activity includes the deposit of 434.4m² of aggregate materials, over about 300m of shoreline and at an initial height of 1.0 m above existing grade level.

E.3.4.21: Applications for shoreline stabilization should include a report, prepared by a Professional Engineer with experience in geotechnical engineering, which describes the proposed modification and shows:

- a. The need for the proposed modification to protect existing structures.
- b. Where the modification is proposed to protect new structures, the locations on the property where those structures could be built and not require shoreline modification.
- c. If any natural hazards, erosion, or interruption of geohydraulic processes may arise from the proposal modification, including at sites on other properties or foreshore locations.
- d. The cumulative effect of shoreline stabilization works along the drift sector where the works are proposed.
- e. Whether there will be any degradation of water quality or loss of fish or wildlife habitat because of the modification.
- f. Whether conditions should be incorporated into the development permit to achieve the objectives of this Development Permit Area.

– It is unclear what damage to the existing structure that the proposed activities is preventing and as a result of the increased turbidity from sediment supplementation, there could be a negative impact on the fish habitat.

E.3.4.22: Shoreline stabilization should be limited to that necessary

- a. To prevent damage to existing structures or an established use on adjacent upland.
- b. To prevent damage to a proposed public land use.

New upland structures or additions should be located and designed to avoid or reduce the need for shoreline stabilization. Shoreline stabilization should not interrupt natural processes solely to reduce erosion of undeveloped land, except agricultural land. – The public use of the land is not considered as damaging by the naturally occurring slow sediment erosion.

2. the proposed development activities are not consistent with some of the relevant objectives of the DPA 3:
 - E.3.3.1: To protect the quality of the tidal waters that surround Salt Spring Island.
 - E.3.3.2: To protect fish and wildlife habitat.

-- The proposed activities are likely to negatively impact the quality of tidal water as well as the fish and wildlife habitat through the changes to the sediment transport and water flow as a result of the sediment supplementation.

ALTERNATIVES

The Director may consider the following alternatives to the staff recommendations:

1. Request further information

The Director of Planning Services may request further information prior to making a decision. If selecting this alternative, the Director should describe the specific information needed and the rationale for this request.

2. Approve the application

The Director of Planning Services may determine that the guidelines are met and approve the application. If selecting this alternative, staff will return with a draft DP for consideration.

Submitted By:	Oluwashogo Garuba, A/Planner 2	April 29, 2025
Concurrence:	Chris Hutton, Regional Planning Manager	May 1, 2025

ATTACHMENTS

1. Site Context
2. DPA Guideline Checklist
3. Geohazard Assessment Report
4. Marine shoreline Characteristics Assessment Report
5. Summary of Baker Beach Shoreline Erosion Mitigation Recommendations Report
6. Environmental Assessment Report
7. DP Delegation Checklist (Staff only)

ATTACHMENT 1 – SITE CONTEXT

LOCATION

Legal Description	LOT 1 SECTIONS 6 AND 7 RANGE 1 WEST NORTH SALT SPRING ISLAND COWICHAN DISTRICT PLAN 46155
PID	009-555-706
Civic Address	235 Quarry Drive, Salt Spring Island, BC
Lot Size	12,383.39m ² 1.24 ha

LAND USE

Current Land Use	R – Rural
Surrounding Land Use	Parks and Reserves 5 - PR (5), Parks and Reserves 6 - PR (6), Rural - R

HISTORICAL ACTIVITY

File No.	Purpose
SS-BP-2017.33	To construct a single family dwelling
SS-DP-2024.3	Undefined

POLICY/REGULATORY

Official Community Plan Designations	Salt Spring Island OCP No. 434, 2008 Designations: Rural Neighbourhoods - RL; Development Permit Areas: DPA 3 - SHORELINE
Land Use Bylaw	Salt Spring Island LUB No. 355, 1999: Rural (R)
Covenants	Lease of Coal 5023D; Undersurface Rights 70453G; Undersurface Rights 337530G; Easement EC133683; Easement EC133687; Easement EF69095; Covenant CA6234107
Bylaw Enforcement	N/A

SITE INFLUENCES

Islands Trust Conservancy	The Islands Trust conservancy does not have any consideration for the application.
Regional Conservation Strategy	The Islands Trust Conservancy Regional conservation plan has a high priority for conservation of eelgrass located at the shoreline areas of the proposed development activities.
Species at Risk	Western Painted Turtle Pacific Coast population
Sensitive Ecosystems	Woodland
Hazard Areas	Moderate and Low risk steep slopes.
Archaeological Sites	Remote Access to Archaeological Data (RAAD) information indicates there are no archaeological sites on the property. However, there are areas of archaeological potential mapped on the property and therefore the applicant will be sent the Islands Trust Chance Find Protocol and provincial guidance on archaeological sites upon development permit

	application review. By copy of this report, the owners and applicant should be aware that unrecorded archaeological material is protected under the <i>Heritage Conservation Act</i> . If such material is encountered during development, all work should cease and Archaeology Branch should be contacted immediately as a <i>Heritage Conservation Act</i> 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	No additional impacts to GHG emissions anticipated as a result of this application.
Shoreline Classification	Low Rock/Boulder
Shoreline Data in TAPIS	N/ A

Salt Spring Island
OCP Bylaw No. 434, 2008
Development Permit Area 3 - Shoreline (DPA 3)
Guideline Checklist

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.1: All work that takes place below the natural boundary of the sea should be done in a way that minimizes degradation of water quality and disturbance of the substrate.	☐	☒	☐	Thomas R. Elliot, PhD P. Geo, has indicated that the proposed activity is taking place below the natural boundary of the sea – foreshore area. There is potential for disturbance of substrate arising from the proposed sediment deposit and use of machinery.
E.3.4.2: All work that takes place on land within 10 m of the natural boundary of the sea should be planned and carried out in a way that is consistent with the Land Development Guidelines for the Protection of Aquatic Habitat (Appendix 7).	☐	☒	☐	According to the Land Development Guidelines for the Protection of Aquatic Habitat, the deposit of sediments is likely to have negative impact on the fish habitat and the applicant has neither provided information on the likely impacts of this activity nor provided mitigation measure to minimize these potential impacts.
E.3.4.3: Native vegetation and trees are to be retained or replaced to control erosion, protect banks and protect fish and wildlife habitat.	☒	☐	☐	Proposed activity involves removal of invasive species and also the planting of native species of vegetation as outlined in the project description.
E.3.4.4: New roads and septic systems should not be located in this Development Permit Area. If such a location cannot be avoided, then the design and construction of the road or septic system should be supervised by a qualified professional to ensure that the objectives and guidelines of this Area are met	☐	☐	☒	
E.3.4.5: Structures should provide for the thorough flushing of all enclosed water areas and should not restrict the movement of aquatic life or interfere with natural shoreline processes.	☐	☐	☒	The proposed boulders and could potentially interfere with natural shoreline processes such as sediment transportation and therefore not in compliance with this guideline.
E.3.4.6 Open pile or floating breakwater designs are preferred. Solid breakwaters should not be used, except facilities that will accommodate a marina.	☒	☐	☐	Solid breakwater has not been proposed to be used in the application and therefore in compliance with this guideline.

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.7: New boating facilities that provide transient moorage should not be constructed unless access is available to adequate and convenient facilities for pump-out, holding and treating of sewage from boats. New boating facilities should be designed, located, and operated in a way that ensures there will be no discharge of toxic material from boats (for example: fuels, oils, maintenance by-products).	☐	☐	☒	
E.3.4.8: There should be no dredging to create new facilities. Maintenance dredging of existing facilities should be limited to the minimum area necessary to maximize the capacity of the existing facility. Dredging should be done with the use of silt curtains to prevent siltation of adjacent areas.	☐	☐	☒	
E.3.4.9: The shoreline should not be filled in to create additional land, except minor areas of fill necessary to complete the boardwalk section of the Ganges Public Pathway System in Ganges Harbour.	☐	☒	☐	The proposed activity does involve the filling of the shoreline. The proposed activity includes the deposit of 434.4m ² of aggregate materials, over about 300m of shoreline and at an initial height of 1.0 m above existing grade level (Report for Coastal Erosion Mitigation prepared by Thomas R Elliot TRE Environmental Services Pg. 6 & 7).
E.3.4.10: No parking areas should be located over the surface of the water, on land created by fill, or on accretion shoreforms.	☐	☐	☒	
E.3.4.11: Boat launch ramps should be located on stable, non-erosional banks where a minimum amount of substrate disturbance or stabilization is necessary. Ramps should be kept flush with the slope of the foreshore to minimize interruption of geo-hydraulic processes.	☐	☐	☒	

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.12: Preference is to be given to the placement of mooring buoys and floats instead of docks. It is also to be given to the construction of joint use docks rather than individual ones. Multifamily and strata-titled developments are to construct joint use dock facilities. No more than one facility for mooring boats is to be located next to any parcel. An exception could be made if more than one joint facility is to be located next to the common property of a strata development.	☐	☐	☒	
E.3.4.13: Docks should not be located over shellfish beds or lead to the removal of any kelp or eel grass beds.	☐	☐	☒	
E.3.4.14: Large residential docks should be located and designed to avoid the need for shore defence works, or breakwaters. If a bulkhead is to be constructed as a base for a dock, it should be constructed landward of the natural boundary of the sea.	☐	☐	☒	
E.3.4.15: Structures in contact with the water should be constructed of stable materials, including finishes and preservatives that will not degrade water quality.	☐	☐	☒	Boulders have been proposed for the project.
E.3.4.16: Piers should use the minimum number of pilings necessary, with preference to large spans over more pilings.	☐	☐	☒	
E.3.4.17: Piers should be constructed with a minimum clearance of 0.5 m above the elevation of the natural boundary of the sea.	☐	☐	☒	
E.3.4.18: All docks should be constructed so that they do not rest on the bottom of the foreshore at low water levels.	☐	☐	☒	
E.3.4.19: Any plastic foams or other non-biodegradable materials used in construction of floats and docks should be well contained to prevent escape into the natural environment.	☐	☐	☒	

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.20: Residential docks should not extend from shore any further than necessary to accommodate a small pleasure craft. Residential docks should not accommodate boats with a draft greater than 2.2 m or have floats more than 35 m ² total surface area unless more than two parcels have legal access to the dock.	☐	☐	☒	
E.3.4.21: Applications for shoreline stabilization should include a report, prepared by a Professional Engineer with experience in geotechnical engineering, which describes the proposed modification and shows: - The need for the proposed modification to protect existing structures. - Where the modification is proposed to protect new structures, the locations on the property where those structures could be built and not require shoreline modification. - If any natural hazards, erosion, or interruption of geohydraulic processes may arise from the proposal modification, including at sites on other properties or foreshore locations. - The cumulative effect of shoreline stabilization works along the drift sector where the works are proposed. - Whether there will be any degradation of water quality or loss of fish or wildlife habitat because of the modification. - Whether conditions should be incorporated into the development permit to achieve the objectives of this Development Permit Area.	☐	☒	☐	The Geotechnical report states that the purpose of erosion mitigation is to reduce risk of GU 4. The Geotechnical report submitted by the applicant indicated that the building location is safe for the use intended. The proposed erosion mitigation activities could potentially bring about an interruption of the geohydraulic process as a result of the interference with the shoreline sediment transportation. Potential water degradation could occur as a result of increased turbidity from the sediment supplementation, this could also impact the fish habitat negatively by the changes to the sediment transport and water flow as a result of the proposed erosion mitigation activities.

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.22: Shoreline stabilization should be limited to that necessary a. To prevent damage to existing structures or an established use on adjacent upland. b. To prevent damage to a proposed public land use. New upland structures or additions should be located and designed to avoid or reduce the need for shoreline stabilization. Shoreline stabilization should not interrupt natural processes solely to reduce erosion of undeveloped land, except agricultural land.	☐	☒	☐	The Geotechnical report submitted by the applicant indicated that the building location is safe for the use intended. The Geotechnical report identified a high incremental risk of geohazards for GU4.
E.3.4.23: Shoreline stabilization works should use natural means such as vegetative stabilization or protective berms rather than structural solutions such as concrete or large riprap. Applications for structural stabilization works should provide an explanation as to the need for structural solutions. Structural solutions should not be employed in the Shoreline Conservation Designation, unless an existing building is threatened by wave erosion and cannot be protected by other means.	☒	☐	☐	Applicant has confirmed that structural solutions are not considered for the proposed activity. The proposed activity will only include vegetative stabilization/restoration along with energy dissipation by sparsely placing boulders (0.5 – 1.2m boulders, sandstone or low sulphide granite, rounded to sub-rounded (no blast rock)) along the low tide terrace within the foreshore area, these will be placed at intervals and therefore considered to be consistent with this guideline. Geotechnical report provided by applicant indicates that there are no up-slope hazards likely to impact the existing single family dwelling (pg. 11).
E.3.4.24: Materials used for shoreline stabilization should consist of inert materials. Stabilization materials should not consist of debris or contaminated material that could result in pollution of tidal waters.	☒	☐	☐	QEP (Bradley Fossen) indicated that the proposed materials do not consist of debris or contaminated material as the applicant has indicated that the materials for the beach nourishment will be clean undisturbed quarry materials. Therefore, the activities will not consist of materials capable of polluting the tidal waters.

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.25: Rock weirs, groins and jetties should not be constructed. An exception could be made if it can be shown that they are part of a larger system that will reduce the need for overall shoreline modification and that they are intended to prevent damage to existing structures. They should not be proposed to protect new structures.	☐	☐	☒	
E.3.4.26: Bulkheads should only be constructed if no other alternative exists. Where bulkheads are proposed, they should not be located where geohydraulic processes are critical to shoreline conservation. Feeder bluffs, marshes, wetlands, spits or hooks should be avoided. Bulkheads should be located parallel to and landward of the natural boundary of the sea, as close to any natural bank as possible. Bulkheads should allow the passage of surface or groundwater without causing ponding or saturation. They should be constructed of stable, non-erodible materials that preserve natural shoreline characteristics. Adequate toe protection including proper footings and retention mesh should be included. Beach materials should not be used for fill behind bulkheads.	☐	☐	☒	
E.3.4.27: Where revetments are proposed, they should not result in the loss of riparian vegetation or fish habitat. The size and quantity of materials used should be limited to that necessary to withstand the estimated energy of the location's hydraulic action and prevent collapse. Filter cloth should be used to aid drainage.	☐	☐	☒	Thomas R Elliot has indicated that no revetments will be used for the proposed activity.
E.3.4.28: Where this Area includes unique native species dependent on a marine shoreline habitat which have been identified by a qualified professional as worthy of particular protection, their habitat areas should be left undisturbed. If development is permitted in these areas, it should be undertaken only under the supervision of a professional who is qualified in environmental protection, with advice from the Ministry of Environment, the Department of Fisheries and Oceans, or Environment Canada.	☒	☐	☐	The Environmental Assessment report (prepared by Erin Vekic, Corvidae Environmental Consulting Inc.) indicated the project area has some native species dependent on marine shoreline habitat and the project therefore needs to be supervised by a Qualified Environmental Professional or Registered Professional Biologist. This condition has been incorporated into the Draft Permit.

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.29 To assist in the preparation of development permits for larger projects, the Local Trust Committee could request an applicant to provide a report, prepared by a qualified professional with experience in the protection of the natural environment. The report should indicate the type of conditions that should be incorporated into the development permit to achieve the objectives and comply with the guidelines of this Development Permit Area.	☐	☐	☐	This may be considered a “larger project” due to its multiple properties involved and the overall impact to a community recreation area. I will not request this. However, the LTC may.
E.3.4.30: Buildings built over the water surface in areas zoned for commercial and general employment use in Ganges and Fulford Harbour should accommodate continuous pedestrian passage along the waterfront. Developments in Ganges should contribute to the development of the Ganges Public Pathway System, including the seawalk portion, shown on Map 17. New sections of the seawalk should be built in a way that is consistent with existing portions, ensuring barrier-free access along the entire route. For public safety, light fixtures should be provided at a consistent height and design.	☐	☐	☒	
E.3.4.31: Buildings built over the water surface should not exceed the heights allowed in the local zoning bylaw. Building form in Ganges and Fulford harbours should be consistent with the guidelines in Section E.1.6.	☐	☐	☒	
E.3.4.32: Lighting of commercial and general employment developments built over the water surface should be kept to the minimum necessary for safety and visibility. Light fixtures on such sites should be simple and unobtrusive in design. They should be carefully chosen to focus light on the area to be illuminated and avoid spillage of light into other areas. Fixtures should not result in glare when viewed from areas that overlook the sea. Low-glare fixtures with a high cut-off angle should be used. Full-spectrum fixtures are preferred. Neon lighting should not be used outside buildings.	☐	☐	☒	

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.33: Signs on commercial and general employment developments built over the water surface should not exceed the size or total area allowed by local bylaw. Signs on such sites should not move or be audible and should not incorporate lighting that moves or flashes or gives the impression of doing so.	☐	☐	☒	

Geohazard Assessment of Lands

As pertaining to land parcel:

PID 009-555-706

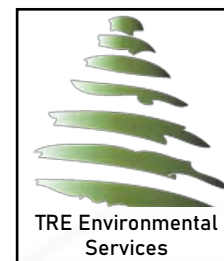
235 QUARRY DRIVE, SALT SPRING ISLAND

LOT 1, SECTIONS 6 AND 7, RANGE 1 WEST, NORTH SALT SPRING ISLAND,
COWICHAN DISTRICT, VIP46155

Report for Coastal Erosion Mitigation

Developed for: Heidi Kuhrt, David Kuhrt (Landowners)
235 Quarry Drive
Salt Spring Island, BC V8K 1J2

Developed by: Thomas R Elliot PhD P.Geo P.Ag
TRE Environmental Services
tom@elliot.org



1. Synopsis

The subject land parcel, with PID 009-555-706 and legal description of Lot 1, Plan VIP46155 (Site), is situated on the lower southwest-facing flank of a slope which terminates to the Salt Spring Island ocean-shoreline in a coastal bluff. The Site is proposed to undergo coastal erosion mitigation development activities within the Shoreline Development Permit Area¹ (DPA 3) of the Islands Trust (IT), which prompted this geohazard assessment to identify mechanisms contributing to erosion of the coastal bluff that would create hazardous conditions for existing single-family dwelling (SFD) and the natural environment.

The Site consists of a moderate-steep benching bedrock slope with a veneer to mantle of stoney sandy loam to loamy sand. There is a veneer of colluvial boulders to stones accumulated below bedrock outcropping. The slope descends from a ~58m above sea level (asl) elevation regional northwest-southeast aligned bedrock ridge. The bedrock ridge is sandstone at elevation and transitions to shale and metamorphic deposits of the Nanaimo Sedimentary Group closer to sea level. At ~10m asl elevation, a metamorphic-rock coastal bluff rises above the natural boundary and is capped with a 2 – 4m thick mantle of gravelly sandy loam.

While there is no ephemeral or permanent surface watercourse observed at Site, the presence of near-surface groundwater is apparent where bedrock outcrops force phreatic water to surface.

The erosion and sediment mass-wasting observed on Site primarily consists of two concurrent processes:

Wave action a culmination of mechanical wave-action, daily sunlight-driven thermal oscillation, and saturating water-spray promotes decomposition and failure of fine-grained metamorphic bedrock situated in the lower 6 - 7m of coastal bluff. This results in toe erosion which, over time, destabilizes the portion of coastal bluff above.

Pore water sufficient pore water pressure below the phreatic surface can acts as a destabilizing factor to overcome cohesion, friction angle and soil weight – entirely independent of toe erosion. While the majority of episodic pore water pressure erosion occurs during the rainy season, localized increases in pore water pressure can also lead to instability during otherwise drought conditions.

Through assessment of the Site subject to Shoreline DPA, Thomas R Elliot PhD P.Geo P.Ag has determined a Low risk of landslide geohazard impacting the SFD. However, there is a High risk of erosional geohazard impacting marine environment in an ongoing and progressive manner.

¹ IT Bylaw 488 - https://islandstrust.bc.ca/wp-content/uploads/2020/10/SS-BL-434_2020-10_OCP_Vol1-2.pdf

This determination is based on geophysical indicators on Site, regional frequency of historic landslide in the area, as well as assessment of Site surficial materials, hydrologic regime, topography and slope failure mechanics, as detailed through this report.

The proposed erosion mitigation development activities do not increase the hazard rating to the existing SFD or occupancy of Site.

2. Introduction

Development activity within the IT is being pursued on the subject land parcel with PID 009-555-706 (the 'Site', see Figure 1 – Appendix 1). The R (Rural) zoned land parcel is located on a southwest-facing flank of a slope which terminates to a coastal bluff ocean-shoreline. The Site is accessible via Quarry Road arriving from the north, at top of the slope, where a private roadway has been established.

This report includes assessment of pre-existing and field-gathered data which informs a geohazard risk assessment and guides proposed erosion mitigation measures.

There exists DPA 3 requirements for non-exempt development activities within 10m landward and 300m seaward of the marine-shoreline natural boundary. Due to land parcel configuration there is currently 10m setback from the natural boundary and existing SFD, resulting in a requirement to obtain DP if proposed erosion mitigation activities are occurring in this setback. Therefore, proposed landward erosion mitigation activities will be considered in context of existing structures, near-surface water management and erosion processes observed at the coastal bluff.

This report is a cumulative evaluation of existing and field-based data toward determining risk to SFD and natural environment associated with geohazards present on Site, and impact of proposed erosion mitigation measures on identified geohazards.

2.1. Author Qualifications

Thomas R Elliot PhD is a Qualified Professional (QP) Geoscientist [# 43570] and Professional Agrologist [# 3045] registered within the Province of British Columbia and in good standing with both professional associations. The QP has 16 years of geohazard, soil science, near surface groundwater and aquifer hydrogeology practice. In the last 9 years, Thomas R Elliot has primarily worked on Vancouver Island and the Lower Mainland of British Columbia in the practice areas of [Geoscience]: Hydrogeology, Geohazard mitigation assessments, Soils/Groundwater management; and [Agrology] Soil science, Agriculture, and Contaminant detection, mitigation and remediation.

3. Scope, Context & Motivation

The proposed development activities are erosion mitigation measures for identified geohazards toward reducing risk to the existing SFD and natural environment on Site.

This report does not determine the specific erosion mitigation activities due to a requirement for comprehensive assessment of near shore environments prior to identification of suitable measures. A comprehensive assessment includes this geohazard report in addition to an evaluation of beach and wave characteristics that will collectively inform suitable erosion mitigation activities through the Marine Shoreline Design Guidelines² that have been broadly adopted by Province of BC and Federal Department of Fisheries and Oceans.

The motivation to produce this report is to provide IT record of existing geohazard conditions on Site; predicted impact of proposed development activities; and if the proposed development activities – in context of existing or novel geohazards – allows for safe Rural-residential use of the land, as intended.

4. Regulatory Context

This section is dedicated to review of applicable Regulations and Acts, as governing legislation for individual and group risk of harm/death related to land use, as well as general permitting and authorization requirements of intended land use and proposed erosion mitigation development activities.

Further, the Department of Fisheries and Oceans would also be requested to conduct review of proposed activities in conjunction with the local IT DPA 3 permitting requirements.

4.1. IT Shoreline DPA

The geohazard assessment for the proposed works is warranted under MA Section 879 (1)(a) and (b) which prompts IT to protect the natural environment and to protect development from hazardous conditions; as specifically governed by IT Bylaw 434, V 2, S E.3 Development Permit Area 3 – Shoreline (enacted through IT Bylaw 488).

IT Bylaw 488, DPA 3 – Shoreline requires development permit applications be submitted for activities occurring 10m landward in areas where the marine environment has been identified as being particularly sensitive to development impacts.

If the proposed erosion mitigation works are to include: breakwater, weir, groin or jetty; bulkheads; placement of fill; removal of trees with diameter greater than 20cm OR removal of vegetation that results in the exposure of a total area of bare soil more than 9m² in area – then there is requirement for IT approved Development Permitting.

² Johannessen, J.¹, A. MacLennan¹, A. Blue¹, J. Waggoner¹, S. Williams¹, W. Gerstel², R. Barnard³, R. Carman³, and H. Shipman⁴. 2014. Marine Shoreline Design Guidelines. Washington Department of Fish and Wildlife, Olympia, Washington. **1** Coastal Geologic Services Inc.; **2** Qwg Applied Geology; **3** Washington State Department of Fish and Wildlife; **4** Washington State Department of Ecology

4.2. DFO Authorization

Pursuant to the *Fisheries Act*, should a requested DFO project review determine that proposed development activities are likely to cause the death of fish and/or harmful alteration, disruption or destruction of fish habitat – then authorization would be required.

Since the development activity (i.e. erosion mitigation measures) are currently undefined, this report is unable to establish whether DFO authorization will be required.

5. Site Conditions: Existing and Field Data

5.1. Slope, Geology, Soils & Surficial Materials

At shoreline, the Site has a ~8 – 12m coastal bluff consisting of siltstone and shale at base and capped with 1 – 2m of surficial material. Above which there are three distinct slope sections of the Site. The lowest is a gently sloping (~5 - 15%) bench above the coastal bluff where the SFD on Site exists, above which is a bedrock-controlled section of 30 – 35%. This second benching section does not exceed the angle of repose for local loamy soils, above which local sediment has increased likelihood of instability. The last slope section crests at a ridge-top and drops in elevation to Quarry Drive.

Soil associations on Site were previously mapped³ in elevation-limited bands which correspond to the changes in slope, which is consequent to change in sea level during glaciation and inter-glacial periods. Starting at present day marine shoreline and ascending up slope, the soil associations present on Site include a typically <2m thick veneer of well drained loam Galiano soil, which are derived from colluvium⁴, on the lowest slope.

At higher elevation, a band of thin <2m veneer of Saturna well draining sandy loam soils with prominent bedrock outcropping ascend to an elevation of ~58m asl. This portion of the land parcel is the source of boulders and other large loose rock masses which form sparse accumulations at lower elevations.

At upper elevations, Haslam well draining sandy loam soils are prevalent and functionally attenuate precipitation as it infiltrates to near surface bedrock.

The bedrock on Site was mapped as belonging to the Nanaimo Group⁵, with sparse details on the surficial rock type in existing records. On Site, the mid and upper elevation presented sandstone at surface, while at lower elevations a change from shale transitioning to siltstone

³ Soil Information Finder Tool.

<https://governmentofbc.maps.arcgis.com/apps/MapSeries/index.html?appid=cc25e43525c5471ca7b13d639bbcd7aa>

⁴ Soils of Southern Vancouver Island. MOE Technical Report 17.

<https://sis.agr.gc.ca/cansis/publications/surveys/bc/bc44/index.html>

⁵ Vancouver Island Geology. https://www.gac-cs.ca/publications/FT_Geology_of_Vancouver_Island.pdf

at coastal bluff occurred. The rock types identified on Site are characteristically found in the Nanaimo Group.

5.2. Surface & Groundwater

There are no identified or observed watercourse on Site. However, accumulation of rainwater and drainage from the access road does present areas of increased surface water discharge to forest floor. These areas are demarcated by accumulation of debris moved by the flow of surface water, increased annual vegetation growth, and an infiltrative surface – the extent of which is related to volume of accumulated rainwater.

Infiltration of each soil association on Site is unrestricted by soil texture, meaning that in areas where water does accumulate at surface there is a low-permeability limiting layer (i.e. bedrock) which prevents continuous downward migration. Instead, as infiltrating water reaches bedrock, lateral dispersion becomes dominant and results in a phreatic surface (i.e. perched groundwater table) establishing within the thin <2m veneer of surficial earth materials.

Where bedrock outcrops to surface, the veneer of surface material thins and ‘pinches out’, resulting in emergence of phreatic water. These ‘weeps’ or ‘springs’ are not to be conflated with artesian conditions, as these waters do not enter a confined aquifer and pore water pressure does not exceed atmospheric pressure. While not individually significant to Site surface hydrology, the irregular bedrock surface accumulates these phreatic weeps to a subsurface non-contiguous perched water table within the veneer of well-draining surface material.

Due to this accumulation mechanism, there is an increased depth of perched water table at lower elevations of the Site. Therefore, it is warranted to conduct specific geohazard assessment of areas where surficial materials convey the accumulated depth of perched water table due to an increased pore water pressure forcing erosion at the coastal bluff.

6. Geohazard Assessment

This landslide risk assessment was largely conducted according to the Engineers and Geoscientists of BC document *Guidelines for Legislated Landslide Assessments for Proposed Residential Developments in BC*⁶. The landslide risk assessment methods that were utilized includes all aspects of landslide hazard analysis, such as regional frequency and historic evidence to inform current and future landslide hazards; as well as evaluation of hazard likelihood, and consequence of landslide impact, to formulate a relative risk matrix which is comparable with levels of landslide safety adopted by the approving jurisdiction.

⁶ EGBC Guidelines for Legislated Landslide Assessments for Proposed Residential Developments in BC. <https://www.egbc.ca/getmedia/5d8f3362-7ba7-4cf4-a5b6-e8252b2ed76c/APEGBC-Guidelines-for-Legislated-Landslide-Assessments.pdf.aspx>

The assessment was restricted to the Site, as indicated in Figure 1, and specifically includes bedrock of the coastal bluff.

6.1. Investigation of Historic Failures in Area & Seismic Compliance

A review of historic aerial imagery was conducted on the surrounding area to determine frequency and spatial distribution of natural and induced landslides.

There were no mid-slope landslide scarps, transport paths, or deposit zones identified in proximity to Site or on similar colluvium slopes within the region within historical aerial imagery.

Through this lack of landslide evidence, and the existing evidentiary record of significant seismic events over the past ~500 years, there is no suggestion that natural slopes on Site would fail under seismic disturbances.

For example, a seismic event occurred at 10:13 a.m. on Sunday June 23, 1946 which measured at 7.3 on the richter scale, and was considered a significant seismic event which exceeds the 2% in 50 years magnitude. Therefore, as the Site and surrounding slopes exhibits no evidence of displacement consequent to ground motion, this historic record demonstrates compliance with seismic design at existing or proposed slopes of lower angle.

The presence of loose boulders (up to 1.2m in diameter were observed) on mid-slopes above the non-habitated (i.e. driveway, not SFD) lower slope on Site does suggest an increased likelihood of injury or death of an individual (i.e. consequence) while posing no likelihood for harm to the natural environment. However, the likelihood co-location of an individual within the increased consequence pathway is very remote and therefore does not contribute to overall risk considered herein.

6.2. Field Investigation

On Sept 17th, 2023 Thomas R Elliot PhD P.Geo P.Ag attended to Site as a QP with declared competency in geohazards, hydrology and soil science to evaluate the geohazards, ground and surface waters present on Site.

Field data was acquired according to, and through the implements noted in Table 1 below.

Table 1 – Summary of Field Work

Project ID:	2023.900	Project Name:	Baker Beach Erosion Mitigation
Project Type:	Erosion Mitigation (Geohazard)	Lead Investigator:	Thomas R Elliot PhD P.Geo P.Ag
Client:	Aurora Professional Group	Client Contact:	Brad Fossen P.Eng
Site Boundary Type:	Land Parcel	Site Common Address:	235 Quarry Drive

Site Legal Description:	VIP46155, LOT 1	Site PID #	009-555-706
Site Land Use:	Rural residential	Site Condition:	Secondary growth
Development Activity:	Erosion mitigation measures	Project Stage:	Assessment
DPA:	DPA3 – Shoreline	Provincial/Federal:	DFO review
Equipment Used:	- Clinometer - Compass - Engineer's tape - GPS tracking - Field soils kit - Range finder - Shovel and hand tools - Soil probe - Camera		
Summary of Site Activities:	• Site and Soils Assessments • Evaluate Terrain Stability & Geohazard • Document visible erosion mechanisms, ground and surface water		

6.3. Geohazard Units

Based on self-similar geophysical and hydrologic characteristics of the Site, a number of Geohazard Units (GU) were defined by the attending QP. Each GU has been assigned a respective Geohazard, or relative likelihood of a landslide event occurring, based on the documented geophysical and hydrologic characteristics.

The incremental change in Geohazard within a GU consequent to the proposed Development Activity is evaluated by the QP in order to arrive at impact of said Development Activity. The subsequent QP interpretation and recommendations are intended to fulfil requirements of the IT Shoreline DPA.

6.4. Wave Action and Erosion Hazard

Along the coastal bluff in proximity to Site there were numerous small-scale mass-wasting scarps consequent to erosion. Of those observed on Site, those occurring at base of the coastal bluff also had ongoing erosion of the sediment cap at top of the coastal bluff – suggesting a classic toe erosion mechanism. The bedrock toe erosion is driven by a combination of mechanical factors (e.g. wave-impact, thermal expansion, wedging/sediment jacking of fractures, etc.) and chemical factors (e.g. dissolution of binding carbonates, salt/crystal growth, etc.). The most prevalent of which appears to be wave-impact, which – due to orientation of metamorphic rock laminae and wave-direction – peels the friable bedrock during storm events.

Otherwise, erosion occurring at mid or upper portion of the coastal bluff was based in surficial material – the mechanism of which is explored in the Groundwater and Erosion Hazard section of this report.

6.5. Groundwater and Erosion Hazard

There exists a transient erosion hazard consequent to high pore water pressure conditions within the veneer of surficial Galiano soils at base of the slope on Site, as a component of the failing coastal bluff.

Under adverse climatic conditions, this hazard would result in a limited mass wasting failure which would mobilize and entrain the full depth of surficial material. With standard climatic conditions, this mechanism is not as likely to result in such mass failure – instead, punctuated failure events will see progressive steepening and erosion at base of the surficial material cap atop the coastal bluff. This steepening will progress until a larger landslide failure event re-establishes at angle of repose – migrating the erosion front landward, toward the SFD.

Therefore, since the erosion of surficial material – over the long term – could impact the SFD, there are recommended mitigation measures which can be found in Section 7 of this report.

6.6. Hazard Rating

There was no pre-existing geohazard rating established through QP assessment and reporting, to the awareness of the author at time of writing.

The Site natural slopes were less than the angle of repose for moist gravelly sandy loam to loamy sand colluvium earth materials (35 - 45% or 19° - 24°)⁷ above which slope-failure becomes more probable.

The landslide hazard rating for the entire Site was lower due to strong bedrock control at upper elevations, with shallow depth to bedrock for the remainder of Site, and therefore limited surficial material which would mobilize.

However, the surface sediments capping the coastal bluff have an increased erosional hazard due to presence of a perched water table in the lower slopes.

Consequent to these observations and slope gradients, GU on Site were assigned a VERY LOW to LOW hazard ratings outside of the coastal bluff, which classified as HIGH.

As per Appendix 2 – Geohazards and Risk, the GU defined on Site are summarized in Table 2, below.

Map imagery of GU delineation is found in Appendix 2 and is a recommended reading accompaniment to this section.

⁷ H. Al-Hashemi, O. Al-Amoudi. A review on the angle of repose of granular materials. Powder Technology Volume 330, 1 May 2018, Pages 397-417. <https://doi.org/10.1016/j.powtec.2018.02.003>

Table 2 – GU Hazard Rating and Risk

Geohazard Unit	Hazard Rating and Risk			
	Slope Characteristics	Hazard Rating	Consequence	Incremental Risk Rating
1	Cv Br benching ± 35 - 40%	VERY LOW	LOW	Very Low
2	Cv / Br planar ±25 - 35%	LOW-MODERATE	LOW	Very Low
3	Cm planar ±5 - 15%	VERY LOW	LOW	Very Low
4	Cv / Br planar ±150 - 180%	HIGH	HIGH	High

Geohazard Shorthand Notation

Br – Bedrock

C – Colluvium

A – Aeolian

L – Lacustrine

GF – Glaciofluvial

GT – Glacial till

M – Marine

v – veneer (.1 – 2m)

m – mantle (2 – 5m)

b – blanket (>5m)

/ - overlying

| - equal surface exposure

benching – slope interrupted by bedrock

planar – linear slope

6.7. Consequence of Geohazard Event

The Consequence of a geohazard incident was evaluated by the QP based on downslope receptors, predicted size and volume of geohazard event, and a simplistic Farböschung assessment – as detailed in Appendix 2 – Geohazards and Risk.

The most active failure mechanism on Site is punctuated landslide erosion of surficial materials at the coastal bluff (GU 4). The mobilized material would deposit directly to the marine environment, resulting in HIGH consequence.

Outside of which, the second likely failure mechanism on Site would be a mid-slope (GU 2) failure within a colluvium filled relic bedrock draw where a perched water table decreases shear resistance. However, due to the veneer of surficial material in the initiation area, any landslide would impact a limited area due to lack of transportable surficial materials from the initiating area or on low gradient receiving slope (GU 3). The low gradient receiving slope has sufficient width to retain mobilized material, resulting in a LOW consequence.

Summarily, the most likely geohazard results in a HIGH consequence while the remainder of Site has a LOW consequence.

6.8. Incremental Risk Imposed by Development Activity

The purpose of proposed erosion mitigation development activities is to reduce the geohazard risk of GU 4. This report has identified the active failure mechanisms resulting in erosion of the coastal bluff, from which mitigation measures can be evaluated.

6.9. Suitability of Lands for Use Intended (SFD)

There are no up-slope hazards likely to impact the SFD location.

While GU 4 has a High risk rating, the progressive-over-time nature of failure mechanisms for this area would provide opportunity to conduct more specific geotechnical review, and/or implement mitigation or emergency measures prior to impacting the SFD and ~3m of surrounding liveable space.

With no off-Site hazards and a LOW likelihood of failure above an existing SFD – the building location is **SAFE FOR THE USE INTENDED** (Residential Single Family Dwelling).

7. Geohazard Mitigation Recommendations

Due to the HIGH incremental risk of geohazards for GU 4, there are mitigation recommendations intended to reduce the risk to LOW.

7.1. Erosion and Sediment Control

All proposed activities will require Erosion and Sediment Control planning which meets IT regulatory requirements. Any such plan should be developed toward acquiring a Development Permit from the IT for the proposed activities and shall be submitted alongside any additional required paperwork.

There are two identified erosion mechanisms:

Pore water sufficient pore water pressure below the phreatic surface can acts as a destabilizing factor to overcome cohesion, friction angle and soil weight – entirely independent of toe erosion. While the majority of episodic pore water pressure erosion occurs during the rainy season, localized increases in pore water pressure can also lead to instability during otherwise drought conditions.

Mitigation options include, but are not limited to:

- Annual monitoring of erosional regression of surficial materials at the coastal bluff;
- Groundwater intercept and redirection to non-erosive receiving environment;

- Bioengineering and selective planting of native species toward increasing shear strength of surficial materials;
- Re-contour of the surficial materials to allow for emergence of groundwater without erosion;
- Selective removal of shoreline trees deemed hazardous due to toe erosion.

Wave action a culmination of mechanical wave-action, daily sunlight-driven thermal oscillation, and saturating water-spray promotes decomposition and failure of fine-grained metamorphic bedrock situated in the lower 6 - 7m of coastal bluff. This results in toe erosion which, over time, destabilizes the portion of coastal bluff above.

Mitigation options include, but are not limited to:

- Monitoring rate of erosion so as to establish a predictive timeline of coastal bluff regression;
- Bioengineering and selective planting of native species toward dissipated wave-impact on coastal bluff face;
- Wave deflection within intertidal area;
- Beach nourishment to dissipate wave energy;

The suitability, efficacy and ease of implementation and maintenance of these recommended mitigation options should be carefully considered in context of Marine Shoreline Design Guidelines which will require an integrated assessment of geohazards (this report), wave and beach dynamics, and ecosystem characteristics.

8. Safety and Suitability

This report has been prepared in accordance with standard geotechnical hazard assessment practices, and at the expense of Heidi and David Kuhrt. Thomas R Elliot PhD P.Geo P.Ag has not acted for or as agent of the Islands Trust in the preparation of this report.

Thomas R Elliot PhD P.Geo P.Ag certifies that the land is safe for the use intended (Residential Single Family Dwelling and Driveway) if the land is used in accordance with the conditions specified in this report.

Thomas R Elliot PhD P.Geo P.Ag acknowledges that this report may be used by the Islands Trust as a precondition to the issuance of a permit and that this report and any conditions contained in this report may be included in a restrictive covenant and filed against the title to this subject property.

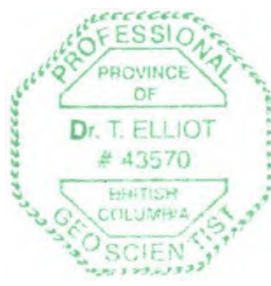
9. Summary

The land parcel with PID 009-555-706 situated on the southwest flank of a bedrock ridge forming a benching slope down to a coastal bluff is proposed to undergo permissible Development Activities within the Shoreline DPA of the IT.

Through assessment of these DPA requirements, Thomas R Elliot PhD P.Geo P.Ag as a QP capable of conducting the works, has determined a **High Risk of erosion geohazard** impacting the local environment. This determination is based on geophysical indicators on Site and regional frequency of historic landslide in the area.

The proposed development activities do not increase the Risk, however specific design of erosion mitigation measures will have to be completed prior to establishing a post-development Risk. There are sufficient pre-existing long term erosional processes on Site to warrant mitigation measures.

Qualified Professional of Record	THOMAS R. ELLIOT PhD P.Geo, P.Ag Name	 Sign

Thomas R Elliot PhD P.Geo. P.Ag.

Digital reproduction, original available upon request.
Date: November 6, 2023

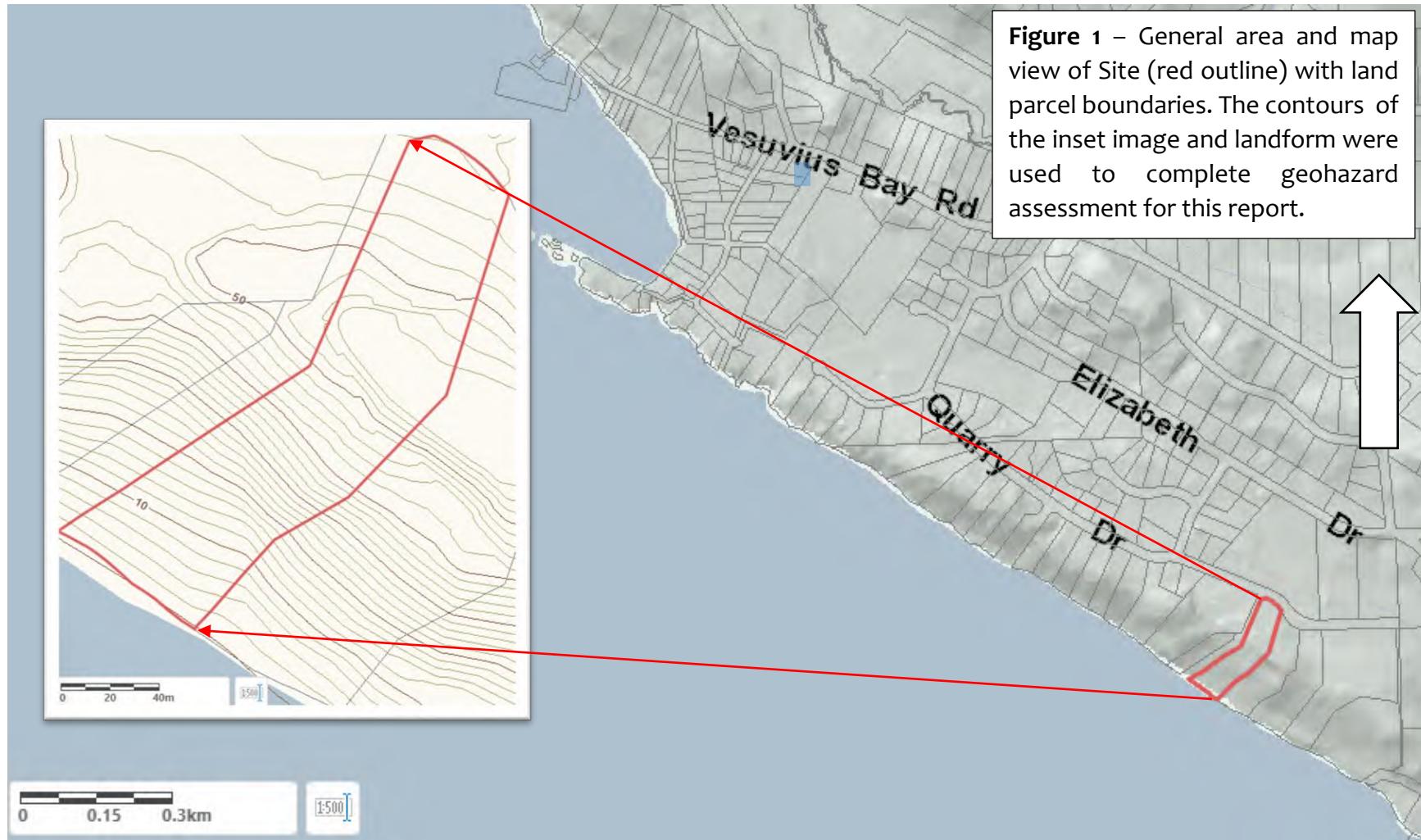
10. Closure and Limitations

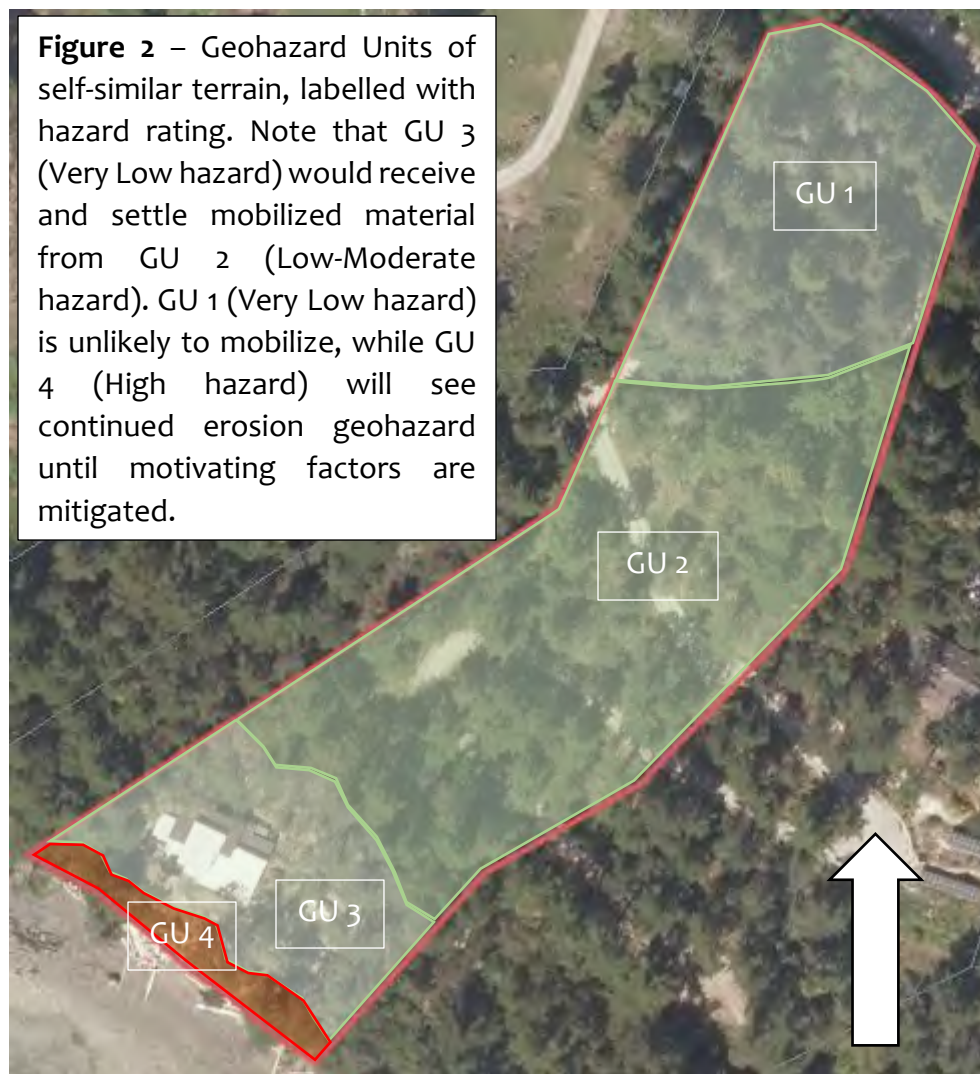
The QP signatory to this assessment and report assures accuracy of existing and field observation, and evaluation of technical geohazard according to best practices of the Engineers and Geoscientists of BC. The content of this report are applicable to the subject land parcel, and specifically the Site as defined in this report. Any extension of the evaluation to areas outside of the defined area assessed are not valid.

The report has been conducted according to guidelines and reporting standards of similarly qualified professionals, given similar time and budget. At time of writing, the report meets due diligence and investigatory reporting requirements to provide QP recommendations with declared competency in the subject areas. Therefore, the author of this report does not maintain liability insurance for actions taken based on the reporting, and only accepts error and omission liability up to the value of this report. The receipt, utilization and any planning, further studies or development actions undertaken by the recipient of this report are based on their acceptance of their own liability therein.

Appendix I

Maps and Figures





Appendix II

Geohazards and Risk

Geohazards

This assessment is partially based on local historic rates of landslide failure. The rating hazard of failures occurring in a given area under the classification system shown in Table II_a, below. By determining the likelihood of historic failures based on spatial density, the number of failures per unit area can be predicted. The likelihood of historic failures is determined through review of historic aerial imagery and general area observations while on the way to or from Site.

By establishing failure spatial density in the local area, in conjunction with Table II, the hazard rating can be estimated for areas undergoing development activities that impact terrain stability.

The hazard ratings were defined based on pre-existing practice by geoscientists and engineers for the natural resources sector, and adapted to best suit development activities governed by responsible municipal partners toward meeting those partner-organization risk tolerance policies.

Please note that, differing from resource sector terrain stability assessments, this evaluation of hazard includes failures smaller than 0.05 ha area (initiation, transport and deposit area). This is consequent to resource sector activities, and typically remote locations, being more tolerant of small-scale geohazard events. For this location, due to proximity to populated areas, and responsibility to meet municipal risk tolerance policies, the total area of a failure may be less than 0.05 ha in order to contribute to the hazard rating.

Table II_a: Definitions of hazard categories

Hazard Category	# of failures per geohazard unit size
VERY HIGH	>1 failure per 2 ha
HIGH	1 failure per 2 to 10 ha
MODERATE	1 failure per 10 to 50 ha
LOW-MODERATE	1 failure per 50 to 250 ha
LOW	1 failure per 250 to 1250 ha
VERY LOW	<1 failure per 1250 ha

Once the natural hazard of landslide for the area has been established, the probability of at least one failure occurring in a geohazard unit can be determined from Figure II_A.

Figure II_1 is based on the assumption that the probability of a specified number of failures occurring within a polygon is related to the size of the polygon by a cumulative normal distribution.

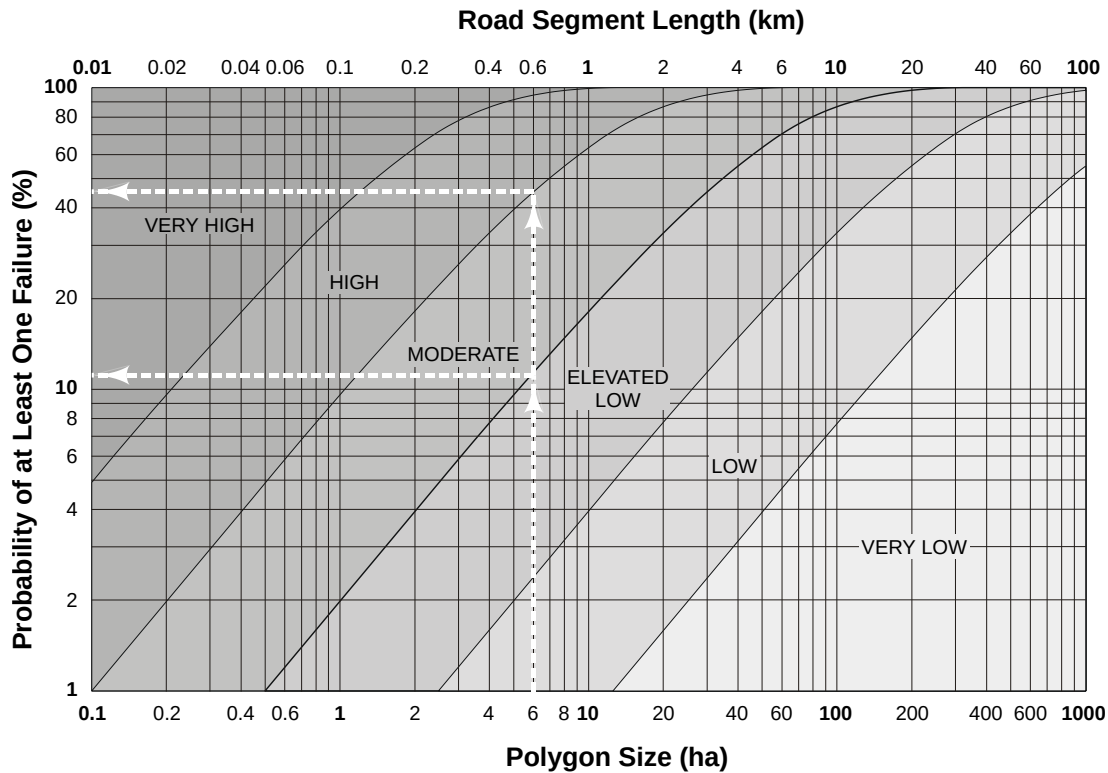


Figure II_1 – Probability of at least one failure based on a geohazard unit (GU) assessment area size or road length. This figure has been adopted from BC Forestry practices and is based on a single forestry harvest cycle, typically lasting 60 years within Coastal BC.

Figure II_1 has an example sketched with dashed white lines. The example indicates probability of failure for a **6 ha** geohazard unit area with a **moderate** hazard rating. The probability of at least one failure occurring within the assessed geohazard unit area over the period of one forestry harvest cycle is between ~12 – 45%.

Consequence

Simplistic Farböschung Evaluation

Whether or not a Site will be impacted by a geohazard is a component of determining consequence to potential landslide failures and/or debris flows. A simplistic assessment of transport and deposition zone locations can be accomplished through a 'Farböschung' evaluation. This is best exemplified through Figure II_B, which demonstrates how a sliding

mass (block on right hand side) has potential to transport some distance from point of initiation based on a simplistic assignment of Farböschung angle.

For this assessment, a Farböschung angle of 45% was used based on heuristic practice for these coastal environments and gravelly loam surficial material. By standing on Site at highest point of initiation, the QP was able to establish the approximate run-out distance to edge of the deposit zone.

A more Site specific example is provided in Figure II_C, which shows a benching bedrock terrain where a thin veneer of surface material is mobilized, and has limited transport and deposit distances based on the Farböschung angle.

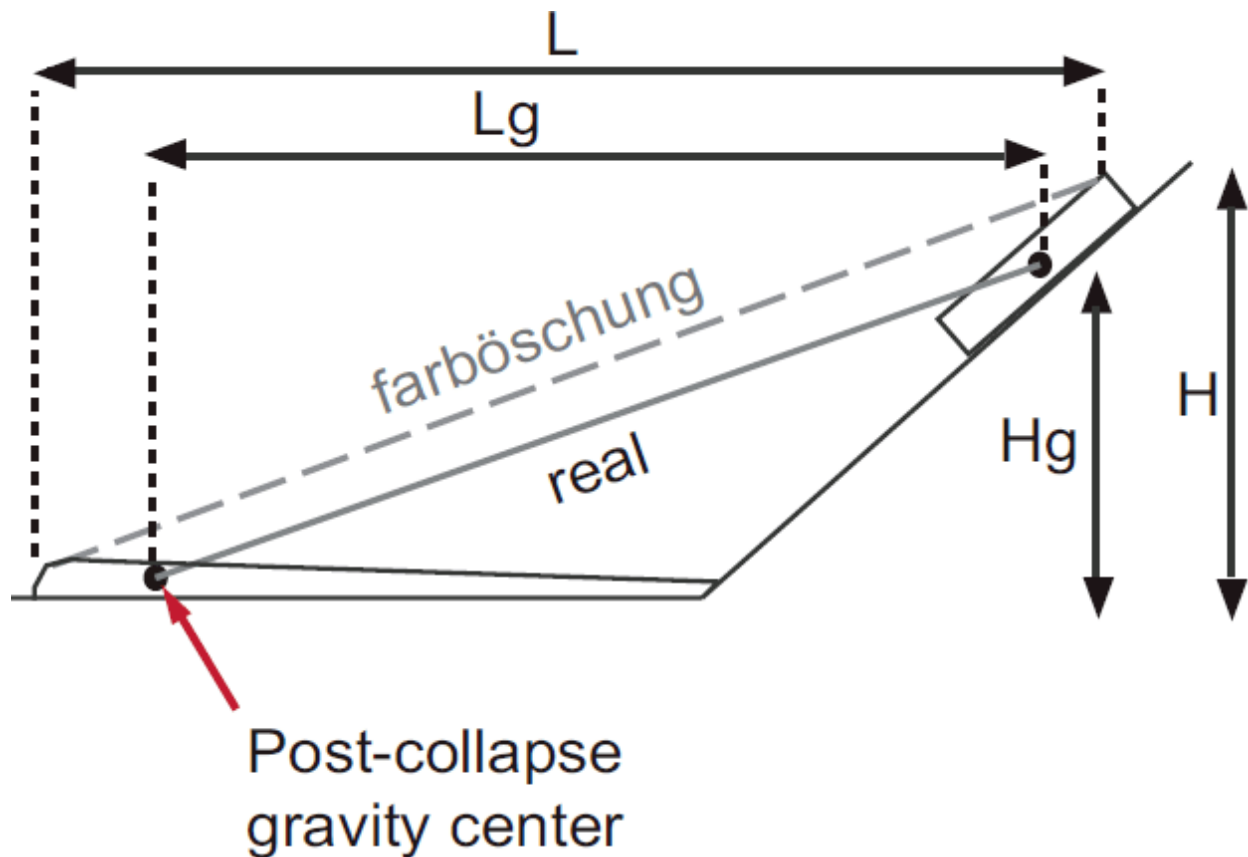


Figure II_B – Farböschung angle functionality for sliding masses on a slope. The specific mathematics of which are not supplied here for brevity.

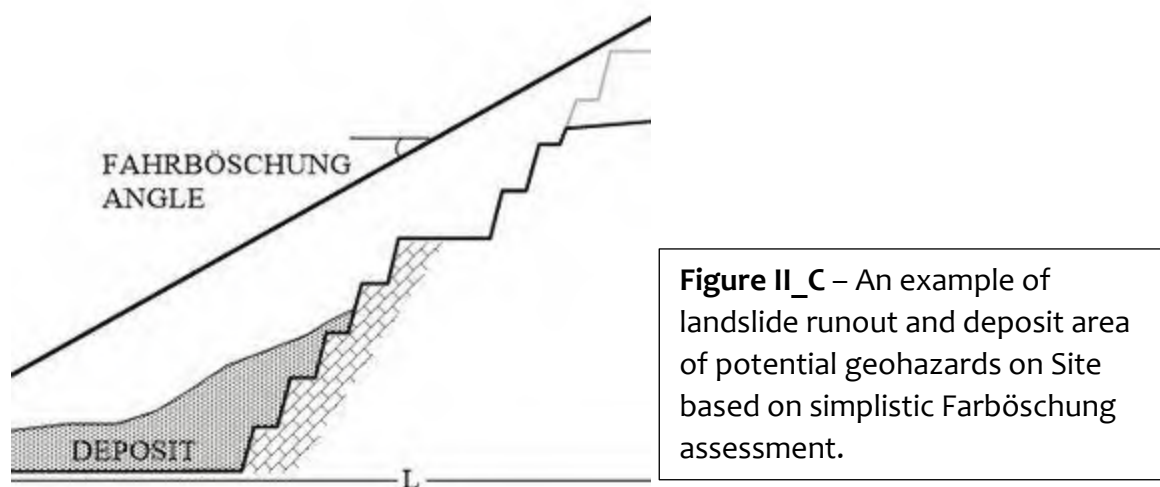


Table II_b: Consequence

Consequence	Criteria
HIGH	Landslide material would directly enter fish habitat (stream, lake, or marine waters); water intake for domestic consumption; jeopardize lives of the public; impact major public infrastructure; or other property owner. Landslide would enter non-fish stream within 500 m of fish habitat.
MODERATE	Landslide material enters non-fish stream > 500 m and < 3000 m from fish habitat, OR there is a slope < 20% for < 100 m below landslide to fish habitat; potable water intake; a public area; or other property owner.
LOW	Run-out slope < 20% for 100-200 m below landslide deposit area. At time of event, suspended sediment may reach fish habitat; potable water intake; public area, or other property owner
VERY LOW	Run-out slope < 20% for > 200 m below landslide. Landslide material is unlikely to reach stream or potable water intake at time of event. A landslide would not be a public safety concern; would not impact any infrastructure nor other property owner.

Post Development Activities Summary Table of Geohazards, Consequence and Risk on Site

Risk

Very Low	Low	GEOHAZARD				
Moderate	High	VERY LOW	LOW	LOW - MODERATE	MODERATE	HIGH
GEOMORPHIC CONSEQUENCE	VERY LOW					
	LOW	1	3	2		
	MODERATE					
	HIGH					4

Assessment of Marine Shoreline Characteristics

As pertaining to areas seaward of land parcels:

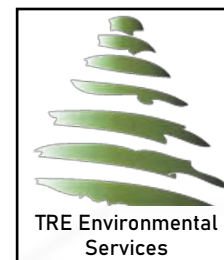
235 Quarry Drive PID 009-555-706
239 Quarry Drive PID 009-555-731
434 Baker Road PID 009-555-781
431 Baker Road PID 000-014-656

SALT SPRING ISLAND

Report for Coastal Erosion Mitigation

Developed for: Aurora Professional Group
c/o Bradley Fossen P.Eng
338 Lower Ganges Rd UNIT 202
Salt Spring Island, BC V8K 2V3

Developed by: Thomas R Elliot PhD P.Geo P.Ag
TRE Environmental Services
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1. Synopsis

This assessment of marine shoreline was conducted using field, analytic and existing data to determine wave and sediment dynamics associated with erosion management of the coastline, as well as transport control of mobile sediments. These determinations are used to inform size distribution for sediment suitable for beach nourishment methods of erosion mitigation and transport control.

There are ~670m of hard armouring, or ~28.5% of the 2,350m shoreline within the drift-cell. Within the study area, there are ~70m of riprap and concrete, creating a ~14% hard-armoured coastline within the Site. This amount is considered to be moderate, where further erosion mitigation hard armouring would be discouraged by regulatory authorities.

There were two zones with distinct sediment size characteristics spread across the Site, for which there were sediment/gravel mixtures identified as being suitable for beach nourishment.

Lastly, the suitability of erosion mitigation and sediment transport control in context of Site factors and dynamics was evaluated. This evaluation encourages both continued monitoring and beach nourishment as suitable activities to pursue as part of erosion mitigation and sediment transport control.

2. Introduction

Landowners of four parcels adjacent to Baker Beach on Salt Spring Island have observed increased occurrence of punctuated erosion (e.g. landslide and landslip/tree-topple) and progressive erosion (e.g. plucking, thermal-jacking, or overland flow sediment mobilization). These landowners requested an assessment of the ~40m x 600m Site (Figure 1 – Appendix A), including existing foreshore and backshore characteristics, which informs sediment and wave dynamics. The assessment of foreshore and backshore dynamics will generate a drift-cell model for the Site. The drift-cell model will be used to evaluate suitability of proposed erosion mitigation measures at the end of this report.

This report is applicable to the foreshore and backshore seaward of the following land parcels:

Common Address	Parcel Identification
235 Quarry Drive	PID 009-555-706
239 Quarry Drive	PID 009-555-731
434 Baker Road	PID 009-555-781
431 Baker Road	PID 000-014-656

This report was written using existing and field-based data that provides spatial layout of the Baker Beach foreshore and backshore, generalized coastal zone sediment budget, beach particle size assessment and a drift-cell model summary.

2.1. Author Qualifications

Thomas R Elliot PhD is a Qualified Professional (QP) Geoscientist [# 43570] and Professional Agrologist [# 3045] registered within the Province of British Columbia and in good standing with both professional associations. The QP has 16 years of geohazard, soil science, near surface groundwater and hydrology. In the last 9 years, Thomas R Elliot has primarily worked on Vancouver Island and the Lower Mainland of British Columbia in the practice areas of [Geoscience]: Hydrogeology, Geohazard mitigation assessments, Soils/Groundwater management; and [Agrology] Soil science, Agriculture, and Contaminant detection, mitigation and remediation.

3. Standards of Practice for Marine Shorelines Management

The marine shorelines of British Columbia are subject to overlapping jurisdictional claims from municipal, provincial and federal government agencies. Despite the regulatory oversight, there are few guidance documents produced from Canadian sources that demonstrate best management practices from an integrated perspective which includes geophysical, ecologic and social/land use.

Some governmental agencies, such as Islands Trust (IT), who have adopted customized or standard guidance documents from Washington State Department of Fish and Wildlife¹. Other non-governmental organizations have supported investigatory methods for detecting vulnerabilities and existing health status of shoreline environments².

This Assessment relies on existing guidance and approach methods that have been referenced by governmental agencies as being suitable for development planning and implementation practices within the BC coastal marine environment. Specifically, the determination and classification of marine shoreline and coastline dynamics, and consequentially which mitigation opportunities are suitable – is from the Marine Shore Design Guidelines³. Additionally, assessment and mitigation pathways identified have been considered in context of a Coastal Marine Strategy for British Columbia Policy Intentions

¹ Your Marine Waterfront (Canadian Edition): <https://islandstrust.bc.ca/document/your-marine-waterfront-guide-2023/> Accessed 11/2023.

² BC Parks Shoreline Sensitivity to Sea Level Rise Model: User Guide: https://a100.gov.bc.ca/pub/acat/documents/r42825/BCPark_SS_user_guide_1403632673820_3629261453.pdf

supported by the SeaChange Marine Conservation Society (<https://seachangesociety.com/resources/>). Accessed 11/2023.

³ Washington Department of Fish & Wildlife Marine Shore Design Guidelines: <https://wdfw.wa.gov/publications/01583>. Accessed: 09/2023

Paper issued in December 2022⁴. In this report, the six outcomes identified in the Intentions Paper informed the assessment and mitigation options considered.

4. Scope, Context & Motivation

The purpose of this assessment is characterization of shoreline that will inform suitable marine coastline erosion mitigation measures which can be pursued on Site.

The motivation for this evaluation is to use sediment analysis and a drift-cell model in conjunction with reporting on ecology and geohazards to guide planning of erosion mitigation measures. The planning will be provided in subsequent reporting.

Additionally, there exists IT DPA 3 – Shoreline requirements for non-exempt development activities within 10m landward and 300m seaward of the marine-shoreline natural boundary. Therefore, if erosion mitigation recommendations are to occur within this DPA 3 area, there is a requirement to conduct characterization of existing conditions alongside demonstrably supportable recommendations for erosion mitigation.

The motivation to produce this report is to provide IT record of existing shoreline conditions, in partial or completion of IT DPA – 3 Shoreline requirements.

5. Shoreline Terminology, Site Delineation and Erosion Mechanisms

The shoreline area, as per IT DPA 3 definition, consists of a 300m coastal zone from the coastline, above which it extends into 10m of the uplands.

The Site includes the area of Baker Beach, as bracketed by public access, in addition to self-similar shoreline at both extents for a total ~600m of coastline (Figure 1 – Appendix A).

To best align this document with existing map products of shoreline delineation by IT, such as [Saltspring Is. North Map 1 of 3: Distribution of Shoreline Types](#), Figure 3 was generated with identical classification and colour scheme.

Of the erosion mechanisms identified on Site from previous geohazard reports, the following are of note:

- Pore pressure/Groundwater Seepage from surficial soils, reducing cohesion and resulting in landward progression of the crest through continuous or punctuated mobilization of sediment.

⁴ A Coastal Marine Strategy for British Columbia. <https://engage.gov.bc.ca/app/uploads/sites/121/2022/12/Coastal-Marine-Strategy-Intentions-Paper.pdf>. Accessed 11/2023.

- Toe-erosion of bedrock, or undercutting of shoreline sediment, which decreases stability of all materials above, often resulting in narrow failures from crest to base of coastal bluff.
- Landslip/Tree-topple is occurring on Site wherein trees near, or overhanging, the coastal bluff mobilize consequent to soil creep, pore pressure or toe-erosion. These failures result in a larger volume of surficial sediment during failure than toe-erosion instability reaching the crest. Consequent to root reinforcement or friability of bedrock, landslip is likely to mobilize underlying shale and siltstone.
- Landslide is a moderate to large scale failure event which can mobilize bedrock and overlying surficial sediment. Coastal landslides are often consequent to a history of toe-erosion, bedrock fracture and an increase in pore pressure (i.e. saturated soils & rock-fractures during a storm event) which has destabilized the coastal bluff in that area.

6. Shoreline Characteristics and Dynamics

This section presents details on the existing composition and quantifiable characteristics of the assessed marine shoreline. The following is a summary table of global characteristics, acquired from previous geohazard reporting⁵, while details of each area are reviewed in subsequent relevant sections. Field assessment methods provided in Appendix A of this report.

TABLE 1. GENERAL SHORELINE CHARACTERISTICS FROM PREVIOUS REPORTING

Geology & Geomorphology	
Geology	Siltstone to mudstone in upland, sandstone within coastal zone, of the Nanaimo group – which is an elevation-banded sedimentary and metamorphic rock assemblage.
Surficial Sediment	Well to rapidly drained sandy loam to loam belonging to the Galiano soil association is present at the coastline.
Landslide/Landslip activity frequency	Concentrated within areas of accelerated erosion, with a Site wide occurrence of 1 per ~40m of coastline.
Shore & beach type and beach features	<u>Shore type</u>: Rocky coastline bluff with variable elevation bedrock resulting in low rock/boulders, boulder/cobble and sea cliff natural coastline. There are structurally altered (i.e. hard armour) coastline up-drift, within and downdrift of the assessment area. <u>Beach type</u>: The presence of bedrock within the coastal bluff and foreshore results in the Site being typified as a high tide reflective beach face fronted by intertidal rock flats (i.e. bedrock low-tide terrace).

⁵ Geohazard assessment for each land parcel, completed by TRE Environmental Services under separate cover. For reference and details, please refer to those reports.

	<i>Features:</i> There exist two bedrock outcropping, nearly 40 – 50m from coastline at seaward extent of the low-tide terrace, which are in line with two ridges descending from uplands and consistent with the benching morphology of this shoreline geology.
Ground and Surface Water	
Watershed conditions	Single benching slope above the assessment area results in small-scale flow accumulations. There are no identified streams, albeit there was some evidence of overland flow associated with high volume precipitation events.
Groundwater	Limited infiltration to bedrock results in perched water table within the veneer to mantle of surficial materials. Perched water table causes increase pore water pressure at soil interface with air, decreasing soil stability.

6.1. Hard Armouring

At respective distances of 115m and 490m northwest of Site, there are ~200m of groyne and ~300m of coastline-riprap hard armouring installations. Of these anthropogenic foreshore modifications, the groynes may be encouraging some sediment accumulation along the beach face by diffracting wave energy, albeit that poor installation has resulted in low sediment retention; while the riprap has reduced kinetic wave action on the shale and siltstone coastline, reducing supply from upland to the local coastal zone sediment system.

Down-drift from Site is ~80m of coastline-riprap on a sediment bar at the mouth of Booth Inlet. This hard-armouring restricts both progressive and punctuated sediment mobilization from the area by constricting flow to a narrowed channel, thus reducing fine-sediment supply to local shoreline.

There are three additional sections of hard armouring within Site: coastline-riprap placed at the northwest (10m) and southeast (30m) CRD access points, as well as along the coastline of 241 Quarry Rd (30m) – creating a ~14% hard-armoured coastline within the Site.

In total, the ~2,350m long drift-cell (see Section 6) – extending from Vesuvius Bay to the mouth of Booth Inlet – has ~670m of hard armouring, or ~28.5% of the local area shoreline.

6.2. Backshore

Indicators of a backshore are the presence of accumulated fine sediment and clasts, large littoral debris, sparse vegetation, and an area that is dry under normal conditions but exposed to wave action during storm events coinciding with high-tide. With this criterion, the backshore on Site was determined to have limited extent, often less than 1m in width and non-existent in some areas where there is continuous bedrock outcrop to the coastal bluff.

The backshore does not have sufficient width to create dunes or other geomorphic sediment accumulations. However, there exists minor clastic terrace deposits above the wrack line in

sections of backshore that were contiguous with the beach face. There is sparse littoral and flotsam debris accumulated within the backshore, which is in contrast with the common to frequent presence of accumulated debris along up-drift sections of shoreline which have been historically armoured by rock groynes.

Sediment supply from uplands is principally delivered to the backshore as progressive erosion of coastline bedrock bluff. Sediment deposits from punctuated toe-erosion, landslip and landslide failures were also present in the backshore – some of which hosted perennial salt-tolerant vegetation, suggesting a multi-year existence. The persistence of these deposits through prior year storm-season (i.e. high wave energy and storm events) is a component of continuous sediment supply to Baker Beach.

6.3. Foreshore

The bedrock transition from shorise to a $\sim 3^\circ$ gradient low-tide terrace is notably marked by the presence of two bedrock rises which present as ‘barrier islands’ for a portion of Baker Beach (see Figure 1). Under high tide conditions, these outcrops are fully submerged. The low-tide terrace is a wave-cut rock platform in siltstone and shale bedrock. The wave-cut platform has been created over the most recent eustatic sea level, in existence since the end of the last ice age $\sim 8,000$ bp.

Within the low-tide terrace there is a mixture of sediment and bedrock coverage, as shown in Figures 3 & 4 – Appendix A. The accumulation of sediment is facilitated by undulating bedrock surface, with depressions readily infilled. The infill presented cobbles and gravel surface armouring, with fine sediments captured and retained underneath. There is a typical progressive reduction in the amount of mobile gravel toward the seaward extent of low-tide terrace.

The 10 – 25m width of $\sim 5^\circ$ gradient continuous beach face across the Site is demarcated by a grading of accumulated sediment, from sparse cobbles and coarse gravel atop sand at the low-tide terrace interface, to fine gravel and sand at the backshore interface. Generally, there is a surface layer of mobile gravel which accumulates to greater depths toward the backshore interface. There is a wrack layer at the upper extent of the beach face, with accumulation of littoral debris by normal wave and tide-action.

The beach sediment is a broad mixture of boulder erratics emerging from sedimentary bedrock or upland surficial material through weathering, to gravel, coarse sand and limited fines. Further information on beach sediment is found in the Section 5.5 – Beach sediment analysis.

6.4. Wave dynamics

Wind-driven wave generation is largest in the west to northwest direction, creating acute incidence of approach. However, windrose diagrams (Figure 4) demonstrate a predominantly southwest to southeast winds that reach moderate velocity (≥ 6.0 m/s). These predominant

winds would form waves over a maximum 4.6km fetch. There are rarely occurring strong northerly to northwesterly winds recorded for the autumn period which would incur the maximum possible 13.5km fetch for the Site. The reference marine shoreline development guidelines recommend differentiating between Low, Moderate and High energy waves when fetch exceeds 1.6km & 8.0km (respectively) – therefore wind-driven wave energy on Site is determined to be Moderate.

Vessel-wake wave energy is predominantly from the most transited paths through the Sansum Narrows, and the regular Vesuvius-Crofton ferry. While there is large cargo vessel traffic to the nearby Crofton Mill, the lower frequency and low-speed manoeuvring does not contribute significantly to wave-energy delivered to Baker Beach. Due to the predominant angle of incidence, the vessel-wake do contribute to alongshore drift, moving fine sediment within the Drift cell.

Using equation 3 from Appendix B, typical wave velocity at high-tide across the rising low-tide terrace is determined to be 1.98m/s (7.12 km/h) resulting in a surging breaker classification. Surging breaker waves involve a progressive transfer of potential to kinetic energy across the coastal zone of Site.

Under storm event conditions where wind energy increases wave speed, wave type shifts to plunging breakers at steep shorerise, with the resulting whitewater traveling across the low-tide terrace and beach face as turbulent motion.

Based on sediment deposition patterns and distance from deep water, tidal currents do not have an apparent influence on wave dynamics at Site. Further, Booth Inlet – immediately east of the Site – is an ebb-tide delta with observable fine sediment accumulation. There is little evidence of increased fine sediment accumulation from the ebb-tide delta within the Site, demonstrated through beach sediment analysis, reinforcing that the drift-cell transports alongshore from northwest to southeast.

6.5. Beach sediment analysis and Beach Nourishment Sizing

Sediment analysis of the coastal zone samples were evaluated for size fraction (See Appendix C). Sediment analysis provides distribution across distinct size ranges for samples from the following delineated coastal zones: Coastline, Backshore terrace, Backshore face/wrack, Foreshore beach, and Nearshore crest.

Within the study area, the most consistent sediment size-composition (Graph C1) was found across the well sorted foreshore beach face (Figure 2). After which, the backshore face and backshore terrace demonstrate good size consistency (Graph C2, C3) across the Site. There is a clustered distribution of sediment composition for the nearshore samples (Graph C4), which demonstrate a zonation along the drift cell.

To better understand the zonation, sediment size was charted for each property (Graph C5 – C9) to determine if there are alongshore effects to be accounted for in beach nourishment

sizing. This identified grouping of sediment sizes between property 1 and 5, as well as 3 and 6; suggesting similar wave action and resulting sediment transport processes in these areas.

Generalized Sediment Budget

The Site is of limited spatial area, and therefore can only receive sediment from a limited section of the coastline and intertidal terrace erosion. While there is some alongshore sediment transport within the drift-cell, the mobile size fraction – being fine sand to silts – was most prevalent in the nearshore adjacent land parcels further along in the drift-cell. This distribution indicates a fine sediment deposition zone in the eastern portion of the Site, which agrees well with geomorphic factors – such as the nearby confluence of Booth Inlet.

Coarse sand to stones are most readily supplied to Site by erosion of surficial materials in the coastline and uplands, accomplished through overland transport or failure of the coastal bluff. These sediment sources are limited in volume prior to when their transport to beach would encroach on built structure geohazard setbacks. As such, we can state that there will be a decrease in sediment supply from uplands, trending to zero in the long term, should safe use of the built structures be prioritized.

Sparse gravel coverage along the low tide terrace and beach face demonstrates a low supply and low loss environment. The deposits present were found to be armoured at surface with large clasts, finding sand and silt content deeper within the sediment profile. This suggests there is reworking of sediment within the drift-cell, but there does not appear to be sufficient force to transport the larger size range of sediment present out of the drift-cell.

In context, the drift-cell generalized sediment budget is low input/output, with primary loss – being fine sands to silts – through evacuation to off-shore. There is reworking of gravel present, although observed armouring and stratification of beach sediment profile indicates a heavily conserved higher clastic fragment size range.

From this generalized sediment budget, beach nourishment planning can be better focused on the larger sediment size ranges to ensure conservation of materials while including coarse sand to help stratification and armouring processes occurring on the beach face.

Beach Nourishment Sizing

Determining sediment size suitable for beach nourishment within the Site becomes more complex in context of a drift cell, where materials deposited to a portion of the Coastal Zone (Figure 2.) will disperse to adjacent zones and alongshore within the drift cell. This is a factor in determining both target-zone, and size range for beach nourishment. One suitable approach is to determine sediment size composition for beach nourishment through averaging of existing sediment within zones that will ultimately receive the material, weighted for the target deposition area.

Based on Client motivation, the target deposition area within Site would be the backshore face, where it is anticipated that there will be transport to backshore terrace and foreshore beach face. Additionally, there is no intention of placing easily transportable material – meaning that there will be no purposeful addition of silt to the beach nourishment, and coarse sand will be the smallest size fraction identified for placement.

Due to the previously identified zonation, there are two size ranges suitable for beach nourishment at the backshore face – as follows:

Zone 1: Property 1 & 5

<u>Percent Composition</u>	<u>Size Range</u>	<u>Common Name</u>
60%	4.8mm+	(30%) 20mm washed drain rock, (40%) 40mm washed crushed rock, (25%) 60mm washed crushed rock, (5%) 10 - 20cm round cobbles
20%	1.8mm to 4.7mm	10mm washed rounded gravel
20%	1.7mm-	Fine to coarse sand

Zone 2: Property 3 & 6

<u>Percent Composition</u>	<u>Size Range</u>	<u>Common Name</u>
45%	4.8mm+	(30%) 20mm washed drain rock, (40%) 40mm washed crushed rock, (25%) 60mm washed crushed rock, (5%) 10 - 20cm round cobbles
20%	1.8mm to 4.7mm	10mm washed rounded gravel
35%	1.7mm-	Fine to coarse sand

7. Drift Cell Model - Interpretation and Summary of Marine Shoreline Dynamics

The drift-cell of Baker Beach extends 2,350m from the rocky outcrops at south Vesuvius Bay to the mouth of Booth Inlet. This drift-cell is designated based on a common alongshore drift-current that transport sediments and has been generated by consistent waves approaching at oblique angles to the shoreline.

Baker Beach is currently supply limited, resulting in discontinuous sections of beach face, with long-term coastline retreat driven by wave, water and weathering erosion mechanisms. The beach features a bedrock intertidal terrace, over which a moderate alongshore drift-cell current provides low-volume sediment transport.

Consequently, the primary source of sediment for Baker Beach are sections of the adjacent upland coastal bluff, which contribute silt, sand, gravel and limited larger clastics up to boulders.

The delivery of sediment is through progressive erosion mechanisms and punctuated erosion mechanisms. Bedrock erosion produces angular to sub-angular coarse to fine gravel which is highly susceptible to further breakdown due to the fissility of shale – the predominant bedrock type. A variable mantle of ~0.5 – 3m of surficial material contributes sandy to silty loams, with clastic fragment (e.g. gravel, cobbles, stones) content up to 20% by volume. There are sparse stones to boulders on the beach which have weathered out of bedrock during formation of the low-tide terrace, or through erosion of the surficial uplands sediment mantle.

Sediment discharge from the drift-cell includes evacuation of mobilized sediment to off-shore depths, and limited wind-driven loss of fine sediment fraction from the backshore and uplands.

Alongshore sediment movement is facilitated by the low-tide terrace having a gentle slope and predominantly bedrock surface. Outside of the submerged low-tide terrace, alongshore sediment movement is very limited.

8. Suitability of Erosion Mitigation and Sediment Transport Management Recommendations

Previous reporting on geohazards⁵ identified erosion mechanisms and developed recommendations for mitigation. This report has assessed shoreline and sediment processes, culminating in a drift-cell model which differentiates between prevalent kinetic forces (i.e. wave, wind, current & weathering) and results in a generalized sediment budget for Baker Beach.

In this section, the recommended erosion mitigation options are evaluated for suitability in context of existing conditions and drift-cell model. Suitability is a high, moderate and low ranking based on evidence gathered through this and preceding reporting.

The following table is evaluation of activity suitability for mitigation of erosion and management of sediment transport in the Site foreshore.

TABLE 2. SUITABILITY OF EROSION MITIGATION AND SEDIMENT TRANSPORT RECOMMENDATIONS MADE UNDER PREVIOUS GEOHAZARD REPORTING.

Mitigation or Management Activity	Suitability			
	Foreshore	Backshore	Wave Dynamics	Sediment Supply
Monitoring rate of erosion	High Monitoring captures multi-seasonal natural cycles.	High Monitoring captures multi-seasonal natural cycles.	High Direct capture of data.	High Capture seasonal fluctuation in sediment transport.
Bioengineering and selective planting	Low Very challenging establishment conditions.	Moderate Shelter and stabilization of sloughed surficial material and bedrock. Challenging establishment conditions.	Moderate Bioengineered and root reinforcement of sedimentary coastline. Overhanging vegetation would shelter bedrock from weathering.	Low Mitigation activity would reduce primary sediment supply to beach.
Wave deflection	Moderate Reduces incident wave energy reaching backshore. Close placement to be uniformly effective.	Low Would constitute hard armouring in coverage required to be effective.	Moderate Moderate energy wave conditions and presence of discontinuous backshore de-prioritizes this option.	Moderate Reduces incident wave energy reaching backshore. Reduces amount of sediment supplied to beach.
Beach Nourishment	High Post-placement in the backshore, natural transport of sediment would supply the foreshore.	High Placement in the backshore would reduce wave energy reaching coastline.	Moderate Moderate wave energy would evacuate some of placed sediment.	Moderate Subsidize existing natural supply, reduces natural sediment supply. Would need re-supply in future.

The interaction with Site ecology, efficacy and ease of implementation and maintenance of these recommended mitigation options should be carefully considered in context of Marine Shoreline Design Guidelines.

9. Summary

This assessment of Baker Beach and surrounding area marine shoreline has characterized shoreline, wave dynamics, erosion and sediment supply of the area which constitutes a drift-

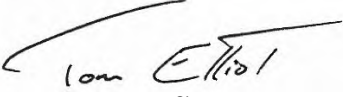
cell. Within Site, detailed foreshore and backshore characteristics were established from field and existing data.

Analysis of beach sediments has identified a zonated drift-cell with deposition of fine sediments in the eastern portion of the Site. The drift-cell generalized sediment budget is low input/output, with primary loss – being fine sands to silts – through evacuation to off-shore. There were two distinct sediment-size distributions identified that would be suitable for beach nourishment activities.

A drift-cell model was developed for the Site, which establishes sediment supply and transport mechanisms present. Using the drift-cell model, a suitability evaluation of erosion mitigation and transport management activities was undertaken for the Site with explanatory rationale demonstrating whether particular recommendations would be viable in context.

Despite moderate energy wave conditions on Site, a limited sediment supply exists due to the low amount of global sediment movement brought about by tidal currents and lack of up-drift sediment sources.

A comparison of activity suitability from this assessment with a similar suitability evaluation based on geohazards and ecology would be instrumental when applying the reference Marine Shoreline Development Guidelines.

Qualified Professional of Record	THOMAS R. ELLIOT PhD P.Geo, P.Ag Name	 Sign

Thomas R Elliot PhD P.Geo. P.Ag.

Date: December 18, 2023
Digital reproduction, original available upon request.

Closure and Limitations

The QP signatory to this assessment and report assures accuracy of existing and field observation, and evaluation of technical geohazard according to best practices of the Engineers and Geoscientists of BC. The content of this report are applicable to the subject land parcels, and specifically the Site as defined in this report. Any extension of the evaluation to areas outside of the defined area assessed are not valid.

The report has been conducted according to guidelines and reporting standards of similarly qualified professionals, given similar time and budget. At time of writing, the report meets due diligence and investigatory reporting requirements to provide QP recommendations with declared competency in the subject areas. Therefore, the author of this report does not maintain liability insurance for actions taken based on the reporting, and only accepts error and omission liability up to the value of this report. The receipt, utilization and any planning, further studies or development actions undertaken by the recipient of this report are based on their acceptance of their own liability therein.

Appendix A

Maps and Figures

Figure 1. Assessment area



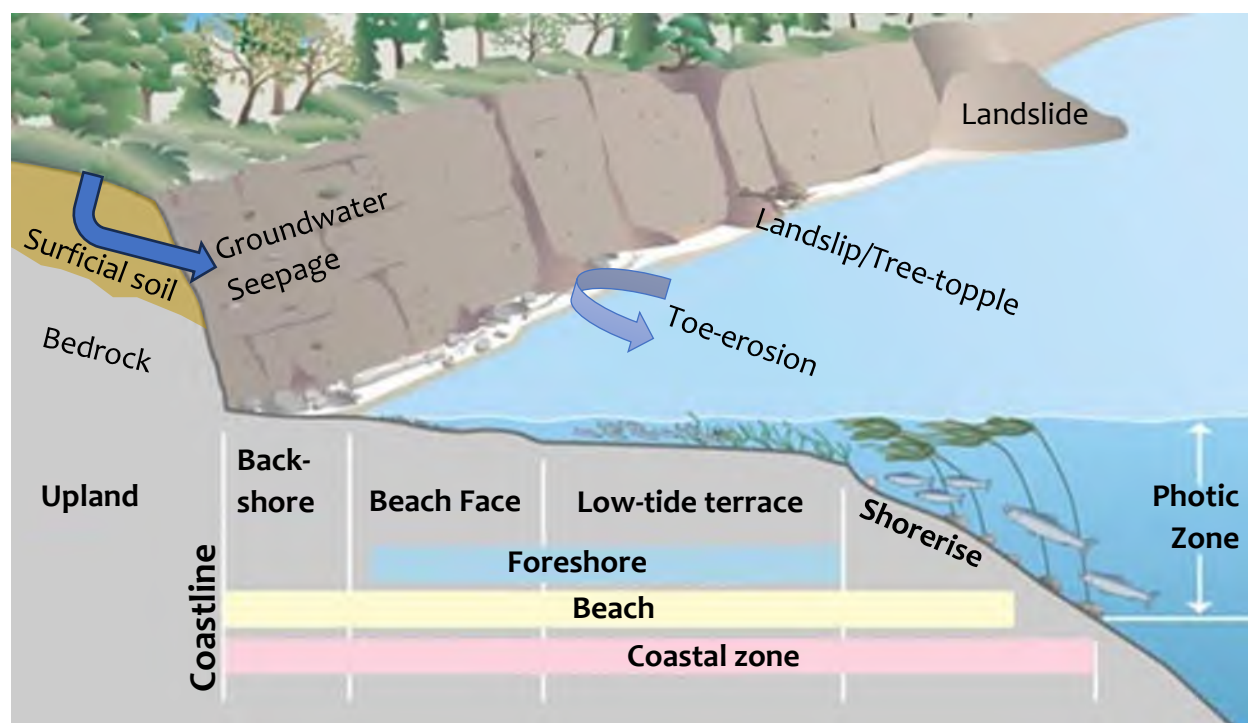
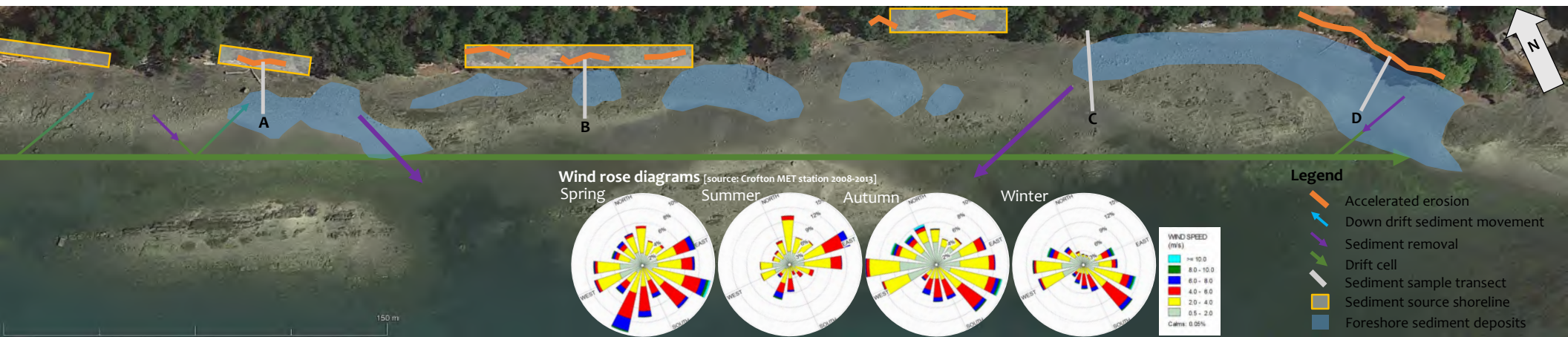


FIGURE 2. CONTEXTUAL DELINEATION OF THE SITE WITH RELEVANT TERMINOLOGY TO ASSIST WITH READING OF THIS REPORT. THE COMPONENTS OF THE COASTAL ZONE AND UPLANDS ARE INDICATED ALONG WITH ACTIVE EROSION MECHANISMS. ADAPTED FROM: [KING COUNTY NEARSHORE ENVIRONMENTS](#), CENTRAL PUGET SOUND, WASHINGTON STATE.

Figure 3. Shoreline types, sediment transects and bedrock outcroppings



Figure 4. Sediment dynamics, drift-cell current, and windrose diagrams



Appendix B

Methods and Rationale

Field and Analytic Methods

Field Methods

Two field days were used to characterize the Site.

Day One: Characterization of geology, geomorphology, wave dynamics, sediment dynamics, and documentation of soil and bedrock erosion/evidence of groundwater.

Day Two: foreshore delineation and beach sediment sampling along Transects A – D, as shown in Figure 3 & 4.

Beach sediment sampling

Sediment samples were collected using appropriate tools, ensuring they represent the area of interest accurately.

A 250mL silicon container was used to collect uniform volume of trowel-excavated (to a depth of 10cm where existent) grab samples from beach sediments at specific locations, as follows: backshore, beach face, low-tide terrace, and shorerise.

The distance from coastline to each sample location was measured alongside multiple GPS enabled photographs which are used to document the precise location.

Each sample was codified, and placed in a sample bag.

The samples were retained in a cool environment until analytic testing (see below).

Analytic Methods

The process of drying and fractioning sediment typically involves the following standard methods:

Drying: The collected sediment samples are spread out in thin layers and set to air dry at a low temperature (usually around 105°C). This process removes moisture from the samples without significantly altering the composition.

Sieving: Dried sediment is sieved through various mesh sizes to fractionate the particles based on their size. This can range from very fine sieves for clay particles to coarser sieves for sand and gravel fractions.

Particle Size Analysis: After sieving, the fractions are weighed and analyzed to determine the percentage of different particle sizes in each fraction. This analysis may involve techniques

such as sedimentation, laser diffraction, or microscopic examination to precisely determine particle size distribution.

Organic Matter and Mineral Content Analysis: Sediment fractions were not evaluated for organic content. Mineral composition was determined by hand-lens heuristic assessment to general rock type.

Data Interpretation: The results obtained from these analyses are used to characterize the sediment, understand its properties, and make inferences about its origin, quality, and potential uses or impacts in various contexts.

Rationale

Wave Dynamics

Wave generation proximal to Site is by two mechanisms: wind and vessel-wake. Wind-generated waves are formed off-shore, above deeper water, oriented in the predominant wind direction of the area, which is shown for Site in Figure 4 seasonal windrose diagrams⁶.

Vessel-wake waves are generated by marine traffic, forming short-period, steep sided wave-trains with moderate height that move quickly across open waters. Larger vessels initiate wave-trains that compound to amplify height, which can exceed wind-generated waves in areas with short-fetch.

Waves generated by wind above deep water are typically short-period, with steep sides, with relatively tall height that move slower during wind-driven generation. Transition to swell waves occurs as the proto-waves concatenate in the orientation of predominant wind as modified by any coastal-reflection. Swell waves are longer, faster and uniformly spaced as they approach coastal environments, whereupon contact with the rising bedrock causes them to shoal and break. The contact with bedrock in shallow waters also starts to re-orient the incoming swell waves to be more perpendicular to the coastline due to refractive waves.

The potential energy contained within swell waves are released as kinetic energy through this shoal and break mechanism. Typically, the wave height (H, trough to crest), period (T, time for crest to crest to pass), length (L), and velocity (C) are related to each other through the following equations:

⁶ It should be noted that the weather-station which acquired wind data for the windrose diagrams shown in Figure 4 is situated at the coastline of Crofton, on the west side of Sansum Narrows – opposite to Site at a distance of 3.8km, and as such the weather-station location will be subject to a wind regime modified by local topography that over-represents winds coming from off-shore – although general trends in wind direction would be consistent for both the meteorological station and Baker Beach.

Eq. 1	$L = 1.56 T$	wave length
Eq. 2	$C = 1.56 T^2$	off-shore wave velocity
Eq. 3	$C = \text{sq.rt.}(g*d)$	near-shore wave velocity, where g is gravitational constant, d is depth of water

wherefrom velocity can be used as general proxy for mechanical energy conveyed by waves.

Transferral of wave potential energy to kinetic energy at the foreshore and coastline is, in part, dependent on the angle of incidence (α), as the measurement of wave alignment to perpendicular from coastline. When waves enter the break and swash zone at oblique angles, the momentum gradient in the alongshore direction produces an alongshore current typically known as a drift current. This current advects sediment mobilized by a combination of wave motion and turbulent motion in the alongshore direction. The alongshore current forms the fundamental component of a Drift Cell, which is a representation of wave, current, tidal and transport processes – ultimately determining distribution of sediment within the Site.

Tides influence waves and kinetic energy delivered to coastlines by altering the shoal and break mechanism through adjustment of the water depth in the foreshore (i.e. high vs. low tide). Exceptionally high tides, typically corresponding to full or new moons, are contributory to backshore composition and configuration due to this increased depth and concurrent wave activity which can reach the backshore.

Tidal currents are critical to supply of fine sediment for drift cells, and within regional proximity to Site there are Department of Fisheries and Oceans current predictions⁷ which indicate a low to moderate tidal effect throughout the Gulf Islands on the east coast of Vancouver Island. Due to Site being off-set from a main tidal channel, the influence on sediment budget is anticipated to have a lesser effect than a similar site more exposed to tidal current.

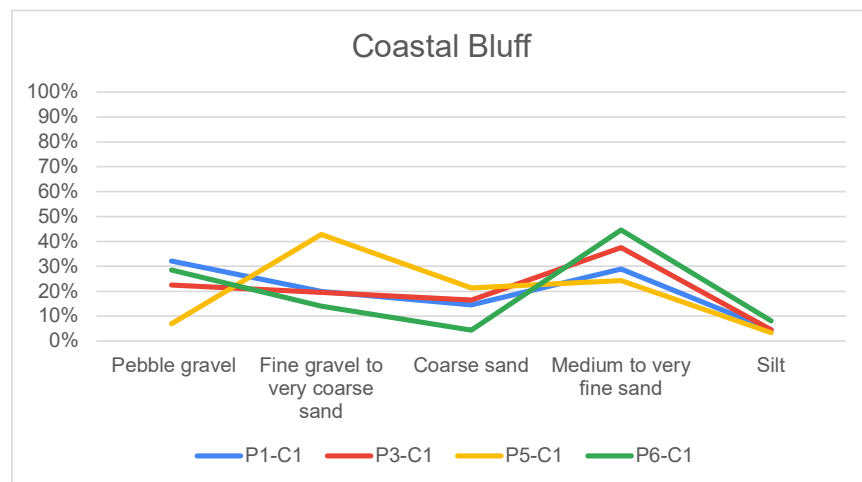
The angle of waves incidental to Site is such that a considerable amount of wave-energy is reflected, or disrupted, from Baker Beach during high tide – resulting in a reduction to incoming moderate wave energy and therefore less kinetic erosion on bedrock and sediment coastline, as well as lower energy evacuation of water from the shoreline. During low-tide conditions, the shoreline bedrock terrace is above sea level, restricting the amount of kinetic energy transferred to the bedrock and sediment coastline.

⁷ Canada Department of Fisheries and Oceans. Current Predictions by Station: <https://tides.gc.ca/en/current-predictions-station> utilizing Gabriola Passage [43km distant], Porlier Pass [17km distant] as indicators. Accessed October 2023.

Appendix C

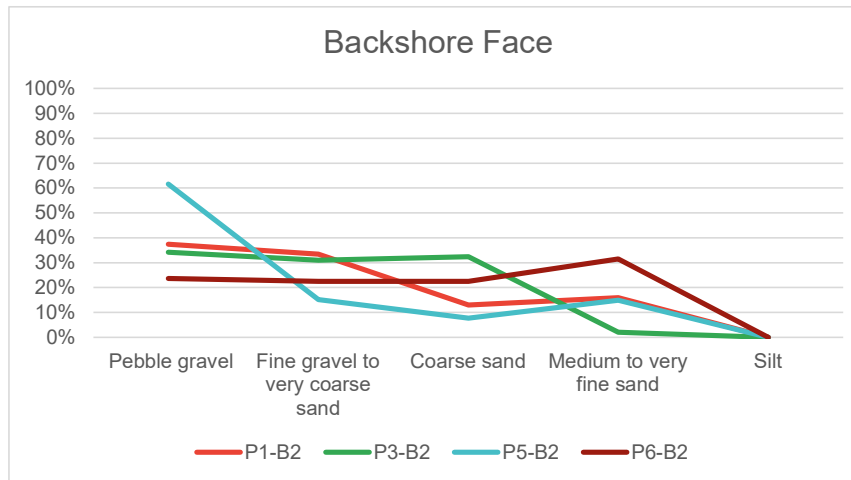
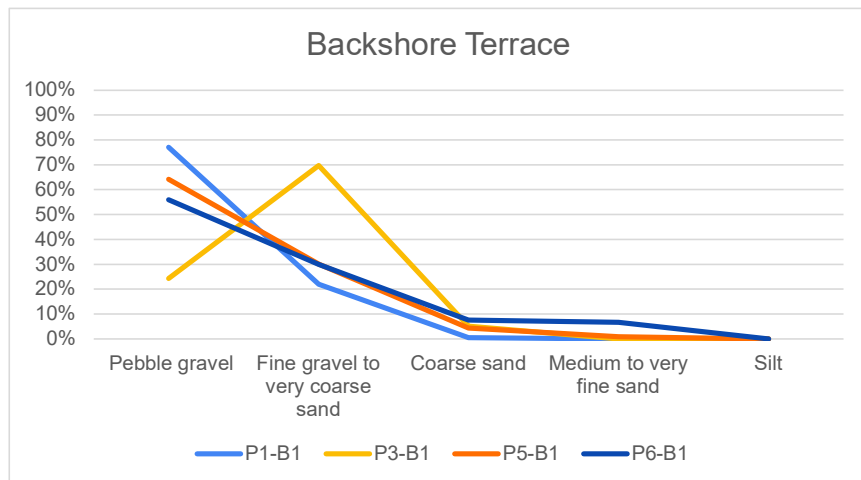
Sediment Analysis

Date	Sector	m	Wet Weigh	Dry Weigh	XL(g)	Pebble gr L (g)	Fine grave	M(g)	Coarse sa	S(g)	Medium tc	XS(g)	Silt	Notes
	P1-C1	n/a	221	221	71	32%	44	20%	32	14%	64	29%	10	5%
	P3-C1	n/a	204	200	45	23%	39	20%	33	17%	75	38%	9	5%
	P5-C1	n/a	280	271	19	7%	116	43%	58	21%	66	24%	9	3%
	P6-C1	n/a	193	186	53	28%	26	14%	8	4%	83	45%	15	8%

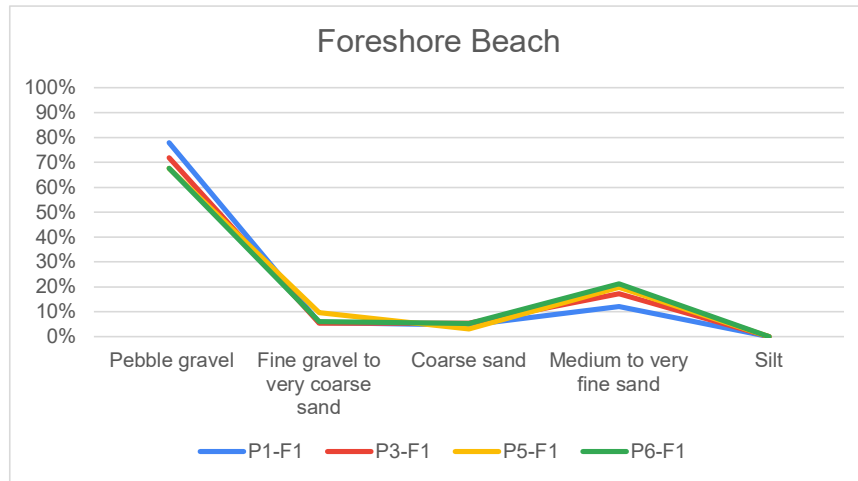


	Size Range (mm)	Wentworth Classification
XL	4.7498	Pebble Gravel
L	4.7497	1.8288 Granule Gravel to Very Coarse Sand
M	1.8287	0.762 Coarse Sand
S	0.7619	0.0737 Medium sand to very fine sand
XS	0.0736	Silt

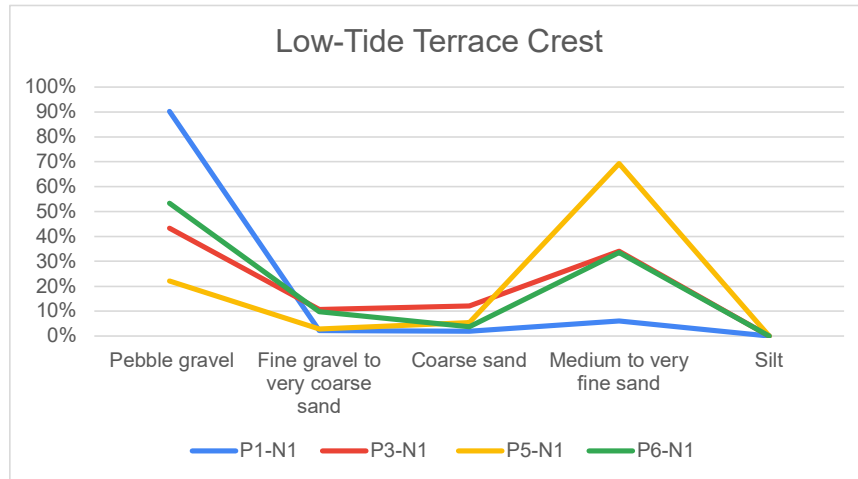
Date	Sector	m	Wet Weight	Dry Weight	XL(g)	Pebble gr L (g)	Fine gravel M(g)	Coarse sand S(g)	Medium to XS(g)	Silt	Notes			
	P1-B1	0.65	322	322	248	77%	71	22%	2	1%	0	0%	0	0%
	P1-B2	2.9	352	337	126	37%	113	34%	44	13%	54	16%	0	0%
	P3-B1	2.26	367	367	89	24%	256	70%	19	5%	0	0%	0	0%
	P3-B2	5.09	346	333	114	34%	103	31%	108	32%	7	2%	0	0%
	P5-B1	1.71	316	316	203	64%	95	30%	14	4%	3	1%	0	0%
	P5-B2	4.54	375	375	231	62%	57	15%	29	8%	56	15%	0	0%
	P6-B1	1.71	355	343	192	56%	103	30%	26	8%	23	7%	0	0%
	P6-B2	4.66	332	317	75	24%	71	22%	71	22%	100	32%	0	0%



Date	Sector	m	Wet Weight	Dry Weight	XL(g)	Pebble gravel (g)	Fine gravel	M(g)	Coarse sand	S(g)	Medium to coarse	XS(g)	Silt	Notes
	P1-F1	9.63	424	404	315	78%	23	6%	19	5%	49	12%	0	0%
	P3-F1	8.64	462	442	318	72%	24	5%	24	5%	76	17%	0	0%
	P5-F1	10.95	408	390	264	68%	38	10%	12	3%	77	20%	0	0%
	P6-F1	10.88	482	457	309	68%	28	6%	24	5%	97	21%	0	0%



Date	Sector	m	Wet Weight	Dry Weight	XL(g)	Pebble gravel (g)	Fine gravel	M(g)	Coarse sand	S(g)	Medium to coarse	XS(g)	Silt	Notes
	P1-N1	15.7	569	556	502	90%	12	2%	11	2%	33	6%	0	0%
	P3-N1	17.98	465	422	183	43%	45	11%	51	12%	144	34%	0	0%
	P5-N1	15.18	353	284	63	22%	8	3%	15	5%	197	69%	0	0%
	P6-N1	18.87	466	439	234	53%	43	10%	16	4%	147	33%	0	0%



Deposit Area Weighting Scheme:		
	Weight	Areas impacted by deposit
	10	Backshore Terrace
	60	Backshore Face
	30	Foreshore Beach Face

Aggregate Mix #1 (Property 1 & 5)

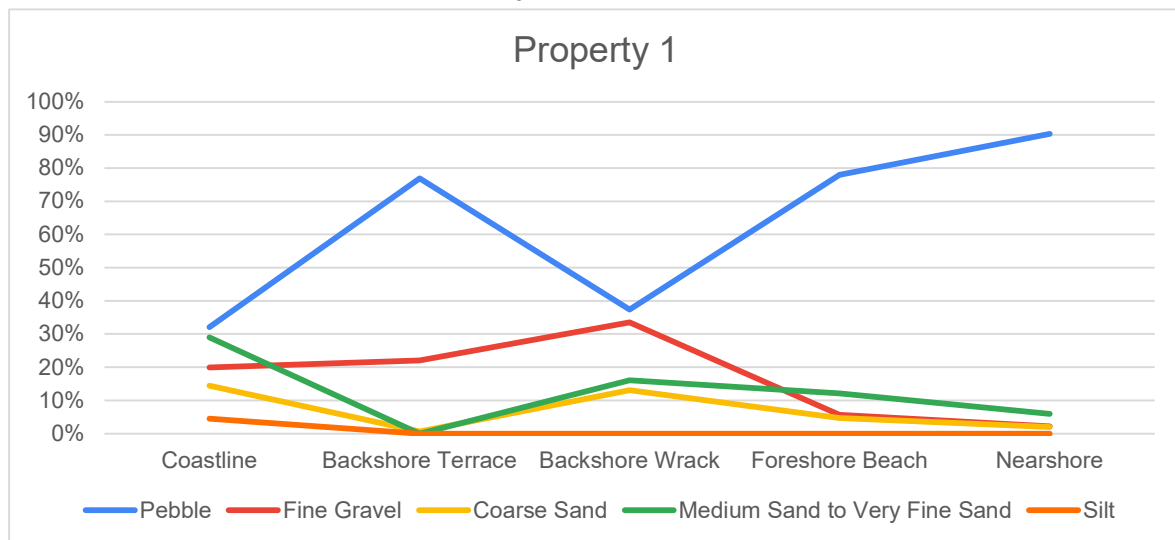
59%	4.8mm+	Drain
20%	1.8 to 4.7mm	pea
22%	fine to coarse sand	fine to coarse sand

Property 1

	Coastline	Backshore	Backshore	Foreshore	Nearshore
Pebble	32%	77%	37%	78%	90%
Fine Gravel	20%	22%	34%	6%	2%
Coarse Sand	14%	1%	13%	5%	2%
Medium Sand to Very Fine Sand	29%	0%	16%	12%	6%
Silt	5%	0%	0%	0%	0%

Recommended Composition

Pebble	54%
Fine Gravel	24%
Coarse Sand	9%
Medium Sand to Very Fine Sand	13%
Silt	0%

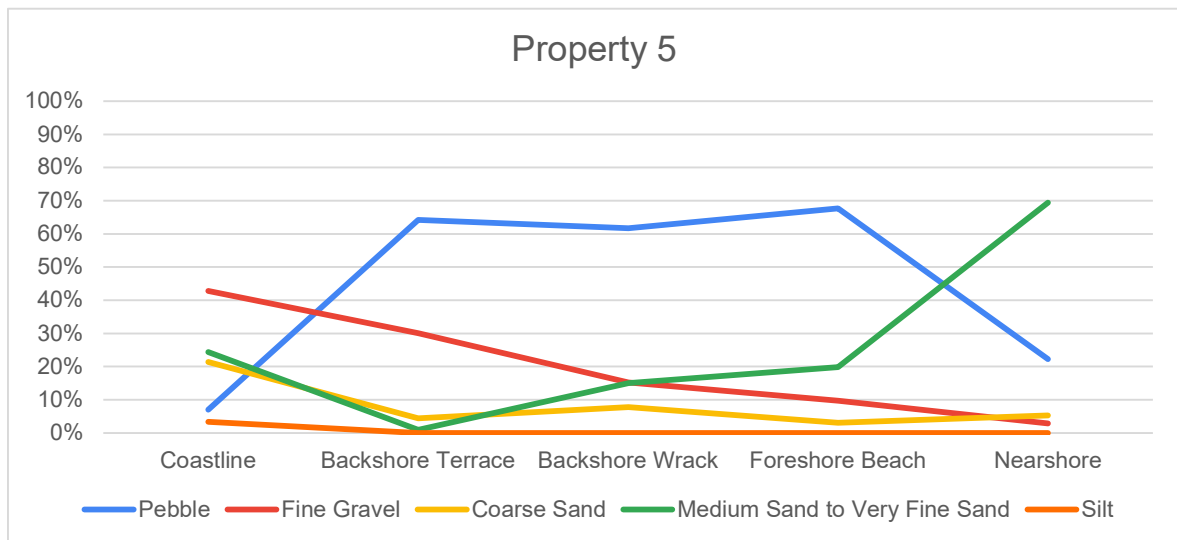


Property 5

	Coastline	Backshore	Backshore	Foreshore	Nearshore
Pebble	7%	64%	62%	68%	22%
Fine Gravel	43%	30%	15%	10%	3%
Coarse Sand	21%	4%	8%	3%	5%
Medium Sand to Very Fine Sand	24%	1%	15%	20%	69%
Silt	3%	0%	0%	0%	0%

Recommended Composition

Pebble	64%
Fine Gravel	15%
Coarse Sand	6%
Medium Sand to Very Fine Sand	15%
Silt	0%



Sediment Size**Range (mm)****Wentworth Classification**

+	4.7498	Pebble Gravel
4.7497	1.8288	Granule Gravel to Very Coarse Sand
1.8287	0.762	Coarse Sand
0.7619	0.0737	Medium sand to very fine sand
0.0736	-	Silt

Aggregate Mix #2 (Property 3 & 6)

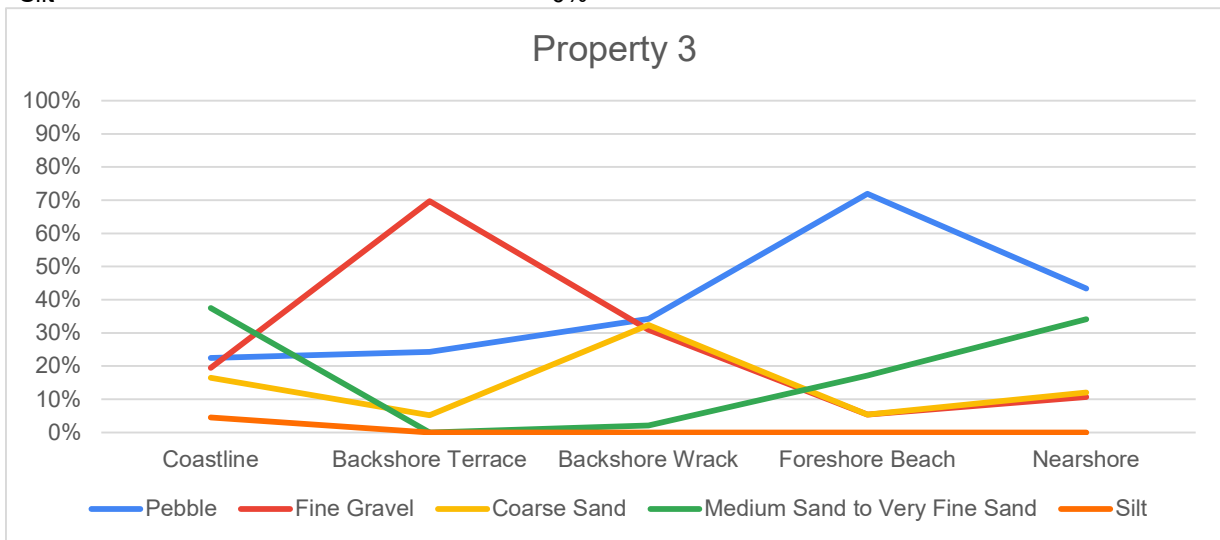
42%	4.8mm+	Drain
23%	1.8 to 4.7mm	pea
35%	fine to coarse sand	fine to coarse sand

Property 3

	Coastline	Backshore	Backshore	Foreshore	Nearshore
Pebble	23%	24%	34%	72%	43%
Fine Gravel	20%	70%	31%	5%	11%
Coarse Sand	17%	5%	32%	5%	12%
Medium Sand to Very Fine Sand	38%	0%	2%	17%	34%
Silt	5%	0%	0%	0%	0%

Recommended Composition

Pebble	45%
Fine Gravel	27%
Coarse Sand	22%
Medium Sand to Very Fine Sand	6%
Silt	0%

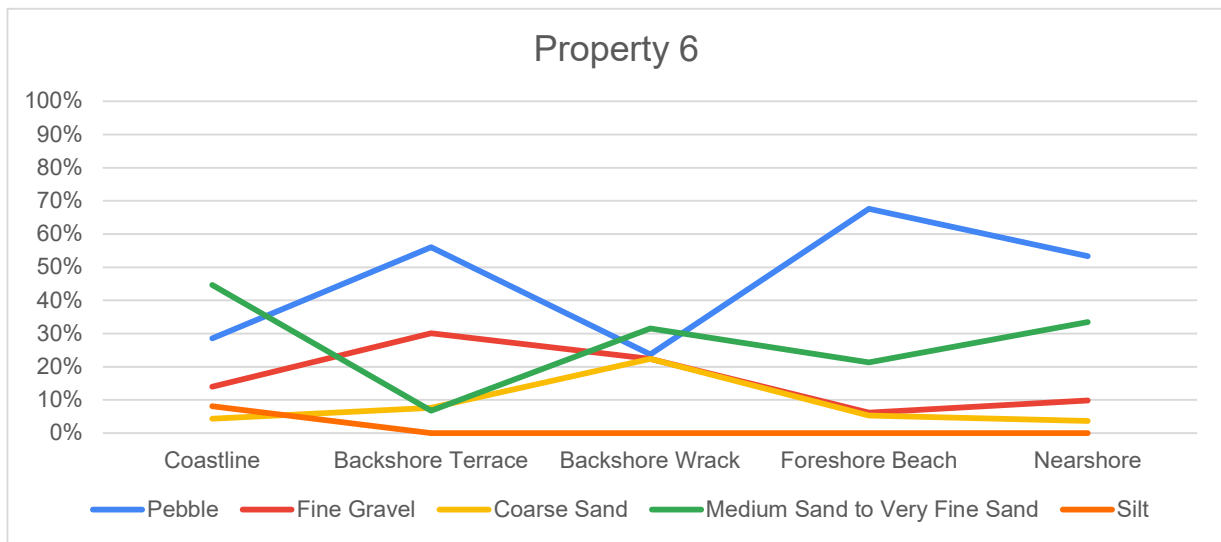


Property 6

	Coastline	Backshore	Backshore	Foreshore	Nearshore
Pebble	28%	56%	24%	68%	53%
Fine Gravel	14%	30%	22%	6%	10%
Coarse Sand	4%	8%	22%	5%	4%
Medium Sand to Very Fine Sand	45%	7%	32%	21%	33%
Silt	8%	0%	0%	0%	0%

Recommended Composition

Pebble	40%
Fine Gravel	18%
Coarse Sand	16%
Medium Sand to Very Fine Sand	26%
Silt	0%



Summary of Baker Beach Shoreline Erosion Mitigation Recommendations

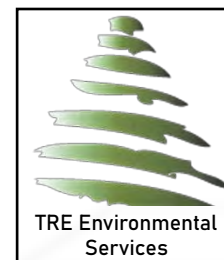
As pertaining to areas seaward of land parcels:

235 Quarry Drive PID 009-555-706
239 Quarry Drive PID 009-555-731
434 Baker Road PID 009-555-781
431 Baker Road PID 000-014-656

SALT SPRING ISLAND

Developed for: Aurora Professional Group
c/o Bradley Fossen P.Eng
338 Lower Ganges Rd UNIT 202
Salt Spring Island, BC V8K 2V3

Developed by: Thomas R Elliot PhD P.Geo P.Ag
TRE Environmental Services
tom@elliot.org



1. Introduction

This summary report and preceding investigations were conducted within the intentions of A Coastal Marine Strategy for British Columbia¹, and we specifically acknowledge that our work spans Halalt and Penelakut Tribe First Nation territories. We are grateful for the knowledge, teachings and holistic worldviews contained within. These holistic worldviews were, and are, foundational to how First Nation Peoples steward the lands, water, seabed, air and resources that sustain them.

This summary report presents climate resilient shoreline erosion mitigation opportunities for Bakers Beach, Salt Spring Island. The existing geohazards, ecologic, and marine characteristics of Bakers Beach and surrounding area have been assessed in previous reporting which is the result of field and desktop investigations. Those investigations have guided the identification of suitable and effective mitigation measures for the area in context of local shoreline processes.

The suitability of mitigation measures was guided by the Stewardship Centre for British Columbia Green Shores for Homes² program, including the assessment approach and our best practices for erosion management. Suitability is based on site characteristics evaluated during assessment of upland geohazards and surface hydrology³; shoreline and coastal sediment dynamics⁴; and Environmental Assessment⁵.

The recommendations within this report are generalized, with Site specific design pending support of concept by participating property owners and local government.

2. Shoreline and Upland Characteristics

There were no significant geohazards identified within upland of the assessed areas, ensuring no overriding natural hazard would affect the recommended mitigation measures. There is both natural and ditched concentration of stormwater flow to pre-existing natural catchments. A consistent upland terrace across the assessed area has sparse areas where stormwater flow concentrates, creating localized soil wetness, fostering wet-soil vegetation

¹ A Coastal Marine Strategy for British Columbia Policy Intentions Paper (December 2022).
<https://engage.gov.bc.ca/app/uploads/sites/121/2022/12/Coastal-Marine-Strategy-Intentions-Paper.pdf> Accessed 11/2023

² Stewardship Centre of BC. Green Shores for Homes. 2023.
https://stewardshipcentrebc.ca/PDF_docs/greenshores/Resources/GSHCreditsandRatingsGuide.pdf

³ Geohazard Assessment of Lands. Pertaining to upland area from the shoreline of 235, 239 Quarry Drive and 431, 434 Baker Rd. TRE Environmental Services. File: 2023.900_A – D

⁴ Assessment of Marine Shoreline Characteristics: Report for Coastal Erosion Mitigation. TRE Environmental Services. File: 2023.900_E

⁵ Environmental Assessment: 235, 239 QUARRY DRIVE & 434, 431 BAKER ROAD SALT SPRING ISLAND. Corvidae Environmental Consulting Inc.

and affecting downslope coastal bluff erosion. Vegetation of the upland terrace and slopes above are typical of the red-listed Douglas-fir – arbutus ecological community, which is at risk of being lost in BC.

The coastal bluff trends from bedrock-dominant in the northwest, downward (dipping) to the southeast whereby the low gradient backshore and coastline is predominantly fine gravel and sand (respectively). Vegetation along the coastal bluff was characterized by Douglas-fir – arbutus woodland species, with lesser amounts of shore pine and Garry oak. Understory species included pink (hairy) honeysuckle, grasses, weeds, evergreen huckleberry, and numerous invasive species. The shoreline and uplands are habitat for river otter, belted kingfisher, and a variety of yellow listed bird species.

The majority of foreshore area is dominated by a low-tide terrace, which results in retention of the sediment that forms the beach face and backshore sediment terrace. The beach face is predominantly gravel and sands with frequent cobble to boulder coarse fragments. The southeastern foreshore, in front of 431 Baker Road is dominated by the beach face, which trends toward finer sediment with sparse stones and boulders. The backshore has limited grasses, with minor occurrence of landslip depositing sufficient mineral soil on the backshore terrace to foster salt tolerant woody species – although these deposits are at risk of removal under unmitigated storm wave-action.

There are areas of the foreshore mapped as surf smelt and Pacific sand lance spawning habitat. Off-shore, there are mapped eelgrass beds which support herring and forage fish. Additionally, there are known plainfin midshipman rearing grounds off-shore – which draws raptors and sea-birds to the annual food source. Intersecting these off-shore area is a mollusc lease parcel, which has seen intermittent operation in recent history.

Any recommended mitigation options will maintain critical awareness of these habitat to maintain a healthy and productive coast that sustains ecosystems with abundant fisheries and marine wildlife.

3. Summary of Management and Mitigation Options

One of the easiest and most effective management options is monitoring the rate of erosion. A suitable method for monitoring is static-location imagery, with conscious effort to reproduce both location and visibility-conditions to provide comparable results. Timing of monitoring should be once per year at minimum, with updated imagery after significant storm events so as to capture occurrence of punctuated erosion.

3.1. Bioengineering and Revegetation

Bioengineering and selective planting of the backshore, coastline and upland terrace are recommended in the areas indicated in Figure 1 of this document. Each shading colour in Figure 1 indicates differing goals and motivation for planting, as follows:

- Backshore planting: Primarily planting grasses and sedge due to a lack of accumulated mineral soil that would support larger woody species. Planting would intend to create ‘clumps’ on the backshore terrace to encourage sediment accumulation.
- Coastline planting: Planting is viable in the upper surficial materials which cap the bedrock coastal bluff. The coarse soil texture and south-facing exposure results in an anticipated attrition of planting-stock due to drought conditions, or consistent irrigation during drought season. Where appropriate along the coastal bluff implementing a succession tree-planting program would benefit the relatively even-aged population of existing trees. There is opportunity for pole planting of salt-tolerant woody species along the southeastern coastline fronting 431 Baker Road. Invasive management is recommended for the coastline of 431 Baker Road as part of the revegetation process.
- Upland terrace planting: Planting of wetted soils would increase evapotranspiration, reducing long-term groundwater erosion of the coastal bluff. In these areas, it would be suitable to plant hydrophilic species common to the Douglas-fir – arbutus woodland species understory. Extending additional deeper-rooted plantings from these wetted areas to the coastal bluff would increase soil cohesion of the area likely to fail.

3.2. Wave Deflection

Wave deflection is recommended, in areas shown in Figure 2, to disperse the persistent wake from vessel traffic, which contributes to sediment loss from the foreshore. An effective way to accomplish wave deflection is by sparse placement of boulders along the low-tide terrace so as to provide relatively uniform coverage from the predominant wave direction (west, for vessel wake). These boulders would be submerged at high tide, and as such would assist in disrupting plunging breaker wave action, prompting transition to surging breaker wave which better distributes (i.e. lessen the peak) erosion forces. The shoreline already has sparse coverage of large glacial erratics, weathered nodular boulders emerging from bedrock, and stones to boulders from upland till and bedrock exposures. Placement of boulders would look to mimic and enhance this natural process to accomplish erosion mitigation goals.

3.3. Beach Nourishment

Beach nourishment, as a concept, is an exaggeration of existing natural sediment supply processes which primarily uses coarse sediment due to mobility – and therefore loss – of fine sand and smaller particles. The installation of sediment for beach nourishment also attenuates with natural conditions through localized re-distribution within the backshore, foreshore beach face and low-tide terrace.

The intention of a beach nourishment program for the assessed area is to increase the width and elevation of backshore terrace, as shown in Figure 3, approaching the coastal bluff in most areas. This supplement to the sediment budget is intended to dissipate incoming wave energy by changing the plunging breaker wave type (higher erosion) occurring under storm event conditions to a surging breaker wave type (lower erosion).

The beach nourishment program will supplement long-term sediment deficiency resulting from hard armouring within the drift-cell and coastal bluff erosion mitigation activities. As the preceding assessments have accounted for our changing climate and sea level rise⁶, the recommended beach nourishment meets a number of climate change resilience objectives as explored through the following sections of this document.

4. Applicable Potential Green Shores Credits Scoring

The following evaluates the recommended measures and associated activities under the Green Shores for Homes credit scheme, wherefrom categories which have no applicability have been excluded from the following table.

Green Shore for Homes Credit Categories	Possible Score	Potential Project Score
Shoreline physical processes		
1.2 Setback/Impact Avoidance (110m/600m does not qualify)	9	7
1.5 Nature-Based Erosion and Flood Management	13	13
Shoreline habitat		
2.1 Enhance Bird Habitat Stewardship	8	8
2.2 Riparian and Emergent Vegetation	13	13
2.3 Trees and Snags	5	4
2.4 Invasive Plants	4	2
2.5 Organic Material	6	5
2.6 Overwater Structures	6	4
Water Quality		
3.2 Reduce and Treat Runoff	9	7
3.5 Aesthetic Vegetation Chemical Control	3	3
3.6 On-Site Sewage Treatment	4	3
Shoreline stewardship		

⁶ Natural Resources Canada. James *et al.* 2021. Relative sea-level projections for Canada based on the IPCC Fifth Assessment Report and the NAD83v70VG national crustal velocity model.
https://geoscan.nrcan.gc.ca/text/geoscan/fulltext/of_8764.pdf

4.1 Shoreline Collaboration	8	8
4.2 Public Information and Education	3	3
4.3 Conservation Easement or Covenant	6	2
4.4 Shoreline Stewardship Participation	2	2
Total	99	84

Of note is that Potential Project Score is optimal, and performance should be based on the Project aspiring to secure all 84 credits while recognizing that the Green Shores for Homes Gold rating is a minimum 40 points, of which a minimum 20 points (collectively) are acquired from Shoreline Process and Shoreline Habitat credit categories.

5. BC Marine Strategy Intentions

In this section, the recommended mitigation measures are generally evaluated under the 30 intentions of the BC Marine Strategy – as presented in the table below with the following ranking method:

Intention Met	No Reasonable Affect	Detracts from Intention	
BC Marine Strategy Intention	Bioengineering and Revegetation	Wave Deflection	Beach Nourishment
Healthy and Productive Coast			
A-1 Wild salmon			
A-2 Monitor health			
A-3 Prevent pollution			
A-4 Protect habitat			
A-5 Recover S.A.R.			
Resilience to Climate Change			
B-1 Safe communities			
B-2 Support seafood			
B-3 Nature-based solutions			
B-4 Mitigate acidification			
B-5 Protect carbon sinks			
Trusting, Respectful Relationships			
C-1 Respect FN rights			
C-2 Engage British Columbians			
C-3 Collaborative stewardship			
C-4 Coastal legislation			
Holistic Learning and Knowledge Sharing			
D-1 Weave Traditional and Western			
D-2 Value the Ocean			

D-3 Enhance spatial data			
D-4 Improve data access			
Community Well-Being			
E-1 Create steady employment			
E-2 Diverse workforce			
E-3 Support FN cultural revitalization			
E-4 Improve community resilience			
E-5 Develop marine use plans			
E-6 Improve access to nature			
A Sustainable, Thriving Ocean Economy			
F-1 Invest and Diversify			
F-2 Co-develop FN opportunities			
F-3 Support marine fisheries			
F-4 Advance sustainable aquaculture			
F-5 Support regenerative marine tourism			
F-6 Manage cumulative effects			

Broadly, the recommended erosion mitigation is meeting the intentions of the BC Marine Strategy, with areas of Community Well-Being and Sustainable, Thriving Ocean Economy remaining challenging intentions to meet through the limited size of this project.

6. Conclusion and Next Steps

Due to the low-tide terrace and low gradient foreshore beach-face within the assessed area, there is an opportunity to manage the consequence of sea level rise through a hybrid soft-shores erosion mitigation program that includes upland water management and riparian vegetation enhancement.

The scoped mitigation program includes three distinct options: Bioengineering and revegetation; Wave deflection; and Beach nourishment which can be implemented in the areas indicated in Figures 1 - 3.

The evaluation of the recommended measures was conducted under the Green Shores for Homes credit scheme, wherefrom a score of 84/99 possible credits was determined to be reasonably accomplished. Additionally, the alignment with BC's Marine Strategy Intentions was determined to be meeting most intentions or having no affect. There was no adverse impact to BC Marine Strategy Intentions consequent to the recommended mitigation measures identified through this evaluation.

The next steps in this process are to work under the Shoreline Stewardship credit categories as well as Intentions C – D (as shown above) to secure local government, stewardship, community and First Nation support. With support, permit applications will be required prior

to implementation. Additional technical detail beyond what has been provided in this report, including detailed survey and cross-sections of proposed alterations, will be necessary for permit applications.

7. Closure

The undersigned certifies that the above recommendations are based on best practices, guidance and professional experience to the capacity of the qualified professional of record – under similar constraints. There is reasonable expectation of professional product to be of sufficient quality and accuracy to be acceptable by receiving landowners, agency and governments. However, revision is an acceptable practice – one that I encourage and embrace. Should any requests for changes be made, please contact the undersigned.

Qualified Professional of Record	THOMAS R. ELLIOT PhD P.Geo, P.Ag Name	 Signature

Thomas R Elliot PhD P.Geo. P.Ag.

Digital copy of physical stamps, original available upon request.
Date: <u>January 5 2024</u>

Limitations

The QP signatory to this assessment and report assures accuracy of existing and field observation, and evaluation of technical geohazard according to best practices of the Engineers and Geoscientists of BC. The content of this report are applicable to the subject land parcels, and specifically the Site as defined in this report. Any extension of the evaluation to areas outside of the defined area assessed are not valid.

The report has been conducted according to guidelines and reporting standards of similarly qualified professionals, given similar time and budget. At time of writing, the report meets due diligence and investigatory reporting requirements to provide QP recommendations with declared competency in the subject areas. Therefore, the author of this report does not maintain liability insurance for actions taken based on the reporting, and only accepts error and omission liability up to the value of this report. The receipt, utilization and any planning, further studies or development actions undertaken by the recipient of this report are based on their acceptance of their own liability therein.

Figure 1. Areas recommend to undergo riparian and coastline revegetation



Figure 2. Areas recommended for wave deflection installations



Figure 3. Areas recommended to receive beach nourishment





ENVIRONMENTAL ASSESSMENT

235, 239 QUARRY DRIVE & 434, 431 BAKER ROAD
SALT SPRING ISLAND

PREPARED FOR:
BRADLEY FOSSEN
AURORA PROFESSIONAL GROUP INC.
SALT SPRING ISLAND, BC

AND

ISLANDS TRUST - SALT SPRING ISLAND
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AND

DEPARTMENT OF FISHERIES AND OCEANS CANADA
65 FRONT STREET
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CORVIDAE
ENVIRONMENTAL CONSULTING INC

6526 WATER STREET, SOOKE, BC

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	REGULATORY FRAMEWORK.....	4
2	SCOPE OF WORK.....	7
3	METHODS.....	7
3.1	DESKTOP REVIEW.....	7
3.2	FIELD ASSESSMENT	7
4	ENVIRONMENTAL SITE ASSESSMENT	8
4.1	CLIMATE AND BIOGEOCLIMATIC ZONE	8
4.2	TERRAIN AND SOILS	8
4.3	VEGETATION.....	8
4.4	WILDLIFE	10
4.5	MARINE ENVIRONMENT.....	10
4.6	SPECIES AT RISK	12
5	POTENTIAL ENVIRONMENTAL IMPACTS AND RECOMMENDED ENVIRONMENTAL PROTECTION MEASURES	15
6	REFERENCES	16
	APPENDIX A – SITE PHOTOGRAPHS	17

LIST OF TABLES

Table 1.	Site details	1
Table 2.	Plant species observed on site during the field visit on May 30, 2023.	9
Table 3.	Wildlife Species observed on site during the field visit on May 30, 2023.....	10
Table 4.	Species at risk that may occur in the vicinity of the Site.....	12
Table 5.	Aquatic species at risk that may occur in the vicinity of the Site.	13

LIST OF FIGURES

Figure 1.	Site Location	3
Figure 2.	Development Permit Area 3 - Shoreline	6
Figure 3.	Sensitive Shoreline Area in proximity to the Site	11
Figure 4.	Species and ecosystems at risk occurrences in the vicinity of the property	14



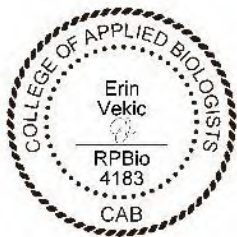
LIST OF PHOTOS

Photo 1. Close-up of foreshore ground, looking southeast. May 30, 2023.....	17
Photo 2. West view of the foreshore environment. May 30, 2023.....	17
Photo 3. Invasive species infestation near 431 Quarry Road, looking north. May 30, 2023.....	18
Photo 4. Northeast view of belted kingfisher nesting burrows. May 30, 2023.	18
Photo 5. North view of upland forested habitat. May 30, 2023.....	19
Photo 6. View of cliff/shoreline bank, looking west. May 30, 2023.....	19
Photo 7. Southwest view of backshore environment at 235 Quarry Road. May 30, 2023.	20
Photo 8. North view of riprap placement at CRD beach access near 431 Baker Road. May 30, 2023.	20

CAVEAT

This Environmental Assessment (EA) has been prepared with the best information available at the time of writing, including the Salt Spring Island Official Community Plan, communications with the client, a site visit, review of site plans and design drawings and other documentation relevant to the project. This EA has been developed to assist the project in remaining in compliance with relevant environmental regulations, acts and laws pertaining to the project and to identify sensitive environmental features that may require mitigation and consideration during future phases of the project.

Report Prepared By:



Erin Vekic, R.P.Bio, M.Sc.,
Environmental Biologist
Corvidae Environmental Consulting Inc.



1 INTRODUCTION

Corvidae Environmental Consulting Inc. (Corvidae) is pleased to provide this Environmental Assessment (EA) for the properties located at 235, 239 Quarry Drive and 434, 431 Baker Road, Salt Spring Island (the Site)(Figure 1)(Table 1). The Site includes four shoreline lots that are zoned as Rural (R). The Site occurs within the Shoreline Development Permit Area (DPA) 3 as outlined in the Salt Spring Island Official Community Plan (OCP) and shown on Map 20. DPA 3 includes upland areas within 10 metres of the natural boundary and the marine environment 300 m seaward of the natural boundary (measured horizontally).

Table 1. Site details

Civic Address	PID	Legal description	Current Zoning
235 Quarry Drive	009-555-706	LOT 1, PLAN VIP46155, SECTION 6, RANGE 1W, COWICHAN LAND DISTRICT, PORTION NORTH SALT SPRING, & SEC 7	R
239 Quarry Drive	009-555-731	LOT 3, PLAN VIP46155, SECTION 6&7, RANGE 1W, COWICHAN LAND DISTRICT, PORTION NORTH SALT SPRING	R
434 Baker Road	009-555-781	LOT 5, PLAN VIP46155, SECTION 6, RANGE 1W, COWICHAN LAND DISTRICT, PORTION NORTH SALT SPRING	R
431 Baker Road	000-014-656	LOT AM2, PLAN VIP7144, SECTION 6, RANGE 1W, COWICHAN LAND DISTRICT, PORTION NORTH SALT SPRING, EXCEPT PLAN 40042, EXC PT IN PL 40042	R

This EA is provided in support of proposed coastal erosion mitigation development activities (the project) at the Site within the shoreline DPA. The project is proposed in response to identified bluff failure that is occurring due to the following mechanisms: 1) upland conveyance of rainwater contributing to pore water pressure in the soils/surficial material wedge sitting atop bedrock coastal bluffs, and 2) wave action creating toe erosion (bedrock) or undercutting (sediments). These issues and mechanisms have been outlined in detail within Geohazard Assessment Reports that were completed for each property listed in Table 1 by a Qualified Professional (QP) (submitted separately).

Design mechanisms are currently being developed; it is planned that a beach nourishment technique will be applied to the Site. This is determined by following the marine shoreline design guidelines decision tree (Johannessen et al. 2014). This technique involves the strategic placement of material (e.g., sand, gravel) to reduce erosion of upper beach and backshore areas. Placement of gravel and limited fines creates porosity and air space to decrease wave energy along the shoreline. Materials sourced for the proposed beach nourishment would be brought in via barge and applied to specific areas at the Site, as directed by a QP.

This EA document, in combination with the Geohazard Assessment Reports, will be utilized to inform future coastal erosion mitigation development activities, as determined by a QP, to target the identified bluff failure at the Site. This EA will be updated to include potential environmental effects of the proposed project and recommended environmental protection measures once formalized project design details have been received. All future proposed coastal erosion mitigation development activities must be



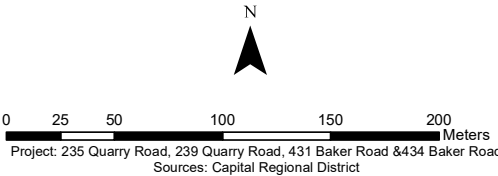
completed in accordance with the Salt Spring Island Official Community Plan (OCP) Bylaw No. 434 as well as relevant provincial and federal legislation.





Site Location

Property Boundary



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Corvidae Project No.
COR-2023-050

Rev. #	Date
0	October 19, 2023

Figure 1

1.1 REGULATORY FRAMEWORK

This environmental assessment is designed to comply with the provisions set out in the Salt Spring Island Official Community Plan (OCP) Volume 2 Part E for development permit areas (DPAs) and for compliance with the provisions for environmental protection contained in the following relevant legislation:

Municipal

Salt Spring Island OCP, Bylaw No. 434 (Salt Spring Island Local Trust Committee 2008)

DPA 3 - Shoreline

“Development Permit Area 3 is shown on Map 20. It is all that area of land covered by water between the natural boundary of the sea and a line drawn parallel to and 300 m seaward of the natural boundary of the sea. It also encloses the land within 10 m of the natural boundary of the sea (measured horizontally) in areas where the marine environment has been identified as being particularly sensitive to development impacts.

Development Permit Area 3 is designated according to Section 879 (1)(a) of the Municipal Act to identify objectives and guidelines for the form and character of the commercial and general employment development allowed on the water surface. It is also designated according to Section 879 (1)(a) and (b) to protect the natural environment and to protect development from hazardous conditions.”

Objectives for DPA 3 include the following:

- “To protect the quality of the tidal waters that surround Salt Spring Island.
- To protect fish and wildlife habitat.
- To prevent erosion and hazardous conditions that could result from interrupting the natural geohydraulic processes along the shoreline.
- To protect development from hazardous conditions. BL488 (07/20)
- To protect the natural beauty of the island's shoreline areas where commercial and general employment developments are allowed.
- To ensure such development is unobtrusive and contributes to the natural, public character of the Crown foreshore.”

The development permit areas are shown in Figure 2. The guiding principle for the use of Development Permits is found within the *Local Government Act*. Development Permit Areas can be designated for purposes such as, but not limited to: protects, enhances and restores the biodiversity and ecological values and functions of environmentally sensitive areas; fosters compatibility between development, existing land uses and environmentally sensitive areas; maintains connectivity between sensitive ecosystems; and protects water quality and quantity.

Provincial

- Wildlife Act (1996)
- Invasive Species Council of BC
- *Weed Control Act* (1996, current as of October 2016)



Federal

- Migratory Birds Convention Act (1994)
- Species at Risk Act (SARA) (2002)
- Fisheries Act (2019)
- Canadian Environmental Protection Act (CEPA) (1999)
- Canadian Navigable Waters Act (1985)

Guidelines

Washington State Aquatic Habitat Guidelines Program: Marine Shoreline Design Guidelines (2014)
<https://wdfw.wa.gov/sites/default/files/publications/01583/wdfw01583.pdf>





Development Permit Area 3 - Shoreline

- Shoreline - Forshore
- Shoreline - On-land portion
- Property Boundary



0 25 50 100 150 200 Meters
 Project: 235 Quarry Road, 239 Quarry Road, 431 Baker Road & 434 Baker Road
 Sources: Capital Regional District

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 COR-2023-050

Rev. #	Date
0	October 19, 2023

Figure 2

2 SCOPE OF WORK

Corvidae completed an environmental assessment for the aforementioned properties listed in Table 1. The environmental assessment documented the ecological features on the Site with a focus on the shoreline and foreshore areas. Background information was reviewed, including applicable databases. During the assessment, the following features were documented in this report:

- Areas of sensitivity, including the marine shoreline environment.
- Areas of habitat and biodiversity values.
- Plant communities and plant species on site.
- Potential wildlife presence and wildlife habitat.
- Soil types and terrain.
- Surface water flow patterns.

3 METHODS

3.1 DESKTOP REVIEW

Baseline biophysical conditions were compiled by reviewing the best available data and information including existing reports for the area and conducting searches of online provincial and federal databases:

- BC Conservation Data Centre (BC CDC 2023a and 2023b).
- BC HabitatWizard (Province of BC 2023).
- Aerial photographs of the property (Google Earth 2023).
- CRD mapping system and database (CRD 2021).
- MapIT application (Islands Trust 2023)
- Salt Spring Island Official Community Plan Bylaw No. 434 (Salt Spring Island Local Trust Committee 2008).

3.2 FIELD ASSESSMENT

A field assessment of the property was completed by a Qualified Environmental Professional (QEP) from Corvidae. The assessment included characterization of vegetation and habitat types, wildlife sign and species observations, wildlife habitat, and assessed the current conditions of the Site.

4 ENVIRONMENTAL SITE ASSESSMENT

Corvidae completed a site visit on May 30th, 2023. Site photos are included as Appendix A.

4.1 CLIMATE AND BIOGEOCLIMATIC ZONE

The project is located within the Coastal Douglas-fir (CDF) biogeoclimatic zone, specifically in the Moist Maritime Coastal Douglas-fir Subzone (CDFmm) (BC CDC 2021b). The CDFmm occurs at low elevations (<150 m) along southeast Vancouver Island, the southern Gulf Islands, and part of the Sunshine Coast. The CDFmm has the mildest climate in Canada. This subzone has a long growing season with warm, dry summers and mild, wet winters.

4.2 TERRAIN AND SOILS

Soils in the CDF biogeoclimatic zone, generally derived from morainal, colluvial, and marine deposits, are typically Brunisols, grading with increased precipitation to Humo-Ferric Podzols (Nuszdorfer et al. 1991). Soils on the Site are generally comprised of loam, well-draining, Orthic Dystric Brunisol soils. (GALIANO soil association) (BC SIFT 2018). The Site slopes moderately to steeply from northeast to southwest in the direction of the shoreline.

4.3 VEGETATION

South-facing, dry banks along the shoreline and immediate backshore area were forested and characterized by a Douglas-fir – arbutus woodland with lesser amounts of shore pine and Garry oak. The structural stage was observed to be young forest with larger (mid-seral) trees occurring intermittently. Species observed are consistent with the red-listed Douglas-fir – arbutus ecological community, which is an ecological community that is at risk of being lost (extirpated, endangered or threatened) in BC. Understory species in the immediate backshore included predominantly low growth of salal and dull Oregon-grape. Banks along the shoreline were characterized by pink (hairy) honeysuckle, grasses, weeds, evergreen huckleberry, and invasive species. The moss layer was very poorly developed near the shoreline.

All vegetation species detected during the site assessment are listed in Table 2. Six invasive species were observed, including English ivy, scotch broom, Himalayan blackberry, bull thistle, oxeye daisy, and spurge-laurel. All are listed as Control Species according to the Capital Regional District, whereby established infestations of these species are common and widespread throughout the Capital Region. Control should be focused in high value conservation areas¹.

¹ Capital Regional District. 2019. Status List for Priority Invasive Plants in the Capital Region. Available at: https://www.crd.bc.ca/docs/default-source/default-document-library/2019-03--regional-priority-invasive-species-list.pdf?sfvrsn=836aceca_0.



Table 2. Plant species observed on site during the field visit on May 30, 2023.

Common Name	Scientific Name	BC Provincial Status ¹	SARA Schedule 1 Status ²
Arbutus	<i>Arbutus menziesii</i>	Yellow	--
Baldhip rose	<i>Rosa gymnocarpa</i>	Yellow	--
Balsam poplar	<i>Populus balsamifera</i>	Unknown	--
Bigleaf maple	<i>Acer macrophyllum</i>	Yellow	--
Blue wildrye	<i>Elymus glaucus</i>	Yellow	--
Bracken fern	<i>Pteridium aquilinum</i>	Yellow	--
Broadleaf stonecrop	<i>Sedum spathulifolium</i>	Yellow	--
Bull thistle	<i>Cirsium vulgare</i>	Invasive ; Exotic	--
Common lamb's-quarters	<i>Chenopodium album</i>	Exotic	--
Common snowberry	<i>Symphoricarpos albus</i>	Yellow	--
Common sow-thistle	<i>Sonchus oleraceus</i>	Exotic	--
Douglas-fir	<i>Pseudotsuga menziesii</i>	Yellow	--
Dull Oregon-grape	<i>Mahonia nervosa</i>	Yellow	--
Evergreen huckleberry	<i>Vaccinium ovatum</i>	Yellow	--
English ivy	<i>Ilex aquifolium</i>	Invasive ; Exotic	--
Field elm	<i>Ulmus minor</i>	Exotic	--
Garry oak	<i>Quercus garryana</i> var. <i>garryana</i>	Yellow	--
Himalayan blackberry	<i>Rubus armeniacus</i>	Invasive ; Exotic	--
Oceanspray	<i>Holodiscus discolor</i> var. <i>discolor</i>	Yellow	--
Oxeye daisy	<i>Leucanthemum vulgare</i>	Invasive ; Exotic	--
Pacific crab apple	<i>Malus fusca</i>	Yellow	--
Perennial sow-thistle	<i>Sonchus arvensis</i>	Exotic	--
Pink honeysuckle	<i>Lonicera hispidula</i>	Yellow	--
Red alder	<i>Alnus rubra</i>	Yellow	--
Salal	<i>Gaultheria shallon</i>	Yellow	--
Scotch broom	<i>Cytisus scoparius</i>	Invasive ; Exotic	--
Scouler's willow	<i>Salix scouleriana</i>	Yellow	--
Slough sedge	<i>Carex obnupta</i>	Yellow	--
Spurge laurel	<i>Daphne laureola</i>	Invasive ; Exotic	--
Trailing blackberry	<i>Rubus ursinus</i>	Yellow	--
Tufted hairgrass	<i>Deschampsia cespitosa</i>	Yellow	--
Western redcedar	<i>Thuja plicata</i>	Yellow	--
Willow dock	<i>Rumex transitorius</i>	Yellow	--

¹ BC CDC 2023a² Government of Canada 2023a

4.4 WILDLIFE

The trees on the Site and within surrounding areas provide nesting and roosting habitat for birds, including migratory songbirds, year-round resident species, raptors, and owls. Understory shrubs, although lacking in density overall, may provide nesting habitat for birds and small mammals. One bald eagle nest is mapped by the Wildlife Stewardship Atlas (WiTS) approximately 400-500 m northwest of the Site (Nest ID BAEA-101-433), however, there are no trees shown at this mapped location based on available aerial imagery. No nests were observed during the site assessment.

South-facing slopes may provide suitable habitat for reptiles and forested areas are likely frequented by both large and small mammals. The marine environment is also anticipated to support many species (e.g., river otter, plainfin midshipman, shorebirds, waterfowl, marine mammals, etc.) given the presence of eel grass beds and surf smelt and Pacific sandlance spawning habitat that are mapped in proximity to the proposed project area (MapIT 2023). Belted kingfisher nesting burrows were observed in several locations along the proposed project area (Photo 4). The species listed in Table 3 were observed on or near the Site during the assessment.

Table 3. Wildlife Species observed on site during the field visit on May 30, 2023.

Common Name	Scientific Name	BC Provincial Status ¹	SARA Schedule 1 Status ²
American robin	<i>Turdus migratorius</i>	Yellow	--
Bald eagle	<i>Haliaeetus leucocephalus</i>	Yellow	--
Brown creeper	<i>Certhia americana</i>	Yellow	--
Chestnut-backed chickadee	<i>Poecile rufescens</i>	Yellow	--
Dark-eyed junco	<i>Junco hyemalis</i>	Yellow	--
Orange-crowned warbler	<i>Vermivora celata</i>	Yellow	--
Red breasted nuthatch	<i>Sitta canadensis</i>	Yellow	--
Spotted towhee	<i>Pipilo maculatus</i>	Yellow	--

¹ BC CDC 2023a

² Government of Canada 2023a

4.5 MARINE ENVIRONMENT

The shoreline type within the proposed project area is classified as low rock/boulder (Islands Trust n.d.). As per Map 11 of the Salt Spring Island OCP, a portion of the shoreline near 431 and 434 Baker Road is classified as an 'Environmentally Sensitive Shoreline Area' (Figure 3). Suitable forage fish spawning habitat is mapped in this area for surf smelt and Pacific sand lance. These species are an important food source for marine predators. Other notable marine environmental features include the presence of mapped eelgrass beds (flat, continuous) and patches just offshore in proximity to the Site that provide habitat for herring and forage fish (Map 13b, Galiano Conservancy 2014).



Capital Regional District

Sensitive Shoreline Area

- Sensitive Shoreline Area
- Property Boundary

Forage Fish Spawning Habitat

- Surf Smelt
- Surf Smelt/Pacific Sandlance

Eelgrass Meadow (2022)

- Dense
- Moderate
- Undetermined



0 100 200 400 600 Meters
Project: 235 Quarry Road, 239 Quarry Road, 431 Baker Road & 434 Baker Road
Sources: Capital Regional District

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Corvidae Project No.
COR-2023-050

Rev. #	Date
0	October 19, 2023
1	October 23, 2023

Figure 3

4.6 SPECIES AT RISK

A query of the BC CDC iMap tool yielded occurrences of 5 species and 5 ecological communities at risk within a two-kilometer radius of the property, including one (1) masked occurrence (BC CDC 2023b). Species are listed in Table 3 and the location of occurrences in relation to the property is provided in Figure 4.

One ecosystem at risk overlaps the Site boundary: the Garry oak / California brome (*Quercus garryana* / *Bromus carinatus*) ecological community (red-listed). This occurrence is based on Terrestrial Ecosystem Mapping (TEM) and has not been confirmed on the ground (Province of BC 2023). This ecological community was not detected during the site assessment. Species observed near the shoreline within the Site most closely characterize the Douglas-fir / arbutus ecological community (coniferous woodland habitat) which is also red-listed but is not mapped in this area by the CDC. This community has been impacted through disturbance associated with residential development along the shoreline.

No other species or ecosystems listed in Table 4 were detected on the Site during the assessment. Suitable habitat was not identified on the Site for the species listed in Table 4.

Table 4. Species at risk that may occur in the vicinity of the Site.

Common Name	Scientific Name	BC Provincial Status ¹	SARA Schedule 1 Status ²
Species			
Threaded vertigo	<i>Vertigo rowellii</i>	Blue	Special Concern
Painted Turtle - Pacific Coast Population	<i>Chrysemys picta</i> pop. 1	Red	Threatened
Macrae's clover	<i>Trifolium dichotomum</i>	Red	n/a
Leafless wintergreen	<i>Pyrola aphylla</i>	Blue	n/a
Western screech-owl, <i>kennicottii</i> subspecies	<i>Megascops kennicottii kennicottii</i>	Blue	Threatened
Ecological Community			
Garry oak / oceanspray	<i>Quercus garryana</i> / <i>Holodiscus discolor</i>	Red	n/a
Garry oak / California brome	<i>Quercus garryana</i> / <i>Bromus carinatus</i>	Red	n/a
Grand fir / dull Oregon-grape	<i>Abies grandis</i> / <i>Mahonia nervosa</i>	Red	n/a
Douglas-fir / dull Oregon-grape	<i>Pseudotsuga menziesii</i> / <i>Mahonia nervosa</i>	Red	n/a
Trembling aspen / Pacific crab apple / slough sedge	<i>Populus tremuloides</i> / <i>Malus fusca</i> / <i>Carex obnupta</i>	Red	n/a

¹ BC CDC 2023a

² Government of Canada 2023a



A query of the Fisheries and Oceans Canada Species at Risk Distribution Map (Government of Canada 2023b) yielded the following marine species at risk that have the potential to occur in proximity to the project:

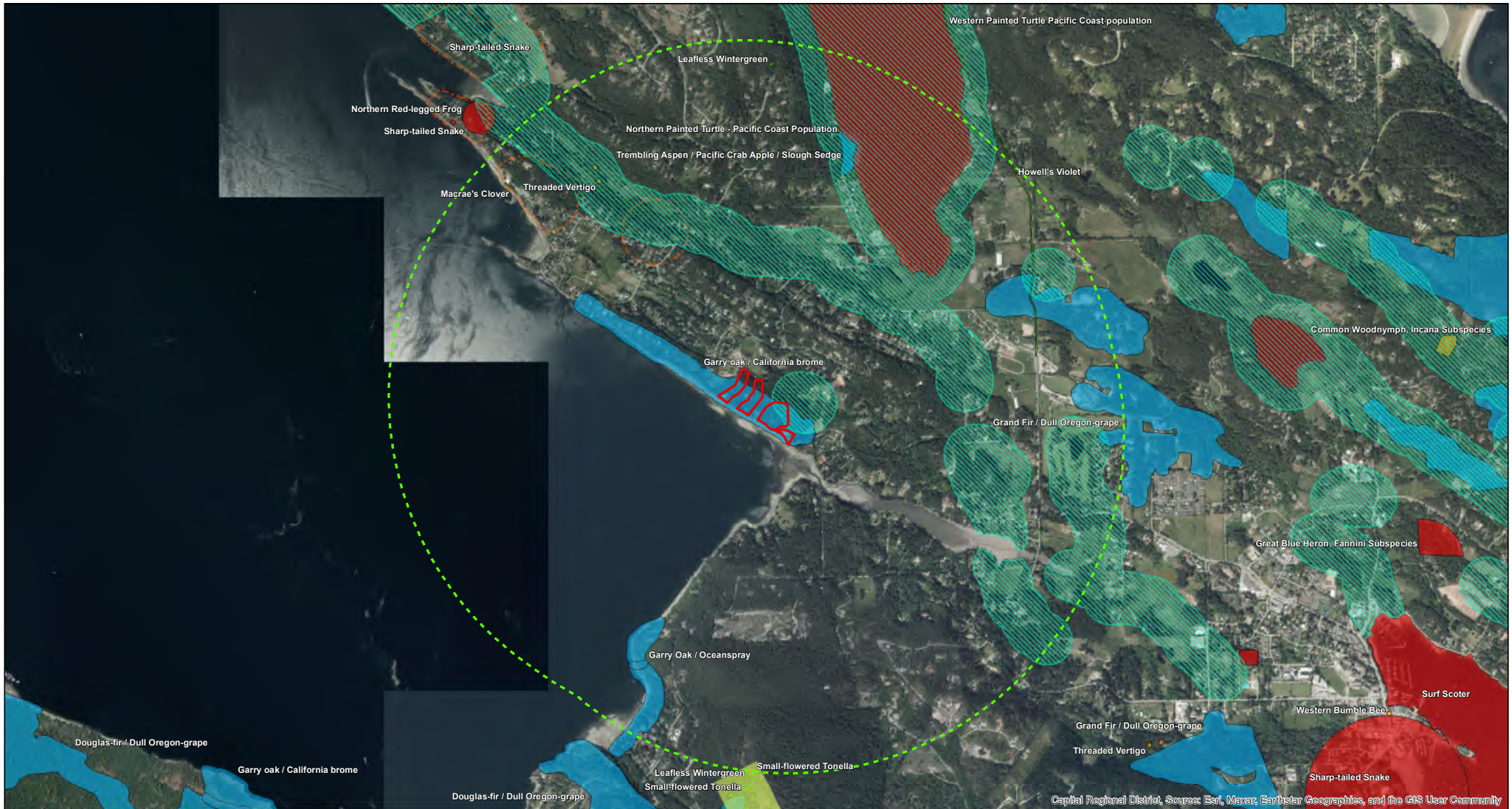
Table 5. Aquatic species at risk that may occur in the vicinity of the Site.

Common Name	Scientific Name	SARA Schedule 1 Status ¹
Steller Sea Lion	<i>Eumetopias jubatus</i>	Special Concern
Killer Whale (Northeast Pacific southern resident population)	<i>Orcinus orca</i>	Endangered
Killer Whale (Northeast Pacific transient population)	<i>Orcinus orca</i>	Threatened
Humpback Whale	<i>Megaptera novaeangliae</i>	Special Concern
Harbour Porpoise	<i>Phocoena phocoena</i>	Special Concern
Grey Whale (Eastern North Pacific population)	<i>Eschrichtius robustus</i>	Special Concern
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	Endangered
Northern Abalone	<i>Haliotis kamtschatkana</i>	Endangered
Yelloweye Rockfish	<i>Sebastes ruberrimus</i>	Threatened
Tope	<i>Galeorhinus galeus</i>	Special Concern

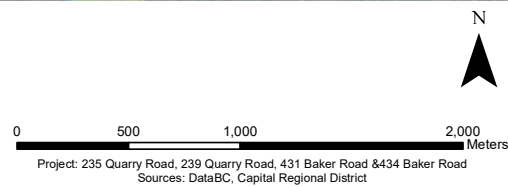
¹ Government of Canada 2023a

CRITICAL HABITAT

A mapped western painted turtle critical habitat polygon overlaps the northeastern corner of 434 Quarry Road (Province of BC 2023b; Figure 4). Critical habitat mapping is based on known occurrences and potential occurrences of suitable aquatic habitat features. Critical habitat may include lakes, ponds, marshes, river channels, roadside or drainage ditches, sluggish streams, and sloughs, and up to 150m of terrestrial habitat surrounding the aquatic feature, as most Western painted turtles in B.C. are typically found within 150m from water (Environment and Climate Change Canada 2018). The critical habitat polygon is associated with an unnamed lake that is located upslope of the project area. The project area includes only the immediate shoreline area which is not considered suitable habitat for western painted turtle.



SAR and critical habitat within 2 km of the site



CORVIDAE ENVIRONMENTAL CONSULTING INC	Rev. #	Date
	0	October 19, 2023
Corvidae Project No. COR-2023-050		Figure 4

5 POTENTIAL ENVIRONMENTAL IMPACTS AND RECOMMENDED ENVIRONMENTAL PROTECTION MEASURES

A list of environmental considerations is provided below based on current project design. This list may be updated in future should the design plans change.

- Impacts on sensitive terrestrial ecosystem areas, such as upland woodland habitat.
- Impacts on sensitive marine features, such as mapped suitable forage fish spawning habitat.
- Impacts on existing shoreline sediment delivery systems.
- Impacts on benthic organisms.
- Impacts that could compromise archaeological, First Nations cultural, historical, heritage sites or significant or outstanding landscape features.
- Spread of invasive plant species.
- Changes in wildlife habitat availability and wildlife mortality risk.
- Sediment movement in the project area.

Preliminary mitigation measures for the proposed beach nourishment works includes the following:

- Construction will be completed during periods of low tide (work in the dry).
- Ensure that works are overseen by an Environmental Monitor (EM)
- Enhancement of backshore vegetation through planting of native species, particularly overhanging species such as Oceanspray. This is included in the detailed design plan with specific plant species, locations, spacing, methods of planting and maintenance.
- Apply suitable substrate for forage fish spawning in the upper reaches of the beach profile where feasible.
- Match borrowed substrate with native sediments within the project area (mimic natural conditions).
- Maintain the current natural beach slope to the extent possible.
- Execute beach nourishment activities when birds or other mobile organisms are the least active.
- Avoid mapped suitable spawning forage fish habitat and ensure that the timing of project works does not interfere with forage fish spawning.
- Install belted kingfisher nest boxes.
- Remove invasive species along the backshore and re-plant with native species.



6 REFERENCES

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APPENDIX A – SITE PHOTOGRAPHS

Photo 1. Close-up of foreshore ground, looking southeast. May 30, 2023.



Photo 2. West view of the foreshore environment. May 30, 2023



Photo 3. Invasive species infestation near 431 Quarry Road, looking north. May 30, 2023.



Photo 4. Northeast view of belted kingfisher nesting burrows. May 30, 2023.



Photo 5. North view of upland forested habitat. May 30, 2023.



Photo 6. View of cliff/shoreline bank, looking west. May 30, 2023.



Photo 7. Southwest view of backshore environment at 235 Quarry Road. May 30, 2023.



Photo 8. North view of riprap placement at CRD beach access near 431 Baker Road. May 30, 2023.





MEMORANDUM

File No.: PLDP20240057 - 239 Quarry Dr.

X-Ref PLDP20240056 - 235 Quarry Dr.

File: PLDP20240058 - 431 Baker Rd.

DATE: May 8, 2025

TO: Legislative Clerk
Salt Spring Island Team

FROM: Stefan Cermak, Director, Planning Services

COPY: Oluwashogo Garuba, A/Planner 2
Chris Hutton, Regional Planning Manager, Salt Spring

SUBJECT: Delegated Development Permit Application
Applicant: Bradley Fossen
Location: 239 Quarry Drive, Salt Spring Island, BC

PURPOSE

The purpose of this memo is to not approve issuance of development permit PLDP20240056 (Fossen) pursuant to Land Use Permit Delegation Bylaw 534.

I have reviewed the staff report and professional reports (Attachment 1) and have concluded that the proposed development activities are not consistent with the objectives and guidelines of the development permit area. Specifically, the proposed sparse placement of boulders and installation of beach sediments conflict with Salt Spring Island Official Community Plan (OCP) Bylaw No. 434, 2008 objectives E.3.3.1 and E.3.3.2 and guidelines E.3.4.1; E.3.4.2; E.3.4.9; E.3.4.21; and E.3.4.22.

The applicant may have the decision to not approve issuance reconsidered by the Salt Spring Island Local Trust Committee by submitting a written request for reconsideration to the Deputy Secretary/Legislative Clerk within thirty days after the decision is delivered to or made available to the applicant.

The request for reconsideration must include the following:

- The applicant's address for receiving correspondence related to the request for reconsideration;
- A copy of the written decision;
- Reasons why the applicant wishes the decision to be reconsidered by the Local Trust Committee;
- The decision which the applicant requests be made by the Local Trust Committee;
- Reasons in support of the decision requested from the Local Trust Committee; and
- A copy of any documents which support the applicant's request for reconsideration by the Local Trust Committee.

Each reconsideration request shall be placed on the agenda of a regular Local Trust Committee meeting and shall include a copy of the materials that were considered by the Director of Planning Services in making the decision that is to be reconsidered, and any further materials delivered by the applicant.

The Local Trust Committee may consider any presentations made by the applicant and may either:

- confirm all or part of the delegate’s decision,
- set aside all or part of the delegate’s decision; or
- amend the delegate’s decision or make a new decision.

NEXT STEPS

Director of Planning Services to contact applicant to inform them of decision. Applicant to consider appeal within 30 days. Deputy Secretary/Legislative Clerk to place appeal and relevant materials on regular Local Trust Committee agenda if applicable. Director to inform Local Trust Committee of decision once applicant has been informed. Planner to update file and/or direct Planning Team Assistant to update electronic file.

Submitted By:	Stefan Cermak, Director, Planning Services	May 8, 2025

ATTACHMENTS

1. Staff Report dated April 29, 2025 – with attachments

DATE: April 22, 2025
TO: Stefan Cermak, Director of Planning Services
FROM: Oluwashogo Garuba, A/Planner 2
Salt Spring Island Team
COPY: Chris Hutton, Regional Planning Manager
SUBJECT: Delegated Development Permit Application
Applicant: Bradley Fossen
Location: 239 Quarry Drive, Salt Spring Island, BC

RECOMMENDATION

1. That the Director of Planning Services deny issuance of PLDP20240057 (Fossen) as the proposed activities are not consistent with several Development Permit Area 3 (DPA 3) guidelines within the Salt Spring Island Official Community Plan (OCP) Bylaw No. 434, 2008.

REPORT SUMMARY

This report is to consider issuance of a delegated Development Permit (DP) application for the proposed beach erosion mitigation activity within the **Development Permit Area 3 – Shoreline Zones** located at 239 Quarry Drive, SSI (009-555-731). The application is supported by a letter of advice from the Department of Fisheries and Oceans and the following reports:

- Marine shoreline characteristics report.
- Geohazard assessment report.
- Environmental assessment report.

These reports and the proposal have been assessed by staff against the guidelines for development in DPA 3 as outlined in the Salt Spring Island Official Community Plan (OCP) Bylaw No. 434, 2008 and were found not to be substantially in accordance with the objectives and guidelines of DPA 3. Staff therefore recommends denying issuance of the requested DP.

BACKGROUND

The 1.38 hectares (3.42 acres) property, zoned Rural (R) is located at 239 Quarry Drive, SSI. The applicant has proposed shoreline stabilization works due to the identified bluff failure at the subject property which is occurring as a result of upland conveyance of rainwater contributing to pore water pressure in the soils/surficial material wedge sitting atop bedrock coastal bluffs and wave action creating toe erosion

(bedrock) or undercutting (sediments). Because of this, the owner of this property has proposed the following mitigation activities based on the recommendations of the professional Geophysicist and the reports of the geohazard and environmental assessments that were carried out:

1. Backshore planting of grasses and sedge to create clumps on the backshore terrace in order to encourage sediment accumulation;
2. Coastline planting of salt tolerant woody species of trees;
3. Planting of hydrophilic species common to the Douglas-fir-arbutus woodland species understory;
4. Sparse placement of boulders to accomplish wave deflection along the low-tide terrace to mimic and enhance the natural process;
5. Installation of beach sediments in order to dissipate incoming wave energy by changing the plunging breaker wave type (higher erosion) occurring under storm event conditions to a surging breaker wave type (lower erosion).

According to the Salt Spring Island Official Community Plan (OCP) Bylaw No. 434, 2008 guidelines for development within the DPA 3, the construction of shoreline stabilization works is not exempt from the requirement to obtain a development permit (Section E.3.1.2) in order to achieve the objectives of the DPA 3.

Therefore, a DP application is required for the proposed construction of shoreline stabilization works within the DPA 3. The Salt Spring Island Delegation Bylaw No. 534, 2022 delegates the consideration of this application and its issuance to the Director of Planning Services.

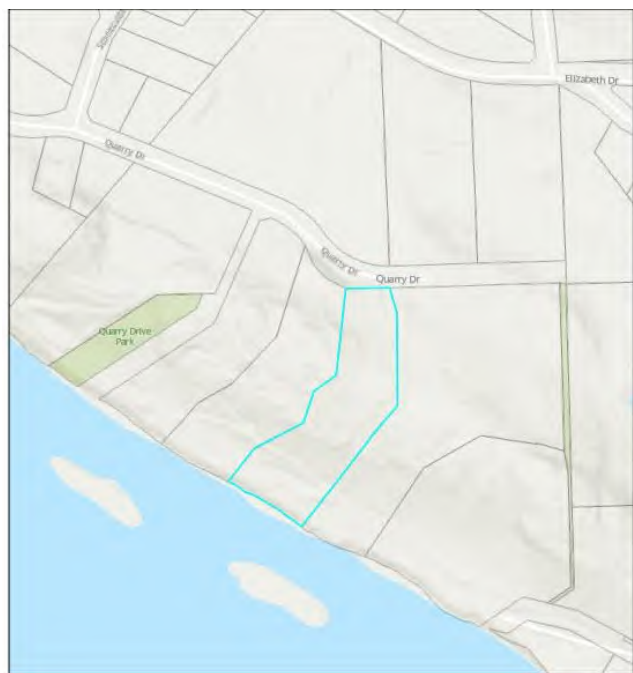


Figure 1: Subject property



Figure 2: Ortho photo of subject property



Figure 3 – Site Plan (area highlighted in red)

Professional reports submitted and attached:

- Geohazard Assessment report, October 15, 2023, prepared by Thomas R Elliot, PhD P.Geo P.Ag.
- Assessment of Marine Shoreline Characteristics, December 18, 2023, prepared by Thomas R Elliot, PhD P.Geo P.Ag.
- Summary of Baker Beach Shoreline Erosion Mitigation Recommendations, January 25, 2024, prepared by Thomas R Elliot, PhD P.Geo P.Ag.
- Environmental Assessment report, December 2023, prepared by Erin Vekic, R.P.Bio, M.Sc.

The DPA 3 checklist can be found as Attachment 2. The assessment reports listed above can be found as Attachments 3, 4, 5 and 6. The geotechnical assessment report indicates that the proposed erosion mitigation development activities do not increase the hazard rating to the existing single family dwelling or the use of the subject property and also contains preliminary mitigation measures for the proposed beach nourishment activities. Staff have evaluated the proposed erosion mitigation activities and determined that they do not meet all of the DPA 3 objectives and guidelines.

ANALYSIS

Policy/Regulatory

Official Community Plan:

The Salt Spring Island Official Community Plan No. 434 designates the subject property as Rural Neighbourhood (RL) and the marine area as Marine Other. Staff note that a rock outcrop is approximately 50m from the natural boundary immediately adjacent to the subject property (Figure 3). This rock outcrop and another southeast of the subject property is designated as Parks and Recreation. The designation highlights one aspect of the public value of the area as a recreational site.

Land Use Bylaw:

The subject property is zoned Rural (R) in the Salt Spring Island Land Use Bylaw (LUB) No. 355, 1999 while the proposed erosion mitigation activities will be taking place within Shoreline 6 (S6) zone. The rock outcrops approximately 50m from the natural boundary are zoned Parks and Reserve 6.

The proposed development has been recommended by Thomas R Elliot, P. Geo (Geohazard Assessment report, 2023) to protect the marine environment from erosional geohazard.

Development Permit Area 3 – Shoreline (DPA 3)

The subject property is within DPA 3. This includes all the area of land covered by water between the natural boundary of the sea and a line drawn parallel to and 300 m seaward of the natural boundary of the sea. It also encloses the land within 10m of the natural boundary of the sea (measured horizontally) in areas where the marine environment has been identified as being particularly sensitive to development impacts.

This Development Permit Area includes shoreline waters and natural fish and wildlife habitat that could be subject to degradation due to development. It also includes areas of land that lie adjacent to and influence the island's most sensitive shoreline environments. Shoreline areas and beaches may contain unstable slopes and soils subject to erosion, land slip and rock falls. There are also high aesthetic values along shoreline areas.

The objectives of DPA 3 (Section E.3.3) are:

- To protect the quality of the tidal waters that surround Salt Spring Island.
- To protect fish and wildlife habitat.
- To prevent erosion and hazardous conditions that could result from interrupting the natural geo-hydraulic processes along the shoreline.
- To protect development from hazardous conditions.
- To protect the natural beauty of the island's shoreline areas where commercial and industrial developments are allowed. To ensure such development is unobtrusive and contributes to the natural, public character of the Crown foreshore.

As per subsection E.3.1.2 article (f), DPA 3 is applicable when there is a construction of shoreline stabilization works.

2024 DPA 3 Assessment Report

1. ***Environmental Assessment Report:*** was prepared by Erin Vekic, R.P. Bio, M. Sc. for this proposed development. According to Erin Vekic, the environmental assessment (EA) was designed to comply with the DPA 3 guidelines outlined in the OCP. Although several mitigation measures were proposed in the report, the potential impact of the activities were not identified in the report. Also, the report did not specify how the fine gravel and sediments proposed for erosion control will remain in place

in order to control the erosion. The report also did not indicate the potential impact to the eelgrass beds and forage fish spawning areas.

2. **Geohazard Assessment Report:** was prepared and submitted by Thomas R Elliot, PhD P. Geo P. Ag. The report indicated that there is a low risk of landslide hazard impacting the single-family dwelling but there is a high risk of erosional geohazard impacting the marine environment in an ongoing and progressive manner. The proposed erosion mitigation activities according to the report do not increase the hazard rating to the existing single-family dwelling.
3. **Final Summary Report on Mitigation:** was prepared and submitted by Thomas R Elliot, PhD P. Geo P. Ag., dated January, 2024. The report indicated that the erosion mitigation activities to be carried out to minimize the impact of the erosion happening on the shoreline. The report however did not indicate how long the beach nourishment will be able to dissipate the incoming wave energy before the sediments get dispersed.

Development Permit

Staff has not attached a draft permit at this time as the proposed development activities do not meet the DPA 3 guidelines. However, staff may report back with a draft Development Permit if the Director determines that the DPA 3 guidelines are met.

Rationale for Recommendation

The recommendations on page 1 are supported as:

- the proposed activities are not consistent with the following guidelines of DPA 3:
 - E.3.4.1: All work that takes place below the natural boundary of the sea should be done in a way that minimizes degradation of water quality and disturbance of the substrate. - There is potential for disturbance of substrate arising from the proposed sediment deposit and use of machinery.
 - E.3.4.2: All work that takes place on land within 10 m of the natural boundary of the sea should be planned and carried out in a way that is consistent with the Land Development Guidelines for the Protection of Aquatic Habitat (Appendix 7).
 - The deposit of sediments is likely to have negative impact on the fish habitat and the applicant has neither provided information on the likely impacts of this activity nor provided mitigation measure to minimize these potential impacts.
 - E.3.4.9: The shoreline should not be filled in to create additional land, except minor areas of fill necessary to complete the boardwalk section of the Ganges Public Pathway System in Ganges Harbour.
 - The proposed activity includes the deposit of 434.4m² of aggregate materials, over about 300m of shoreline and at an initial height of 1.0 m above existing grade level.
 - E.3.4.21: Applications for shoreline stabilization should include a report, prepared by a Professional Engineer with experience in geotechnical engineering, which describes the proposed modification and shows:
 - a. The need for the proposed modification to protect existing structures.

- b. Where the modification is proposed to protect new structures, the locations on the property where those structures could be built and not require shoreline modification.
- c. If any natural hazards, erosion, or interruption of geohydraulic processes may arise from the proposal modification, including at sites on other properties or foreshore locations.
- d. The cumulative effect of shoreline stabilization works along the drift sector where the works are proposed.
- e. Whether there will be any degradation of water quality or loss of fish or wildlife habitat because of the modification.
- f. Whether conditions should be incorporated into the development permit to achieve the objectives of this Development Permit Area.

– It is unclear what damage to the existing structure that the proposed activities is preventing and as a result of the increased turbidity from sediment supplementation, there could be a negative impact on the fish habitat.

E.3.4.22: Shoreline stabilization should be limited to that necessary

- a. To prevent damage to existing structures or an established use on adjacent upland.
- b. To prevent damage to a proposed public land use.

New upland structures or additions should be located and designed to avoid or reduce the need for shoreline stabilization. Shoreline stabilization should not interrupt natural processes solely to reduce erosion of undeveloped land, except agricultural land. – The public use of the land is not considered as damaging by the naturally occurring slow sediment erosion.

- the proposed development activities are not consistent with some of the relevant objectives of the DPA 3:
 - E.3.3.1: To protect the quality of the tidal waters that surround Salt Spring Island.
 - E.3.3.2: To protect fish and wildlife habitat.
- -- The proposed activities are likely to negatively impact the quality of tidal water as well as the fish and wildlife habitat through the changes to the sediment transport and water flow as a result of the sediment supplementation.

ALTERNATIVES

The Director may consider the following alternatives to the staff recommendations:

1. Request further information

The Director of Planning Services 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.

2. Approve the application

The Director of Planning Services may determine that the guidelines are met and approve the application. If selecting this alternative, staff will return with a draft DP for consideration.

Submitted By:	Oluwashogo Garuba, A/Planner 2	April 22, 2025
Concurrence:	Chris Hutton, Regional Planning Manager	May 7, 2025

ATTACHMENTS

1. Site Context
2. DPA Guideline Checklist
3. Geohazard Assessment Report
4. Marine shoreline Characteristics Assessment Report
5. Summary of Baker Beach Shoreline Erosion Mitigation Recommendations Report
6. Environmental Assessment Report
7. DP Delegation Checklist (Staff only)

ATTACHMENT 1 – SITE CONTEXT

LOCATION

Legal Description	LOT 3, SECTIONS 6 AND 7, RANGE 1 WEST, NORTH SALT SPRING ISLAND, COWICHAN DISTRICT, PLAN 46155
PID	009-555-731
Civic Address	239 Quarry Drive, Salt Spring Island, BC
Lot Size	13,840.26m ² 1.38 ha

LAND USE

Current Land Use	R – Rural
Surrounding Land Use	Parks and Reserves 5 - PR (5), Parks and Reserves 6 - PR (6), Rural - R

HISTORICAL ACTIVITY

File No.	Purpose
SS-DP-2005.5	To permit the removal of trees, the installation of stairs and decks to provide access to the beach and the installation of plant material

POLICY/REGULATORY

Official Community Plan Designations	Salt Spring Island OCP No. 434, 2008 Designations: Rural Neighbourhoods - RL; Development Permit Areas: DPA 3 - SHORELINE
Land Use Bylaw	Salt Spring Island LUB No. 355, 1999: Rural (R)
Covenants	Lease of Coal 5023D; Undersurface Rights 70453G; Undersurface Rights 337530G; Easement EC133685; Easement EC133687; Statutory Right of Way EL102374; Statutory Right of Way EL102375; Covenant S137231
Bylaw Enforcement	SS-BE-2005.61 - Setback Siting violation

SITE INFLUENCES

Islands Trust Conservancy	The Islands Trust Conservancy does not have any consideration for the application.
Regional Conservation Strategy	The Islands Trust Conservancy regional conservation plan has a high priority for conservation of eelgrass bed located at the shoreline areas of the proposed development activities.
Species at Risk	None currently mapped
Sensitive Ecosystems	Woodland, Mature Forest
Hazard Areas	Moderate and Low risk steep slopes.
Archaeological Sites	Remote Access to Archaeological Data (RAAD) information indicates there are no archaeological sites on the property. However, there are areas of archaeological potential mapped on the property and therefore the applicant will be sent the Islands Trust Chance Find Protocol and

	provincial guidance on archaeological sites upon development permit review. By copy of this report, the owners and applicant should be aware that unrecorded archaeological material is protected under the <i>Heritage Conservation Act</i> . If such material is encountered during development, all work should cease and Archaeology Branch should be contacted immediately as a <i>Heritage Conservation Act</i> 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	No additional impacts to GHG emissions anticipated as a result of this application.
Shoreline Classification	Low rock/Boulders
Shoreline Data in TAPIS	N/A

Salt Spring Island
OCP Bylaw No. 434, 2008
Development Permit Area 3 - Shoreline (DPA 3)
Guideline Checklist

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.1: All work that takes place below the natural boundary of the sea should be done in a way that minimizes degradation of water quality and disturbance of the substrate.	☐	☒	☐	Thomas R. Elliot, PhD P. Geo, has indicated that the proposed activity is taking place below the natural boundary of the sea – foreshore area. There is potential for disturbance of substrate arising from the proposed sediment deposit and use of machinery.
E.3.4.2: All work that takes place on land within 10 m of the natural boundary of the sea should be planned and carried out in a way that is consistent with the Land Development Guidelines for the Protection of Aquatic Habitat (Appendix 7).	☐	☒	☐	According to the Land Development Guidelines for the Protection of Aquatic Habitat, the deposit of sediments is likely to have negative impact on the fish habitat and the applicant has neither provided information on the likely impacts of this activity nor provided mitigation measure to minimize these potential impacts.
E.3.4.3: Native vegetation and trees are to be retained or replaced to control erosion, protect banks and protect fish and wildlife habitat.	☒	☐	☐	Proposed activity involves removal of invasive species and also the planting of native species of vegetation as outlined in the project description.
E.3.4.4: New roads and septic systems should not be located in this Development Permit Area. If such a location cannot be avoided, then the design and construction of the road or septic system should be supervised by a qualified professional to ensure that the objectives and guidelines of this Area are met	☐	☐	☒	
E.3.4.5: Structures should provide for the thorough flushing of all enclosed water areas and should not restrict the movement of aquatic life or interfere with natural shoreline processes.	☐	☐	☒	The proposed boulders and could potentially interfere with natural shoreline processes such as sediment transportation and therefore not in compliance with this guideline.
E.3.4.6 Open pile or floating breakwater designs are preferred. Solid breakwaters should not be used, except facilities that will accommodate a marina.	☒	☐	☐	Solid breakwater has not been proposed to be used in the application and therefore in compliance with this guideline.

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.7: New boating facilities that provide transient moorage should not be constructed unless access is available to adequate and convenient facilities for pump-out, holding and treating of sewage from boats. New boating facilities should be designed, located, and operated in a way that ensures there will be no discharge of toxic material from boats (for example: fuels, oils, maintenance by-products).	☐	☐	☒	
E.3.4.8: There should be no dredging to create new facilities. Maintenance dredging of existing facilities should be limited to the minimum area necessary to maximize the capacity of the existing facility. Dredging should be done with the use of silt curtains to prevent siltation of adjacent areas.	☐	☐	☒	
E.3.4.9: The shoreline should not be filled in to create additional land, except minor areas of fill necessary to complete the boardwalk section of the Ganges Public Pathway System in Ganges Harbour.	☐	☒	☐	The proposed activity does involve the filling of the shoreline. The proposed activity includes the deposit of 704.5m ² of aggregate materials, over about 300m of shoreline and at an initial height of 1.0 m above existing grade level (Report for Coastal Erosion Mitigation prepared by Thomas R Elliot TRE Environmental Services Pg. 6 & 7).
E.3.4.10: No parking areas should be located over the surface of the water, on land created by fill, or on accretion shoreforms.	☐	☐	☒	
E.3.4.11: Boat launch ramps should be located on stable, non-erosional banks where a minimum amount of substrate disturbance or stabilization is necessary. Ramps should be kept flush with the slope of the foreshore to minimize interruption of geo-hydraulic processes.	☐	☐	☒	

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.12: Preference is to be given to the placement of mooring buoys and floats instead of docks. It is also to be given to the construction of joint use docks rather than individual ones. Multifamily and strata-titled developments are to construct joint use dock facilities. No more than one facility for mooring boats is to be located next to any parcel. An exception could be made if more than one joint facility is to be located next to the common property of a strata development.	☐	☐	☒	
E.3.4.13: Docks should not be located over shellfish beds or lead to the removal of any kelp or eel grass beds.	☐	☐	☒	
E.3.4.14: Large residential docks should be located and designed to avoid the need for shore defence works, or breakwaters. If a bulkhead is to be constructed as a base for a dock, it should be constructed landward of the natural boundary of the sea.	☐	☐	☒	
E.3.4.15: Structures in contact with the water should be constructed of stable materials, including finishes and preservatives that will not degrade water quality.	☐	☐	☒	Boulders have been proposed for the project.
E.3.4.16: Piers should use the minimum number of pilings necessary, with preference to large spans over more pilings.	☐	☐	☒	
E.3.4.17: Piers should be constructed with a minimum clearance of 0.5 m above the elevation of the natural boundary of the sea.	☐	☐	☒	
E.3.4.18: All docks should be constructed so that they do not rest on the bottom of the foreshore at low water levels.	☐	☐	☒	
E.3.4.19: Any plastic foams or other non-biodegradable materials used in construction of floats and docks should be well contained to prevent escape into the natural environment.	☐	☐	☒	

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.20: Residential docks should not extend from shore any further than necessary to accommodate a small pleasure craft. Residential docks should not accommodate boats with a draft greater than 2.2 m or have floats more than 35 m ² total surface area unless more than two parcels have legal access to the dock.	☐	☐	☒	
E.3.4.21: Applications for shoreline stabilization should include a report, prepared by a Professional Engineer with experience in geotechnical engineering, which describes the proposed modification and shows: - The need for the proposed modification to protect existing structures. - Where the modification is proposed to protect new structures, the locations on the property where those structures could be built and not require shoreline modification. - If any natural hazards, erosion, or interruption of geohydraulic processes may arise from the proposal modification, including at sites on other properties or foreshore locations. - The cumulative effect of shoreline stabilization works along the drift sector where the works are proposed. - Whether there will be any degradation of water quality or loss of fish or wildlife habitat because of the modification. - Whether conditions should be incorporated into the development permit to achieve the objectives of this Development Permit Area.	☐	☒	☐	The Geotechnical report states that the purpose of erosion mitigation is to reduce risk of GU 4. The Geotechnical report submitted by the applicant indicated that the building location is safe for the use intended. The proposed erosion mitigation activities could potentially bring about an interruption of the geohydraulic process as a result of the interference with the shoreline sediment transportation. Potential water degradation could occur as a result of increased turbidity from the sediment supplementation, this could also impact the fish habitat negatively by the changes to the sediment transport and water flow as a result of the proposed erosion mitigation activities.

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.22: Shoreline stabilization should be limited to that necessary a. To prevent damage to existing structures or an established use on adjacent upland. b. To prevent damage to a proposed public land use. New upland structures or additions should be located and designed to avoid or reduce the need for shoreline stabilization. Shoreline stabilization should not interrupt natural processes solely to reduce erosion of undeveloped land, except agricultural land.	☐	☒	☐	The Geotechnical report submitted by the applicant indicated that the building location is safe for the use intended. The Geotechnical report identified a high incremental risk of geohazards for GU4.
E.3.4.23: Shoreline stabilization works should use natural means such as vegetative stabilization or protective berms rather than structural solutions such as concrete or large riprap. Applications for structural stabilization works should provide an explanation as to the need for structural solutions. Structural solutions should not be employed in the Shoreline Conservation Designation, unless an existing building is threatened by wave erosion and cannot be protected by other means.	☒	☐	☐	Applicant has confirmed that structural solutions are not considered for the proposed activity. The proposed activity will only include vegetative stabilization/restoration along with energy dissipation by sparsely placing boulders (0.5 – 1.2m boulders, sandstone or low sulphide granite, rounded to sub-rounded (no blast rock)) along the low tide terrace within the foreshore area, these will be placed at intervals and therefore considered to be consistent with this guideline. Geotechnical report provided by applicant indicates that there are no up-slope hazards likely to impact the existing single family dwelling (pg. 11).
E.3.4.24: Materials used for shoreline stabilization should consist of inert materials. Stabilization materials should not consist of debris or contaminated material that could result in pollution of tidal waters.	☒	☐	☐	QEP (Bradley Fossen) indicated that the proposed materials do not consist of debris or contaminated material as the applicant has indicated that the materials for the beach nourishment will be clean undisturbed quarry materials. Therefore, the activities will not consist of materials capable of polluting the tidal waters.

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.25: Rock weirs, groins and jetties should not be constructed. An exception could be made if it can be shown that they are part of a larger system that will reduce the need for overall shoreline modification and that they are intended to prevent damage to existing structures. They should not be proposed to protect new structures.	☐	☐	☒	
E.3.4.26: Bulkheads should only be constructed if no other alternative exists. Where bulkheads are proposed, they should not be located where geohydraulic processes are critical to shoreline conservation. Feeder bluffs, marshes, wetlands, spits or hooks should be avoided. Bulkheads should be located parallel to and landward of the natural boundary of the sea, as close to any natural bank as possible. Bulkheads should allow the passage of surface or groundwater without causing ponding or saturation. They should be constructed of stable, non-erodible materials that preserve natural shoreline characteristics. Adequate toe protection including proper footings and retention mesh should be included. Beach materials should not be used for fill behind bulkheads.	☐	☐	☒	
E.3.4.27: Where revetments are proposed, they should not result in the loss of riparian vegetation or fish habitat. The size and quantity of materials used should be limited to that necessary to withstand the estimated energy of the location's hydraulic action and prevent collapse. Filter cloth should be used to aid drainage.	☐	☐	☒	Thomas R Elliot has indicated that no revetments will be used for the proposed activity.
E.3.4.28: Where this Area includes unique native species dependent on a marine shoreline habitat which have been identified by a qualified professional as worthy of particular protection, their habitat areas should be left undisturbed. If development is permitted in these areas, it should be undertaken only under the supervision of a professional who is qualified in environmental protection, with advice from the Ministry of Environment, the Department of Fisheries and Oceans, or Environment Canada.	☒	☐	☐	The Environmental Assessment report (prepared by Erin Vekic, Corvidae Environmental Consulting Inc.) indicated the project area has some native species dependent on marine shoreline habitat and the project therefore needs to be supervised by a Qualified Environmental Professional or Registered Professional Biologist. This condition has been incorporated into the Draft Permit.

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.29 To assist in the preparation of development permits for larger projects, the Local Trust Committee could request an applicant to provide a report, prepared by a qualified professional with experience in the protection of the natural environment. The report should indicate the type of conditions that should be incorporated into the development permit to achieve the objectives and comply with the guidelines of this Development Permit Area.	☐	☐	☐	This may be considered a “larger project” due to its multiple properties involved and the overall impact to a community recreation area. I will not request this. However, the LTC may.
E.3.4.30: Buildings built over the water surface in areas zoned for commercial and general employment use in Ganges and Fulford Harbour should accommodate continuous pedestrian passage along the waterfront. Developments in Ganges should contribute to the development of the Ganges Public Pathway System, including the seawalk portion, shown on Map 17. New sections of the seawalk should be built in a way that is consistent with existing portions, ensuring barrier-free access along the entire route. For public safety, light fixtures should be provided at a consistent height and design.	☐	☐	☒	
E.3.4.31: Buildings built over the water surface should not exceed the heights allowed in the local zoning bylaw. Building form in Ganges and Fulford harbours should be consistent with the guidelines in Section E.1.6.	☐	☐	☒	
E.3.4.32: Lighting of commercial and general employment developments built over the water surface should be kept to the minimum necessary for safety and visibility. Light fixtures on such sites should be simple and unobtrusive in design. They should be carefully chosen to focus light on the area to be illuminated and avoid spillage of light into other areas. Fixtures should not result in glare when viewed from areas that overlook the sea. Low-glare fixtures with a high cut-off angle should be used. Full-spectrum fixtures are preferred. Neon lighting should not be used outside buildings.	☐	☐	☒	

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.33: Signs on commercial and general employment developments built over the water surface should not exceed the size or total area allowed by local bylaw. Signs on such sites should not move or be audible and should not incorporate lighting that moves or flashes or gives the impression of doing so.	☐	☐	☒	

Geohazard Assessment of Lands

As pertaining to land parcel:

PID 009-555-706

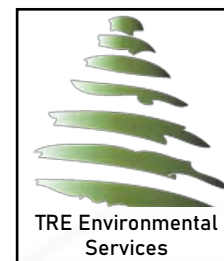
235 QUARRY DRIVE, SALT SPRING ISLAND

LOT 1, SECTIONS 6 AND 7, RANGE 1 WEST, NORTH SALT SPRING ISLAND,
COWICHAN DISTRICT, VIP46155

Report for Coastal Erosion Mitigation

Developed for: Heidi Kuhrt, David Kuhrt (Landowners)
235 Quarry Drive
Salt Spring Island, BC V8K 1J2

Developed by: Thomas R Elliot PhD P.Geo P.Ag
TRE Environmental Services
tom@elliot.org



1. Synopsis

The subject land parcel, with PID 009-555-706 and legal description of Lot 1, Plan VIP46155 (Site), is situated on the lower southwest-facing flank of a slope which terminates to the Salt Spring Island ocean-shoreline in a coastal bluff. The Site is proposed to undergo coastal erosion mitigation development activities within the Shoreline Development Permit Area¹ (DPA 3) of the Islands Trust (IT), which prompted this geohazard assessment to identify mechanisms contributing to erosion of the coastal bluff that would create hazardous conditions for existing single-family dwelling (SFD) and the natural environment.

The Site consists of a moderate-steep benching bedrock slope with a veneer to mantle of stoney sandy loam to loamy sand. There is a veneer of colluvial boulders to stones accumulated below bedrock outcropping. The slope descends from a ~58m above sea level (asl) elevation regional northwest-southeast aligned bedrock ridge. The bedrock ridge is sandstone at elevation and transitions to shale and metamorphic deposits of the Nanaimo Sedimentary Group closer to sea level. At ~10m asl elevation, a metamorphic-rock coastal bluff rises above the natural boundary and is capped with a 2 – 4m thick mantle of gravelly sandy loam.

While there is no ephemeral or permanent surface watercourse observed at Site, the presence of near-surface groundwater is apparent where bedrock outcrops force phreatic water to surface.

The erosion and sediment mass-wasting observed on Site primarily consists of two concurrent processes:

Wave action a culmination of mechanical wave-action, daily sunlight-driven thermal oscillation, and saturating water-spray promotes decomposition and failure of fine-grained metamorphic bedrock situated in the lower 6 - 7m of coastal bluff. This results in toe erosion which, over time, destabilizes the portion of coastal bluff above.

Pore water sufficient pore water pressure below the phreatic surface can acts as a destabilizing factor to overcome cohesion, friction angle and soil weight – entirely independent of toe erosion. While the majority of episodic pore water pressure erosion occurs during the rainy season, localized increases in pore water pressure can also lead to instability during otherwise drought conditions.

Through assessment of the Site subject to Shoreline DPA, Thomas R Elliot PhD P.Geo P.Ag has determined a Low risk of landslide geohazard impacting the SFD. However, there is a High risk of erosional geohazard impacting marine environment in an ongoing and progressive manner.

¹ IT Bylaw 488 - https://islandstrust.bc.ca/wp-content/uploads/2020/10/SS-BL-434_2020-10_OCP_Vol1-2.pdf

This determination is based on geophysical indicators on Site, regional frequency of historic landslide in the area, as well as assessment of Site surficial materials, hydrologic regime, topography and slope failure mechanics, as detailed through this report.

The proposed erosion mitigation development activities do not increase the hazard rating to the existing SFD or occupancy of Site.

2. Introduction

Development activity within the IT is being pursued on the subject land parcel with PID 009-555-706 (the 'Site', see Figure 1 – Appendix 1). The R (Rural) zoned land parcel is located on a southwest-facing flank of a slope which terminates to a coastal bluff ocean-shoreline. The Site is accessible via Quarry Road arriving from the north, at top of the slope, where a private roadway has been established.

This report includes assessment of pre-existing and field-gathered data which informs a geohazard risk assessment and guides proposed erosion mitigation measures.

There exists DPA 3 requirements for non-exempt development activities within 10m landward and 300m seaward of the marine-shoreline natural boundary. Due to land parcel configuration there is currently 10m setback from the natural boundary and existing SFD, resulting in a requirement to obtain DP if proposed erosion mitigation activities are occurring in this setback. Therefore, proposed landward erosion mitigation activities will be considered in context of existing structures, near-surface water management and erosion processes observed at the coastal bluff.

This report is a cumulative evaluation of existing and field-based data toward determining risk to SFD and natural environment associated with geohazards present on Site, and impact of proposed erosion mitigation measures on identified geohazards.

2.1. Author Qualifications

Thomas R Elliot PhD is a Qualified Professional (QP) Geoscientist [# 43570] and Professional Agrologist [# 3045] registered within the Province of British Columbia and in good standing with both professional associations. The QP has 16 years of geohazard, soil science, near surface groundwater and aquifer hydrogeology practice. In the last 9 years, Thomas R Elliot has primarily worked on Vancouver Island and the Lower Mainland of British Columbia in the practice areas of [Geoscience]: Hydrogeology, Geohazard mitigation assessments, Soils/Groundwater management; and [Agrology] Soil science, Agriculture, and Contaminant detection, mitigation and remediation.

3. Scope, Context & Motivation

The proposed development activities are erosion mitigation measures for identified geohazards toward reducing risk to the existing SFD and natural environment on Site.

This report does not determine the specific erosion mitigation activities due to a requirement for comprehensive assessment of near shore environments prior to identification of suitable measures. A comprehensive assessment includes this geohazard report in addition to an evaluation of beach and wave characteristics that will collectively inform suitable erosion mitigation activities through the Marine Shoreline Design Guidelines² that have been broadly adopted by Province of BC and Federal Department of Fisheries and Oceans.

The motivation to produce this report is to provide IT record of existing geohazard conditions on Site; predicted impact of proposed development activities; and if the proposed development activities – in context of existing or novel geohazards – allows for safe Rural-residential use of the land, as intended.

4. Regulatory Context

This section is dedicated to review of applicable Regulations and Acts, as governing legislation for individual and group risk of harm/death related to land use, as well as general permitting and authorization requirements of intended land use and proposed erosion mitigation development activities.

Further, the Department of Fisheries and Oceans would also be requested to conduct review of proposed activities in conjunction with the local IT DPA 3 permitting requirements.

4.1. IT Shoreline DPA

The geohazard assessment for the proposed works is warranted under MA Section 879 (1)(a) and (b) which prompts IT to protect the natural environment and to protect development from hazardous conditions; as specifically governed by IT Bylaw 434, V 2, S E.3 Development Permit Area 3 – Shoreline (enacted through IT Bylaw 488).

IT Bylaw 488, DPA 3 – Shoreline requires development permit applications be submitted for activities occurring 10m landward in areas where the marine environment has been identified as being particularly sensitive to development impacts.

If the proposed erosion mitigation works are to include: breakwater, weir, groin or jetty; bulkheads; placement of fill; removal of trees with diameter greater than 20cm OR removal of vegetation that results in the exposure of a total area of bare soil more than 9m² in area – then there is requirement for IT approved Development Permitting.

² Johannessen, J.¹, A. MacLennan¹, A. Blue¹, J. Waggoner¹, S. Williams¹, W. Gerstel², R. Barnard³, R. Carman³, and H. Shipman⁴. 2014. Marine Shoreline Design Guidelines. Washington Department of Fish and Wildlife, Olympia, Washington. **1** Coastal Geologic Services Inc.; **2** Qwg Applied Geology; **3** Washington State Department of Fish and Wildlife; **4** Washington State Department of Ecology

4.2. DFO Authorization

Pursuant to the *Fisheries Act*, should a requested DFO project review determine that proposed development activities are likely to cause the death of fish and/or harmful alteration, disruption or destruction of fish habitat – then authorization would be required.

Since the development activity (i.e. erosion mitigation measures) are currently undefined, this report is unable to establish whether DFO authorization will be required.

5. Site Conditions: Existing and Field Data

5.1. Slope, Geology, Soils & Surficial Materials

At shoreline, the Site has a ~8 – 12m coastal bluff consisting of siltstone and shale at base and capped with 1 – 2m of surficial material. Above which there are three distinct slope sections of the Site. The lowest is a gently sloping (~5 - 15%) bench above the coastal bluff where the SFD on Site exists, above which is a bedrock-controlled section of 30 – 35%. This second benching section does not exceed the angle of repose for local loamy soils, above which local sediment has increased likelihood of instability. The last slope section crests at a ridge-top and drops in elevation to Quarry Drive.

Soil associations on Site were previously mapped³ in elevation-limited bands which correspond to the changes in slope, which is consequent to change in sea level during glaciation and inter-glacial periods. Starting at present day marine shoreline and ascending up slope, the soil associations present on Site include a typically <2m thick veneer of well drained loam Galiano soil, which are derived from colluvium⁴, on the lowest slope.

At higher elevation, a band of thin <2m veneer of Saturna well draining sandy loam soils with prominent bedrock outcropping ascend to an elevation of ~58m asl. This portion of the land parcel is the source of boulders and other large loose rock masses which form sparse accumulations at lower elevations.

At upper elevations, Haslam well draining sandy loam soils are prevalent and functionally attenuate precipitation as it infiltrates to near surface bedrock.

The bedrock on Site was mapped as belonging to the Nanaimo Group⁵, with sparse details on the surficial rock type in existing records. On Site, the mid and upper elevation presented sandstone at surface, while at lower elevations a change from shale transitioning to siltstone

³ Soil Information Finder Tool.

<https://governmentofbc.maps.arcgis.com/apps/MapSeries/index.html?appid=cc25e43525c5471ca7b13d639bbcd7aa>

⁴ Soils of Southern Vancouver Island. MOE Technical Report 17.

<https://sis.agr.gc.ca/cansis/publications/surveys/bc/bc44/index.html>

⁵ Vancouver Island Geology. https://www.gac-cs.ca/publications/FT_Geology_of_Vancouver_Island.pdf

at coastal bluff occurred. The rock types identified on Site are characteristically found in the Nanaimo Group.

5.2. Surface & Groundwater

There are no identified or observed watercourse on Site. However, accumulation of rainwater and drainage from the access road does present areas of increased surface water discharge to forest floor. These areas are demarcated by accumulation of debris moved by the flow of surface water, increased annual vegetation growth, and an infiltrative surface – the extent of which is related to volume of accumulated rainwater.

Infiltration of each soil association on Site is unrestricted by soil texture, meaning that in areas where water does accumulate at surface there is a low-permeability limiting layer (i.e. bedrock) which prevents continuous downward migration. Instead, as infiltrating water reaches bedrock, lateral dispersion becomes dominant and results in a phreatic surface (i.e. perched groundwater table) establishing within the thin <2m veneer of surficial earth materials.

Where bedrock outcrops to surface, the veneer of surface material thins and ‘pinches out’, resulting in emergence of phreatic water. These ‘weeps’ or ‘springs’ are not to be conflated with artesian conditions, as these waters do not enter a confined aquifer and pore water pressure does not exceed atmospheric pressure. While not individually significant to Site surface hydrology, the irregular bedrock surface accumulates these phreatic weeps to a subsurface non-contiguous perched water table within the veneer of well-draining surface material.

Due to this accumulation mechanism, there is an increased depth of perched water table at lower elevations of the Site. Therefore, it is warranted to conduct specific geohazard assessment of areas where surficial materials convey the accumulated depth of perched water table due to an increased pore water pressure forcing erosion at the coastal bluff.

6. Geohazard Assessment

This landslide risk assessment was largely conducted according to the Engineers and Geoscientists of BC document *Guidelines for Legislated Landslide Assessments for Proposed Residential Developments in BC*⁶. The landslide risk assessment methods that were utilized includes all aspects of landslide hazard analysis, such as regional frequency and historic evidence to inform current and future landslide hazards; as well as evaluation of hazard likelihood, and consequence of landslide impact, to formulate a relative risk matrix which is comparable with levels of landslide safety adopted by the approving jurisdiction.

⁶ EGBC Guidelines for Legislated Landslide Assessments for Proposed Residential Developments in BC. <https://www.egbc.ca/getmedia/5d8f3362-7ba7-4cf4-a5b6-e8252b2ed76c/APEGBC-Guidelines-for-Legislated-Landslide-Assessments.pdf.aspx>

The assessment was restricted to the Site, as indicated in Figure 1, and specifically includes bedrock of the coastal bluff.

6.1. Investigation of Historic Failures in Area & Seismic Compliance

A review of historic aerial imagery was conducted on the surrounding area to determine frequency and spatial distribution of natural and induced landslides.

There were no mid-slope landslide scarps, transport paths, or deposit zones identified in proximity to Site or on similar colluvium slopes within the region within historical aerial imagery.

Through this lack of landslide evidence, and the existing evidentiary record of significant seismic events over the past ~500 years, there is no suggestion that natural slopes on Site would fail under seismic disturbances.

For example, a seismic event occurred at 10:13 a.m. on Sunday June 23, 1946 which measured at 7.3 on the richter scale, and was considered a significant seismic event which exceeds the 2% in 50 years magnitude. Therefore, as the Site and surrounding slopes exhibits no evidence of displacement consequent to ground motion, this historic record demonstrates compliance with seismic design at existing or proposed slopes of lower angle.

The presence of loose boulders (up to 1.2m in diameter were observed) on mid-slopes above the non-habitated (i.e. driveway, not SFD) lower slope on Site does suggest an increased likelihood of injury or death of an individual (i.e. consequence) while posing no likelihood for harm to the natural environment. However, the likelihood co-location of an individual within the increased consequence pathway is very remote and therefore does not contribute to overall risk considered herein.

6.2. Field Investigation

On Sept 17th, 2023 Thomas R Elliot PhD P.Geo P.Ag attended to Site as a QP with declared competency in geohazards, hydrology and soil science to evaluate the geohazards, ground and surface waters present on Site.

Field data was acquired according to, and through the implements noted in Table 1 below.

Table 1 – Summary of Field Work

Project ID:	2023.900	Project Name:	Baker Beach Erosion Mitigation
Project Type:	Erosion Mitigation (Geohazard)	Lead Investigator:	Thomas R Elliot PhD P.Geo P.Ag
Client:	Aurora Professional Group	Client Contact:	Brad Fossen P.Eng
Site Boundary Type:	Land Parcel	Site Common Address:	235 Quarry Drive

Site Legal Description:	VIP46155, LOT 1	Site PID #	009-555-706
Site Land Use:	Rural residential	Site Condition:	Secondary growth
Development Activity:	Erosion mitigation measures	Project Stage:	Assessment
DPA:	DPA3 – Shoreline	Provincial/Federal:	DFO review
Equipment Used:	- Clinometer - Compass - Engineer's tape - GPS tracking - Field soils kit - Range finder - Shovel and hand tools - Soil probe - Camera		
Summary of Site Activities:	• Site and Soils Assessments • Evaluate Terrain Stability & Geohazard • Document visible erosion mechanisms, ground and surface water		

6.3. Geohazard Units

Based on self-similar geophysical and hydrologic characteristics of the Site, a number of Geohazard Units (GU) were defined by the attending QP. Each GU has been assigned a respective Geohazard, or relative likelihood of a landslide event occurring, based on the documented geophysical and hydrologic characteristics.

The incremental change in Geohazard within a GU consequent to the proposed Development Activity is evaluated by the QP in order to arrive at impact of said Development Activity. The subsequent QP interpretation and recommendations are intended to fulfil requirements of the IT Shoreline DPA.

6.4. Wave Action and Erosion Hazard

Along the coastal bluff in proximity to Site there were numerous small-scale mass-wasting scarps consequent to erosion. Of those observed on Site, those occurring at base of the coastal bluff also had ongoing erosion of the sediment cap at top of the coastal bluff – suggesting a classic toe erosion mechanism. The bedrock toe erosion is driven by a combination of mechanical factors (e.g. wave-impact, thermal expansion, wedging/sediment jacking of fractures, etc.) and chemical factors (e.g. dissolution of binding carbonates, salt/crystal growth, etc.). The most prevalent of which appears to be wave-impact, which – due to orientation of metamorphic rock laminae and wave-direction – peels the friable bedrock during storm events.

Otherwise, erosion occurring at mid or upper portion of the coastal bluff was based in surficial material – the mechanism of which is explored in the Groundwater and Erosion Hazard section of this report.

6.5. Groundwater and Erosion Hazard

There exists a transient erosion hazard consequent to high pore water pressure conditions within the veneer of surficial Galiano soils at base of the slope on Site, as a component of the failing coastal bluff.

Under adverse climatic conditions, this hazard would result in a limited mass wasting failure which would mobilize and entrain the full depth of surficial material. With standard climatic conditions, this mechanism is not as likely to result in such mass failure – instead, punctuated failure events will see progressive steepening and erosion at base of the surficial material cap atop the coastal bluff. This steepening will progress until a larger landslide failure event re-establishes at angle of repose – migrating the erosion front landward, toward the SFD.

Therefore, since the erosion of surficial material – over the long term – could impact the SFD, there are recommended mitigation measures which can be found in Section 7 of this report.

6.6. Hazard Rating

There was no pre-existing geohazard rating established through QP assessment and reporting, to the awareness of the author at time of writing.

The Site natural slopes were less than the angle of repose for moist gravelly sandy loam to loamy sand colluvium earth materials (35 - 45% or 19° - 24°)⁷ above which slope-failure becomes more probable.

The landslide hazard rating for the entire Site was lower due to strong bedrock control at upper elevations, with shallow depth to bedrock for the remainder of Site, and therefore limited surficial material which would mobilize.

However, the surface sediments capping the coastal bluff have an increased erosional hazard due to presence of a perched water table in the lower slopes.

Consequent to these observations and slope gradients, GU on Site were assigned a VERY LOW to LOW hazard ratings outside of the coastal bluff, which classified as HIGH.

As per Appendix 2 – Geohazards and Risk, the GU defined on Site are summarized in Table 2, below.

Map imagery of GU delineation is found in Appendix 2 and is a recommended reading accompaniment to this section.

⁷ H. Al-Hashemi, O. Al-Amoudi. A review on the angle of repose of granular materials. Powder Technology Volume 330, 1 May 2018, Pages 397-417. <https://doi.org/10.1016/j.powtec.2018.02.003>

Table 2 – GU Hazard Rating and Risk

Geohazard Unit	Hazard Rating and Risk			
	Slope Characteristics	Hazard Rating	Consequence	Incremental Risk Rating
1	Cv Br benching ± 35 - 40%	VERY LOW	LOW	Very Low
2	Cv / Br planar ±25 - 35%	LOW-MODERATE	LOW	Very Low
3	Cm planar ±5 - 15%	VERY LOW	LOW	Very Low
4	Cv / Br planar ±150 - 180%	HIGH	HIGH	High

Geohazard Shorthand Notation

Br – Bedrock

C – Colluvium

A – Aeolian

L – Lacustrine

GF – Glaciofluvial

GT – Glacial till

M – Marine

v – veneer (.1 – 2m)

m – mantle (2 – 5m)

b – blanket (>5m)

/ - overlying

| - equal surface exposure

benching – slope interrupted by bedrock

planar – linear slope

6.7. Consequence of Geohazard Event

The Consequence of a geohazard incident was evaluated by the QP based on downslope receptors, predicted size and volume of geohazard event, and a simplistic Farböschung assessment – as detailed in Appendix 2 – Geohazards and Risk.

The most active failure mechanism on Site is punctuated landslide erosion of surficial materials at the coastal bluff (GU 4). The mobilized material would deposit directly to the marine environment, resulting in HIGH consequence.

Outside of which, the second likely failure mechanism on Site would be a mid-slope (GU 2) failure within a colluvium filled relic bedrock draw where a perched water table decreases shear resistance. However, due to the veneer of surficial material in the initiation area, any landslide would impact a limited area due to lack of transportable surficial materials from the initiating area or on low gradient receiving slope (GU 3). The low gradient receiving slope has sufficient width to retain mobilized material, resulting in a LOW consequence.

Summarily, the most likely geohazard results in a HIGH consequence while the remainder of Site has a LOW consequence.

6.8. Incremental Risk Imposed by Development Activity

The purpose of proposed erosion mitigation development activities is to reduce the geohazard risk of GU 4. This report has identified the active failure mechanisms resulting in erosion of the coastal bluff, from which mitigation measures can be evaluated.

6.9. Suitability of Lands for Use Intended (SFD)

There are no up-slope hazards likely to impact the SFD location.

While GU 4 has a High risk rating, the progressive-over-time nature of failure mechanisms for this area would provide opportunity to conduct more specific geotechnical review, and/or implement mitigation or emergency measures prior to impacting the SFD and ~3m of surrounding liveable space.

With no off-Site hazards and a LOW likelihood of failure above an existing SFD – the building location is **SAFE FOR THE USE INTENDED** (Residential Single Family Dwelling).

7. Geohazard Mitigation Recommendations

Due to the HIGH incremental risk of geohazards for GU 4, there are mitigation recommendations intended to reduce the risk to LOW.

7.1. Erosion and Sediment Control

All proposed activities will require Erosion and Sediment Control planning which meets IT regulatory requirements. Any such plan should be developed toward acquiring a Development Permit from the IT for the proposed activities and shall be submitted alongside any additional required paperwork.

There are two identified erosion mechanisms:

Pore water sufficient pore water pressure below the phreatic surface can acts as a destabilizing factor to overcome cohesion, friction angle and soil weight – entirely independent of toe erosion. While the majority of episodic pore water pressure erosion occurs during the rainy season, localized increases in pore water pressure can also lead to instability during otherwise drought conditions.

Mitigation options include, but are not limited to:

- Annual monitoring of erosional regression of surficial materials at the coastal bluff;
- Groundwater intercept and redirection to non-erosive receiving environment;

- Bioengineering and selective planting of native species toward increasing shear strength of surficial materials;
- Re-contour of the surficial materials to allow for emergence of groundwater without erosion;
- Selective removal of shoreline trees deemed hazardous due to toe erosion.

Wave action a culmination of mechanical wave-action, daily sunlight-driven thermal oscillation, and saturating water-spray promotes decomposition and failure of fine-grained metamorphic bedrock situated in the lower 6 - 7m of coastal bluff. This results in toe erosion which, over time, destabilizes the portion of coastal bluff above.

Mitigation options include, but are not limited to:

- Monitoring rate of erosion so as to establish a predictive timeline of coastal bluff regression;
- Bioengineering and selective planting of native species toward dissipated wave-impact on coastal bluff face;
- Wave deflection within intertidal area;
- Beach nourishment to dissipate wave energy;

The suitability, efficacy and ease of implementation and maintenance of these recommended mitigation options should be carefully considered in context of Marine Shoreline Design Guidelines which will require an integrated assessment of geohazards (this report), wave and beach dynamics, and ecosystem characteristics.

8. Safety and Suitability

This report has been prepared in accordance with standard geotechnical hazard assessment practices, and at the expense of Heidi and David Kuhrt. Thomas R Elliot PhD P.Geo P.Ag has not acted for or as agent of the Islands Trust in the preparation of this report.

Thomas R Elliot PhD P.Geo P.Ag certifies that the land is safe for the use intended (Residential Single Family Dwelling and Driveway) if the land is used in accordance with the conditions specified in this report.

Thomas R Elliot PhD P.Geo P.Ag acknowledges that this report may be used by the Islands Trust as a precondition to the issuance of a permit and that this report and any conditions contained in this report may be included in a restrictive covenant and filed against the title to this subject property.

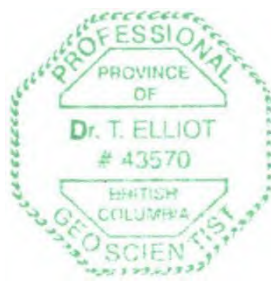
9. Summary

The land parcel with PID 009-555-706 situated on the southwest flank of a bedrock ridge forming a benching slope down to a coastal bluff is proposed to undergo permissible Development Activities within the Shoreline DPA of the IT.

Through assessment of these DPA requirements, Thomas R Elliot PhD P.Geo P.Ag as a QP capable of conducting the works, has determined a **High Risk of erosion geohazard** impacting the local environment. This determination is based on geophysical indicators on Site and regional frequency of historic landslide in the area.

The proposed development activities do not increase the Risk, however specific design of erosion mitigation measures will have to be completed prior to establishing a post-development Risk. There are sufficient pre-existing long term erosional processes on Site to warrant mitigation measures.

Qualified Professional of Record	THOMAS R. ELLIOT PhD P.Geo, P.Ag Name	 Sign

Thomas R Elliot PhD P.Geo. P.Ag.

Digital reproduction, original available upon request.
Date: November 6, 2023

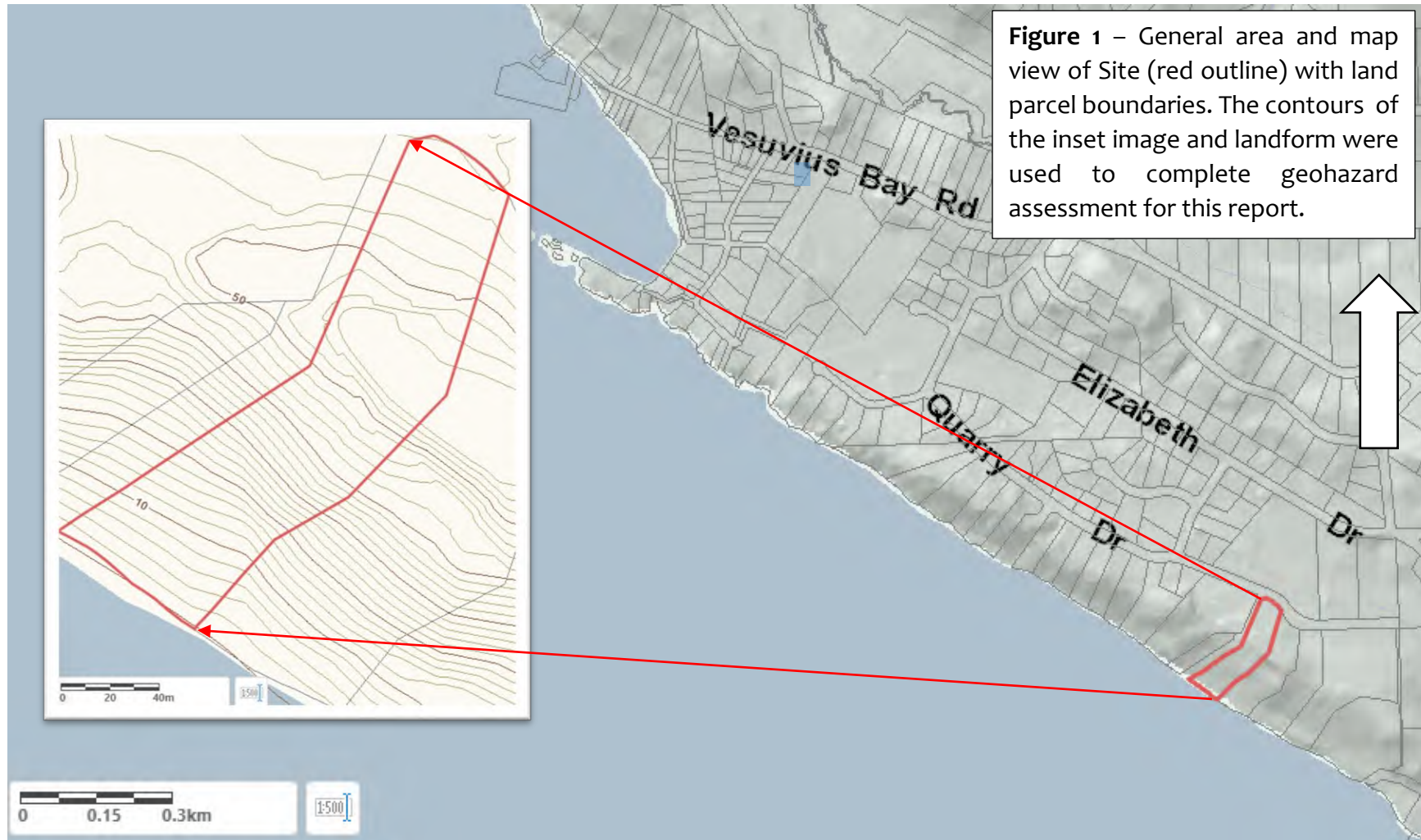
10. Closure and Limitations

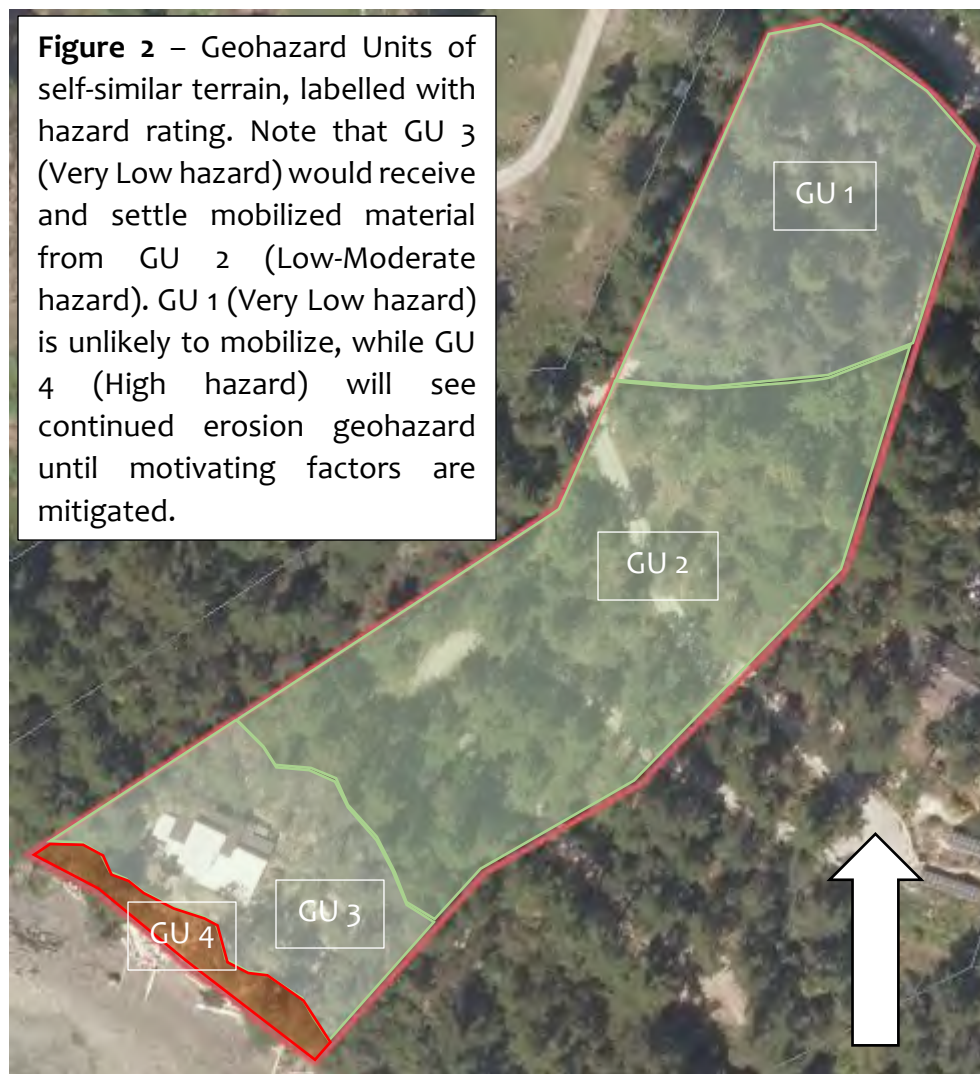
The QP signatory to this assessment and report assures accuracy of existing and field observation, and evaluation of technical geohazard according to best practices of the Engineers and Geoscientists of BC. The content of this report are applicable to the subject land parcel, and specifically the Site as defined in this report. Any extension of the evaluation to areas outside of the defined area assessed are not valid.

The report has been conducted according to guidelines and reporting standards of similarly qualified professionals, given similar time and budget. At time of writing, the report meets due diligence and investigatory reporting requirements to provide QP recommendations with declared competency in the subject areas. Therefore, the author of this report does not maintain liability insurance for actions taken based on the reporting, and only accepts error and omission liability up to the value of this report. The receipt, utilization and any planning, further studies or development actions undertaken by the recipient of this report are based on their acceptance of their own liability therein.

Appendix I

Maps and Figures





Appendix II

Geohazards and Risk

Geohazards

This assessment is partially based on local historic rates of landslide failure. The rating hazard of failures occurring in a given area under the classification system shown in Table II_a, below. By determining the likelihood of historic failures based on spatial density, the number of failures per unit area can be predicted. The likelihood of historic failures is determined through review of historic aerial imagery and general area observations while on the way to or from Site.

By establishing failure spatial density in the local area, in conjunction with Table II, the hazard rating can be estimated for areas undergoing development activities that impact terrain stability.

The hazard ratings were defined based on pre-existing practice by geoscientists and engineers for the natural resources sector, and adapted to best suit development activities governed by responsible municipal partners toward meeting those partner-organization risk tolerance policies.

Please note that, differing from resource sector terrain stability assessments, this evaluation of hazard includes failures smaller than 0.05 ha area (initiation, transport and deposit area). This is consequent to resource sector activities, and typically remote locations, being more tolerant of small-scale geohazard events. For this location, due to proximity to populated areas, and responsibility to meet municipal risk tolerance policies, the total area of a failure may be less than 0.05 ha in order to contribute to the hazard rating.

Table II_a: Definitions of hazard categories

Hazard Category	# of failures per geohazard unit size
VERY HIGH	>1 failure per 2 ha
HIGH	1 failure per 2 to 10 ha
MODERATE	1 failure per 10 to 50 ha
LOW-MODERATE	1 failure per 50 to 250 ha
LOW	1 failure per 250 to 1250 ha
VERY LOW	<1 failure per 1250 ha

Once the natural hazard of landslide for the area has been established, the probability of at least one failure occurring in a geohazard unit can be determined from Figure II_A.

Figure II_1 is based on the assumption that the probability of a specified number of failures occurring within a polygon is related to the size of the polygon by a cumulative normal distribution.

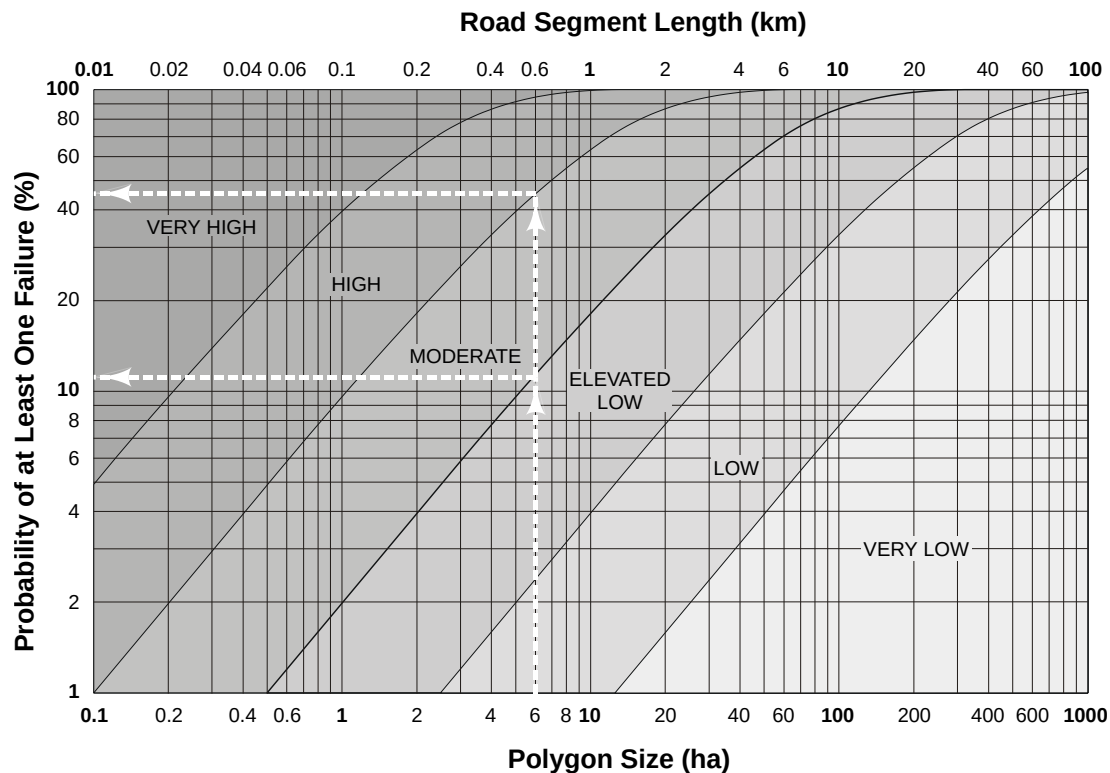


Figure II_1 – Probability of at least one failure based on a geohazard unit (GU) assessment area size or road length. This figure has been adopted from BC Forestry practices and is based on a single forestry harvest cycle, typically lasting 60 years within Coastal BC.

Figure II_1 has an example sketched with dashed white lines. The example indicates probability of failure for a **6 ha** geohazard unit area with a **moderate** hazard rating. The probability of at least one failure occurring within the assessed geohazard unit area over the period of one forestry harvest cycle is between ~12 – 45%.

Consequence

Simplistic Farböschung Evaluation

Whether or not a Site will be impacted by a geohazard is a component of determining consequence to potential landslide failures and/or debris flows. A simplistic assessment of transport and deposition zone locations can be accomplished through a 'Farböschung' evaluation. This is best exemplified through Figure II_B, which demonstrates how a sliding

mass (block on right hand side) has potential to transport some distance from point of initiation based on a simplistic assignment of Farböschung angle.

For this assessment, a Farböschung angle of 45% was used based on heuristic practice for these coastal environments and gravelly loam surficial material. By standing on Site at highest point of initiation, the QP was able to establish the approximate run-out distance to edge of the deposit zone.

A more Site specific example is provided in Figure II_C, which shows a benching bedrock terrain where a thin veneer of surface material is mobilized, and has limited transport and deposit distances based on the Farböschung angle.

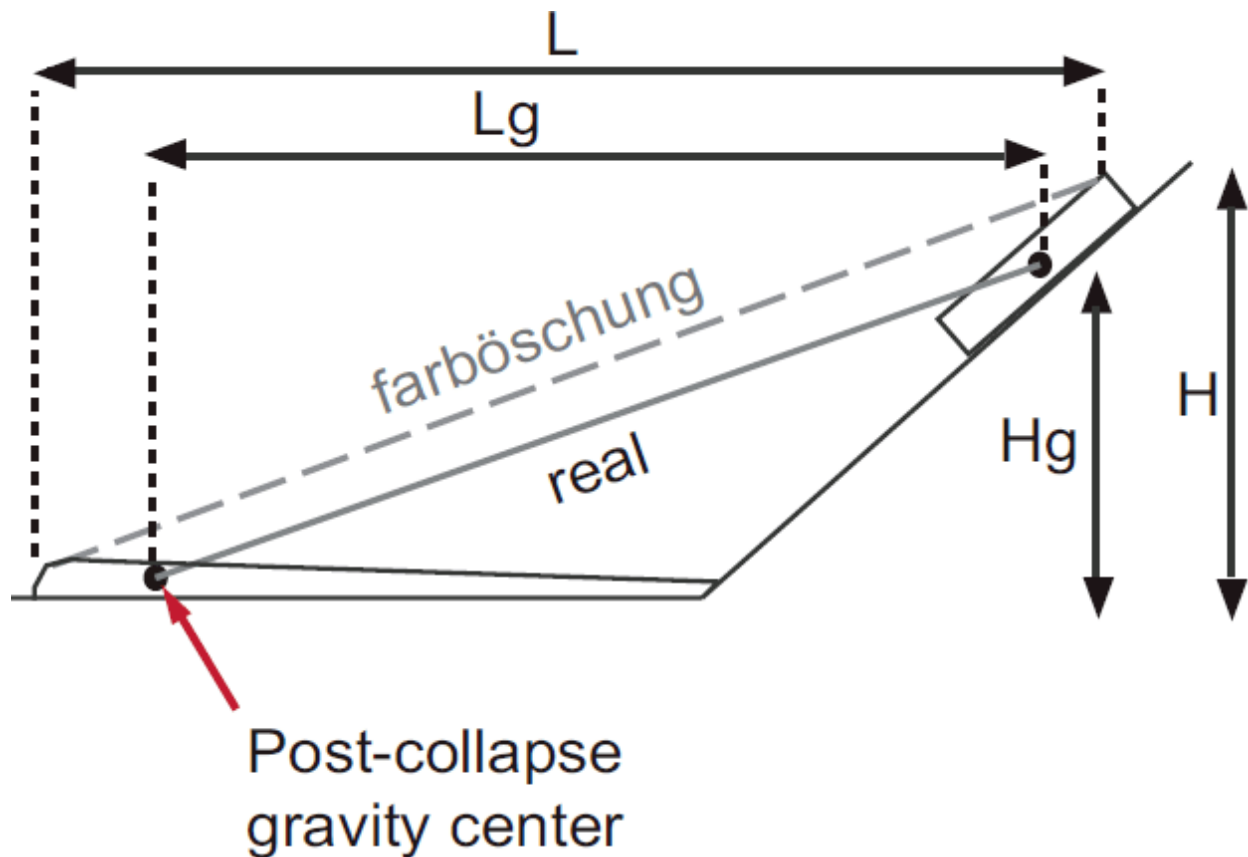


Figure II_B – Farböschung angle functionality for sliding masses on a slope. The specific mathematics of which are not supplied here for brevity.

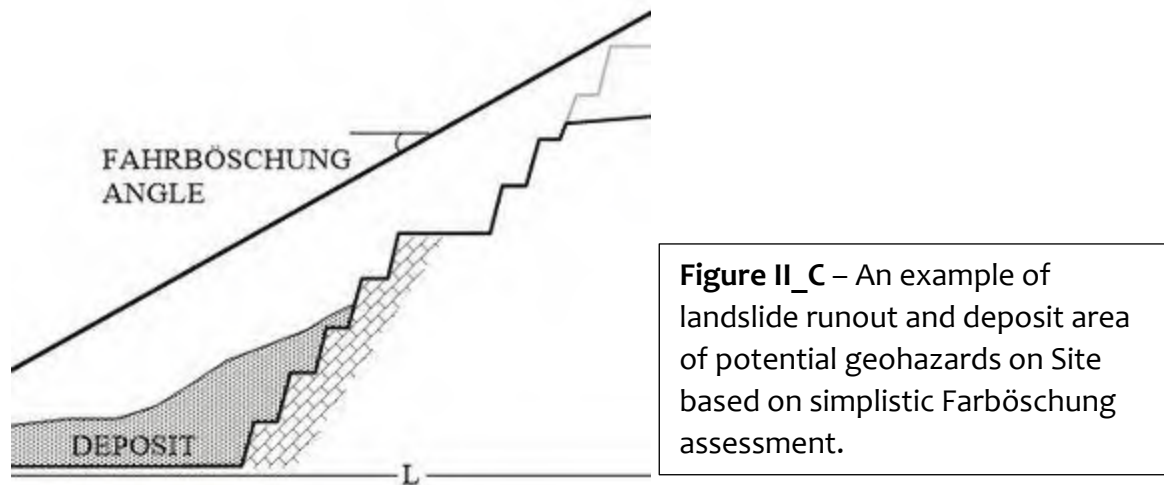


Table II_b: Consequence

Consequence	Criteria
HIGH	Landslide material would directly enter fish habitat (stream, lake, or marine waters); water intake for domestic consumption; jeopardize lives of the public; impact major public infrastructure; or other property owner. Landslide would enter non-fish stream within 500 m of fish habitat.
MODERATE	Landslide material enters non-fish stream > 500 m and < 3000 m from fish habitat, OR there is a slope < 20% for < 100 m below landslide to fish habitat; potable water intake; a public area; or other property owner.
LOW	Run-out slope < 20% for 100-200 m below landslide deposit area. At time of event, suspended sediment may reach fish habitat; potable water intake; public area, or other property owner
VERY LOW	Run-out slope < 20% for > 200 m below landslide. Landslide material is unlikely to reach stream or potable water intake at time of event. A landslide would not be a public safety concern; would not impact any infrastructure nor other property owner.

Post Development Activities Summary Table of Geohazards, Consequence and Risk on Site

Risk

		GEOHAZARD				
		VERY LOW	LOW	LOW - MODERATE	MODERATE	HIGH
GEOMORPHIC CONSEQUENCE	VERY LOW					
	LOW	1	3	2		
	MODERATE					
	HIGH					4

Assessment of Marine Shoreline Characteristics

As pertaining to areas seaward of land parcels:

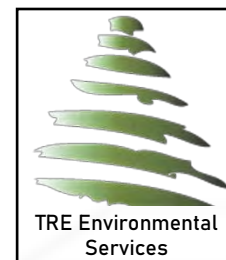
235 Quarry Drive PID 009-555-706
239 Quarry Drive PID 009-555-731
434 Baker Road PID 009-555-781
431 Baker Road PID 000-014-656

SALT SPRING ISLAND

Report for Coastal Erosion Mitigation

Developed for: Aurora Professional Group
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1. Synopsis

This assessment of marine shoreline was conducted using field, analytic and existing data to determine wave and sediment dynamics associated with erosion management of the coastline, as well as transport control of mobile sediments. These determinations are used to inform size distribution for sediment suitable for beach nourishment methods of erosion mitigation and transport control.

There are ~670m of hard armouring, or ~28.5% of the 2,350m shoreline within the drift-cell. Within the study area, there are ~70m of riprap and concrete, creating a ~14% hard-armoured coastline within the Site. This amount is considered to be moderate, where further erosion mitigation hard armouring would be discouraged by regulatory authorities.

There were two zones with distinct sediment size characteristics spread across the Site, for which there were sediment/gravel mixtures identified as being suitable for beach nourishment.

Lastly, the suitability of erosion mitigation and sediment transport control in context of Site factors and dynamics was evaluated. This evaluation encourages both continued monitoring and beach nourishment as suitable activities to pursue as part of erosion mitigation and sediment transport control.

2. Introduction

Landowners of four parcels adjacent to Baker Beach on Salt Spring Island have observed increased occurrence of punctuated erosion (e.g. landslide and landslip/tree-topple) and progressive erosion (e.g. plucking, thermal-jacking, or overland flow sediment mobilization). These landowners requested an assessment of the ~40m x 600m Site (Figure 1 – Appendix A), including existing foreshore and backshore characteristics, which informs sediment and wave dynamics. The assessment of foreshore and backshore dynamics will generate a drift-cell model for the Site. The drift-cell model will be used to evaluate suitability of proposed erosion mitigation measures at the end of this report.

This report is applicable to the foreshore and backshore seaward of the following land parcels:

Common Address	Parcel Identification
235 Quarry Drive	PID 009-555-706
239 Quarry Drive	PID 009-555-731
434 Baker Road	PID 009-555-781
431 Baker Road	PID 000-014-656

This report was written using existing and field-based data that provides spatial layout of the Baker Beach foreshore and backshore, generalized coastal zone sediment budget, beach particle size assessment and a drift-cell model summary.

2.1. Author Qualifications

Thomas R Elliot PhD is a Qualified Professional (QP) Geoscientist [# 43570] and Professional Agrologist [# 3045] registered within the Province of British Columbia and in good standing with both professional associations. The QP has 16 years of geohazard, soil science, near surface groundwater and hydrology. In the last 9 years, Thomas R Elliot has primarily worked on Vancouver Island and the Lower Mainland of British Columbia in the practice areas of [Geoscience]: Hydrogeology, Geohazard mitigation assessments, Soils/Groundwater management; and [Agrology] Soil science, Agriculture, and Contaminant detection, mitigation and remediation.

3. Standards of Practice for Marine Shorelines Management

The marine shorelines of British Columbia are subject to overlapping jurisdictional claims from municipal, provincial and federal government agencies. Despite the regulatory oversight, there are few guidance documents produced from Canadian sources that demonstrate best management practices from an integrated perspective which includes geophysical, ecologic and social/land use.

Some governmental agencies, such as Islands Trust (IT), who have adopted customized or standard guidance documents from Washington State Department of Fish and Wildlife¹. Other non-governmental organizations have supported investigatory methods for detecting vulnerabilities and existing health status of shoreline environments².

This Assessment relies on existing guidance and approach methods that have been referenced by governmental agencies as being suitable for development planning and implementation practices within the BC coastal marine environment. Specifically, the determination and classification of marine shoreline and coastline dynamics, and consequentially which mitigation opportunities are suitable – is from the Marine Shore Design Guidelines³. Additionally, assessment and mitigation pathways identified have been considered in context of a Coastal Marine Strategy for British Columbia Policy Intentions

¹ Your Marine Waterfront (Canadian Edition): <https://islandstrust.bc.ca/document/your-marine-waterfront-guide-2023/> Accessed 11/2023.

² BC Parks Shoreline Sensitivity to Sea Level Rise Model: User Guide: https://a100.gov.bc.ca/pub/acat/documents/r42825/BCPark_SS_user_guide_1403632673820_3629261453.pdf

supported by the SeaChange Marine Conservation Society (<https://seachangesociety.com/resources/>). Accessed 11/2023.

³ Washington Department of Fish & Wildlife Marine Shore Design Guidelines: <https://wdfw.wa.gov/publications/01583>. Accessed: 09/2023

Paper issued in December 2022⁴. In this report, the six outcomes identified in the Intentions Paper informed the assessment and mitigation options considered.

4. Scope, Context & Motivation

The purpose of this assessment is characterization of shoreline that will inform suitable marine coastline erosion mitigation measures which can be pursued on Site.

The motivation for this evaluation is to use sediment analysis and a drift-cell model in conjunction with reporting on ecology and geohazards to guide planning of erosion mitigation measures. The planning will be provided in subsequent reporting.

Additionally, there exists IT DPA 3 – Shoreline requirements for non-exempt development activities within 10m landward and 300m seaward of the marine-shoreline natural boundary. Therefore, if erosion mitigation recommendations are to occur within this DPA 3 area, there is a requirement to conduct characterization of existing conditions alongside demonstrably supportable recommendations for erosion mitigation.

The motivation to produce this report is to provide IT record of existing shoreline conditions, in partial or completion of IT DPA – 3 Shoreline requirements.

5. Shoreline Terminology, Site Delineation and Erosion Mechanisms

The shoreline area, as per IT DPA 3 definition, consists of a 300m coastal zone from the coastline, above which it extends into 10m of the uplands.

The Site includes the area of Baker Beach, as bracketed by public access, in addition to self-similar shoreline at both extents for a total ~600m of coastline (Figure 1 – Appendix A).

To best align this document with existing map products of shoreline delineation by IT, such as [Saltspring Is. North Map 1 of 3: Distribution of Shoreline Types](#), Figure 3 was generated with identical classification and colour scheme.

Of the erosion mechanisms identified on Site from previous geohazard reports, the following are of note:

- Pore pressure/Groundwater Seepage from surficial soils, reducing cohesion and resulting in landward progression of the crest through continuous or punctuated mobilization of sediment.

⁴ A Coastal Marine Strategy for British Columbia. <https://engage.gov.bc.ca/app/uploads/sites/121/2022/12/Coastal-Marine-Strategy-Intentions-Paper.pdf>. Accessed 11/2023.

- Toe-erosion of bedrock, or undercutting of shoreline sediment, which decreases stability of all materials above, often resulting in narrow failures from crest to base of coastal bluff.
- Landslip/Tree-topple is occurring on Site wherein trees near, or overhanging, the coastal bluff mobilize consequent to soil creep, pore pressure or toe-erosion. These failures result in a larger volume of surficial sediment during failure than toe-erosion instability reaching the crest. Consequent to root reinforcement or friability of bedrock, landslip is likely to mobilize underlying shale and siltstone.
- Landslide is a moderate to large scale failure event which can mobilize bedrock and overlying surficial sediment. Coastal landslides are often consequent to a history of toe-erosion, bedrock fracture and an increase in pore pressure (i.e. saturated soils & rock-fractures during a storm event) which has destabilized the coastal bluff in that area.

6. Shoreline Characteristics and Dynamics

This section presents details on the existing composition and quantifiable characteristics of the assessed marine shoreline. The following is a summary table of global characteristics, acquired from previous geohazard reporting⁵, while details of each area are reviewed in subsequent relevant sections. Field assessment methods provided in Appendix A of this report.

TABLE 1. GENERAL SHORELINE CHARACTERISTICS FROM PREVIOUS REPORTING

Geology & Geomorphology	
Geology	Siltstone to mudstone in upland, sandstone within coastal zone, of the Nanaimo group – which is an elevation-banded sedimentary and metamorphic rock assemblage.
Surficial Sediment	Well to rapidly drained sandy loam to loam belonging to the Galiano soil association is present at the coastline.
Landslide/Landslip activity frequency	Concentrated within areas of accelerated erosion, with a Site wide occurrence of 1 per ~40m of coastline.
Shore & beach type and beach features	<u>Shore type</u>: Rocky coastline bluff with variable elevation bedrock resulting in low rock/boulders, boulder/cobble and sea cliff natural coastline. There are structurally altered (i.e. hard armour) coastline up-drift, within and downdrift of the assessment area. <u>Beach type</u>: The presence of bedrock within the coastal bluff and foreshore results in the Site being typified as a high tide reflective beach face fronted by intertidal rock flats (i.e. bedrock low-tide terrace).

⁵ Geohazard assessment for each land parcel, completed by TRE Environmental Services under separate cover. For reference and details, please refer to those reports.

	<i>Features:</i> There exist two bedrock outcropping, nearly 40 – 50m from coastline at seaward extent of the low-tide terrace, which are in line with two ridges descending from uplands and consistent with the benching morphology of this shoreline geology.
Ground and Surface Water	
Watershed conditions	Single benching slope above the assessment area results in small-scale flow accumulations. There are no identified streams, albeit there was some evidence of overland flow associated with high volume precipitation events.
Groundwater	Limited infiltration to bedrock results in perched water table within the veneer to mantle of surficial materials. Perched water table causes increase pore water pressure at soil interface with air, decreasing soil stability.

6.1. Hard Armouring

At respective distances of 115m and 490m northwest of Site, there are ~200m of groyne and ~300m of coastline-riprap hard armouring installations. Of these anthropogenic foreshore modifications, the groynes may be encouraging some sediment accumulation along the beach face by diffracting wave energy, albeit that poor installation has resulted in low sediment retention; while the riprap has reduced kinetic wave action on the shale and siltstone coastline, reducing supply from upland to the local coastal zone sediment system.

Down-drift from Site is ~80m of coastline-riprap on a sediment bar at the mouth of Booth Inlet. This hard-armouring restricts both progressive and punctuated sediment mobilization from the area by constricting flow to a narrowed channel, thus reducing fine-sediment supply to local shoreline.

There are three additional sections of hard armouring within Site: coastline-riprap placed at the northwest (10m) and southeast (30m) CRD access points, as well as along the coastline of 241 Quarry Rd (30m) – creating a ~14% hard-armoured coastline within the Site.

In total, the ~2,350m long drift-cell (see Section 6) – extending from Vesuvius Bay to the mouth of Booth Inlet – has ~670m of hard armouring, or ~28.5% of the local area shoreline.

6.2. Backshore

Indicators of a backshore are the presence of accumulated fine sediment and clasts, large littoral debris, sparse vegetation, and an area that is dry under normal conditions but exposed to wave action during storm events coinciding with high-tide. With this criterion, the backshore on Site was determined to have limited extent, often less than 1m in width and non-existent in some areas where there is continuous bedrock outcrop to the coastal bluff.

The backshore does not have sufficient width to create dunes or other geomorphic sediment accumulations. However, there exists minor clastic terrace deposits above the wrack line in

sections of backshore that were contiguous with the beach face. There is sparse littoral and flotsam debris accumulated within the backshore, which is in contrast with the common to frequent presence of accumulated debris along up-drift sections of shoreline which have been historically armoured by rock groynes.

Sediment supply from uplands is principally delivered to the backshore as progressive erosion of coastline bedrock bluff. Sediment deposits from punctuated toe-erosion, landslip and landslide failures were also present in the backshore – some of which hosted perennial salt-tolerant vegetation, suggesting a multi-year existence. The persistence of these deposits through prior year storm-season (i.e. high wave energy and storm events) is a component of continuous sediment supply to Baker Beach.

6.3. Foreshore

The bedrock transition from shorise to a $\sim 3^\circ$ gradient low-tide terrace is notably marked by the presence of two bedrock rises which present as ‘barrier islands’ for a portion of Baker Beach (see Figure 1). Under high tide conditions, these outcrops are fully submerged. The low-tide terrace is a wave-cut rock platform in siltstone and shale bedrock. The wave-cut platform has been created over the most recent eustatic sea level, in existence since the end of the last ice age $\sim 8,000$ bp.

Within the low-tide terrace there is a mixture of sediment and bedrock coverage, as shown in Figures 3 & 4 – Appendix A. The accumulation of sediment is facilitated by undulating bedrock surface, with depressions readily infilled. The infill presented cobbles and gravel surface armouring, with fine sediments captured and retained underneath. There is a typical progressive reduction in the amount of mobile gravel toward the seaward extent of low-tide terrace.

The 10 – 25m width of $\sim 5^\circ$ gradient continuous beach face across the Site is demarcated by a grading of accumulated sediment, from sparse cobbles and coarse gravel atop sand at the low-tide terrace interface, to fine gravel and sand at the backshore interface. Generally, there is a surface layer of mobile gravel which accumulates to greater depths toward the backshore interface. There is a wrack layer at the upper extent of the beach face, with accumulation of littoral debris by normal wave and tide-action.

The beach sediment is a broad mixture of boulder erratics emerging from sedimentary bedrock or upland surficial material through weathering, to gravel, coarse sand and limited fines. Further information on beach sediment is found in the Section 5.5 – Beach sediment analysis.

6.4. Wave dynamics

Wind-driven wave generation is largest in the west to northwest direction, creating acute incidence of approach. However, windrose diagrams (Figure 4) demonstrate a predominantly southwest to southeast winds that reach moderate velocity (≥ 6.0 m/s). These predominant

winds would form waves over a maximum 4.6km fetch. There are rarely occurring strong northerly to northwesterly winds recorded for the autumn period which would incur the maximum possible 13.5km fetch for the Site. The reference marine shoreline development guidelines recommend differentiating between Low, Moderate and High energy waves when fetch exceeds 1.6km & 8.0km (respectively) – therefore wind-driven wave energy on Site is determined to be Moderate.

Vessel-wake wave energy is predominantly from the most transited paths through the Sansum Narrows, and the regular Vesuvius-Crofton ferry. While there is large cargo vessel traffic to the nearby Crofton Mill, the lower frequency and low-speed manoeuvring does not contribute significantly to wave-energy delivered to Baker Beach. Due to the predominant angle of incidence, the vessel-wake do contribute to alongshore drift, moving fine sediment within the Drift cell.

Using equation 3 from Appendix B, typical wave velocity at high-tide across the rising low-tide terrace is determined to be 1.98m/s (7.12 km/h) resulting in a surging breaker classification. Surging breaker waves involve a progressive transfer of potential to kinetic energy across the coastal zone of Site.

Under storm event conditions where wind energy increases wave speed, wave type shifts to plunging breakers at steep shorerise, with the resulting whitewater traveling across the low-tide terrace and beach face as turbulent motion.

Based on sediment deposition patterns and distance from deep water, tidal currents do not have an apparent influence on wave dynamics at Site. Further, Booth Inlet – immediately east of the Site – is an ebb-tide delta with observable fine sediment accumulation. There is little evidence of increased fine sediment accumulation from the ebb-tide delta within the Site, demonstrated through beach sediment analysis, reinforcing that the drift-cell transports alongshore from northwest to southeast.

6.5. Beach sediment analysis and Beach Nourishment Sizing

Sediment analysis of the coastal zone samples were evaluated for size fraction (See Appendix C). Sediment analysis provides distribution across distinct size ranges for samples from the following delineated coastal zones: Coastline, Backshore terrace, Backshore face/wrack, Foreshore beach, and Nearshore crest.

Within the study area, the most consistent sediment size-composition (Graph C1) was found across the well sorted foreshore beach face (Figure 2). After which, the backshore face and backshore terrace demonstrate good size consistency (Graph C2, C3) across the Site. There is a clustered distribution of sediment composition for the nearshore samples (Graph C4), which demonstrate a zonation along the drift cell.

To better understand the zonation, sediment size was charted for each property (Graph C5 – C9) to determine if there are alongshore effects to be accounted for in beach nourishment

sizing. This identified grouping of sediment sizes between property 1 and 5, as well as 3 and 6; suggesting similar wave action and resulting sediment transport processes in these areas.

Generalized Sediment Budget

The Site is of limited spatial area, and therefore can only receive sediment from a limited section of the coastline and intertidal terrace erosion. While there is some alongshore sediment transport within the drift-cell, the mobile size fraction – being fine sand to silts – was most prevalent in the nearshore adjacent land parcels further along in the drift-cell. This distribution indicates a fine sediment deposition zone in the eastern portion of the Site, which agrees well with geomorphic factors – such as the nearby confluence of Booth Inlet.

Coarse sand to stones are most readily supplied to Site by erosion of surficial materials in the coastline and uplands, accomplished through overland transport or failure of the coastal bluff. These sediment sources are limited in volume prior to when their transport to beach would encroach on built structure geohazard setbacks. As such, we can state that there will be a decrease in sediment supply from uplands, trending to zero in the long term, should safe use of the built structures be prioritized.

Sparse gravel coverage along the low tide terrace and beach face demonstrates a low supply and low loss environment. The deposits present were found to be armoured at surface with large clasts, finding sand and silt content deeper within the sediment profile. This suggests there is reworking of sediment within the drift-cell, but there does not appear to be sufficient force to transport the larger size range of sediment present out of the drift-cell.

In context, the drift-cell generalized sediment budget is low input/output, with primary loss – being fine sands to silts – through evacuation to off-shore. There is reworking of gravel present, although observed armouring and stratification of beach sediment profile indicates a heavily conserved higher clastic fragment size range.

From this generalized sediment budget, beach nourishment planning can be better focused on the larger sediment size ranges to ensure conservation of materials while including coarse sand to help stratification and armouring processes occurring on the beach face.

Beach Nourishment Sizing

Determining sediment size suitable for beach nourishment within the Site becomes more complex in context of a drift cell, where materials deposited to a portion of the Coastal Zone (Figure 2.) will disperse to adjacent zones and alongshore within the drift cell. This is a factor in determining both target-zone, and size range for beach nourishment. One suitable approach is to determine sediment size composition for beach nourishment through averaging of existing sediment within zones that will ultimately receive the material, weighted for the target deposition area.

Based on Client motivation, the target deposition area within Site would be the backshore face, where it is anticipated that there will be transport to backshore terrace and foreshore beach face. Additionally, there is no intention of placing easily transportable material – meaning that there will be no purposeful addition of silt to the beach nourishment, and coarse sand will be the smallest size fraction identified for placement.

Due to the previously identified zonation, there are two size ranges suitable for beach nourishment at the backshore face – as follows:

Zone 1: Property 1 & 5

<u>Percent Composition</u>	<u>Size Range</u>	<u>Common Name</u>
60%	4.8mm+	(30%) 20mm washed drain rock, (40%) 40mm washed crushed rock, (25%) 60mm washed crushed rock, (5%) 10 - 20cm round cobbles
20%	1.8mm to 4.7mm	10mm washed rounded gravel
20%	1.7mm-	Fine to coarse sand

Zone 2: Property 3 & 6

<u>Percent Composition</u>	<u>Size Range</u>	<u>Common Name</u>
45%	4.8mm+	(30%) 20mm washed drain rock, (40%) 40mm washed crushed rock, (25%) 60mm washed crushed rock, (5%) 10 - 20cm round cobbles
20%	1.8mm to 4.7mm	10mm washed rounded gravel
35%	1.7mm-	Fine to coarse sand

7. Drift Cell Model - Interpretation and Summary of Marine Shoreline Dynamics

The drift-cell of Baker Beach extends 2,350m from the rocky outcrops at south Vesuvius Bay to the mouth of Booth Inlet. This drift-cell is designated based on a common alongshore drift-current that transport sediments and has been generated by consistent waves approaching at oblique angles to the shoreline.

Baker Beach is currently supply limited, resulting in discontinuous sections of beach face, with long-term coastline retreat driven by wave, water and weathering erosion mechanisms. The beach features a bedrock intertidal terrace, over which a moderate alongshore drift-cell current provides low-volume sediment transport.

Consequently, the primary source of sediment for Baker Beach are sections of the adjacent upland coastal bluff, which contribute silt, sand, gravel and limited larger clastics up to boulders.

The delivery of sediment is through progressive erosion mechanisms and punctuated erosion mechanisms. Bedrock erosion produces angular to sub-angular coarse to fine gravel which is highly susceptible to further breakdown due to the fissility of shale – the predominant bedrock type. A variable mantle of ~0.5 – 3m of surficial material contributes sandy to silty loams, with clastic fragment (e.g. gravel, cobbles, stones) content up to 20% by volume. There are sparse stones to boulders on the beach which have weathered out of bedrock during formation of the low-tide terrace, or through erosion of the surficial uplands sediment mantle.

Sediment discharge from the drift-cell includes evacuation of mobilized sediment to off-shore depths, and limited wind-driven loss of fine sediment fraction from the backshore and uplands.

Alongshore sediment movement is facilitated by the low-tide terrace having a gentle slope and predominantly bedrock surface. Outside of the submerged low-tide terrace, alongshore sediment movement is very limited.

8. Suitability of Erosion Mitigation and Sediment Transport Management Recommendations

Previous reporting on geohazards⁵ identified erosion mechanisms and developed recommendations for mitigation. This report has assessed shoreline and sediment processes, culminating in a drift-cell model which differentiates between prevalent kinetic forces (i.e. wave, wind, current & weathering) and results in a generalized sediment budget for Baker Beach.

In this section, the recommended erosion mitigation options are evaluated for suitability in context of existing conditions and drift-cell model. Suitability is a high, moderate and low ranking based on evidence gathered through this and preceding reporting.

The following table is evaluation of activity suitability for mitigation of erosion and management of sediment transport in the Site foreshore.

TABLE 2. SUITABILITY OF EROSION MITIGATION AND SEDIMENT TRANSPORT RECOMMENDATIONS MADE UNDER PREVIOUS GEOHAZARD REPORTING.

Mitigation or Management Activity	Suitability			
	Foreshore	Backshore	Wave Dynamics	Sediment Supply
Monitoring rate of erosion	High Monitoring captures multi-seasonal natural cycles.	High Monitoring captures multi-seasonal natural cycles.	High Direct capture of data.	High Capture seasonal fluctuation in sediment transport.
Bioengineering and selective planting	Low Very challenging establishment conditions.	Moderate Shelter and stabilization of sloughed surficial material and bedrock. Challenging establishment conditions.	Moderate Bioengineered and root reinforcement of sedimentary coastline. Overhanging vegetation would shelter bedrock from weathering.	Low Mitigation activity would reduce primary sediment supply to beach.
Wave deflection	Moderate Reduces incident wave energy reaching backshore. Close placement to be uniformly effective.	Low Would constitute hard armouring in coverage required to be effective.	Moderate Moderate energy wave conditions and presence of discontinuous backshore de-prioritizes this option.	Moderate Reduces incident wave energy reaching backshore. Reduces amount of sediment supplied to beach.
Beach Nourishment	High Post-placement in the backshore, natural transport of sediment would supply the foreshore.	High Placement in the backshore would reduce wave energy reaching coastline.	Moderate Moderate wave energy would evacuate some of placed sediment.	Moderate Subsidize existing natural supply, reduces natural sediment supply. Would need re-supply in future.

The interaction with Site ecology, efficacy and ease of implementation and maintenance of these recommended mitigation options should be carefully considered in context of Marine Shoreline Design Guidelines.

9. Summary

This assessment of Baker Beach and surrounding area marine shoreline has characterized shoreline, wave dynamics, erosion and sediment supply of the area which constitutes a drift-

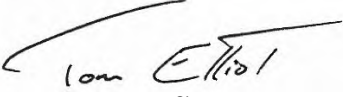
cell. Within Site, detailed foreshore and backshore characteristics were established from field and existing data.

Analysis of beach sediments has identified a zonated drift-cell with deposition of fine sediments in the eastern portion of the Site. The drift-cell generalized sediment budget is low input/output, with primary loss – being fine sands to silts – through evacuation to off-shore. There were two distinct sediment-size distributions identified that would be suitable for beach nourishment activities.

A drift-cell model was developed for the Site, which establishes sediment supply and transport mechanisms present. Using the drift-cell model, a suitability evaluation of erosion mitigation and transport management activities was undertaken for the Site with explanatory rationale demonstrating whether particular recommendations would be viable in context.

Despite moderate energy wave conditions on Site, a limited sediment supply exists due to the low amount of global sediment movement brought about by tidal currents and lack of up-drift sediment sources.

A comparison of activity suitability from this assessment with a similar suitability evaluation based on geohazards and ecology would be instrumental when applying the reference Marine Shoreline Development Guidelines.

Qualified Professional of Record	THOMAS R. ELLIOT PhD P.Geo, P.Ag Name	 Sign

Thomas R Elliot PhD P.Geo. P.Ag.

Date: December 18, 2023
Digital reproduction, original available upon request.

Closure and Limitations

The QP signatory to this assessment and report assures accuracy of existing and field observation, and evaluation of technical geohazard according to best practices of the Engineers and Geoscientists of BC. The content of this report are applicable to the subject land parcels, and specifically the Site as defined in this report. Any extension of the evaluation to areas outside of the defined area assessed are not valid.

The report has been conducted according to guidelines and reporting standards of similarly qualified professionals, given similar time and budget. At time of writing, the report meets due diligence and investigatory reporting requirements to provide QP recommendations with declared competency in the subject areas. Therefore, the author of this report does not maintain liability insurance for actions taken based on the reporting, and only accepts error and omission liability up to the value of this report. The receipt, utilization and any planning, further studies or development actions undertaken by the recipient of this report are based on their acceptance of their own liability therein.

Appendix A

Maps and Figures

Figure 1. Assessment area



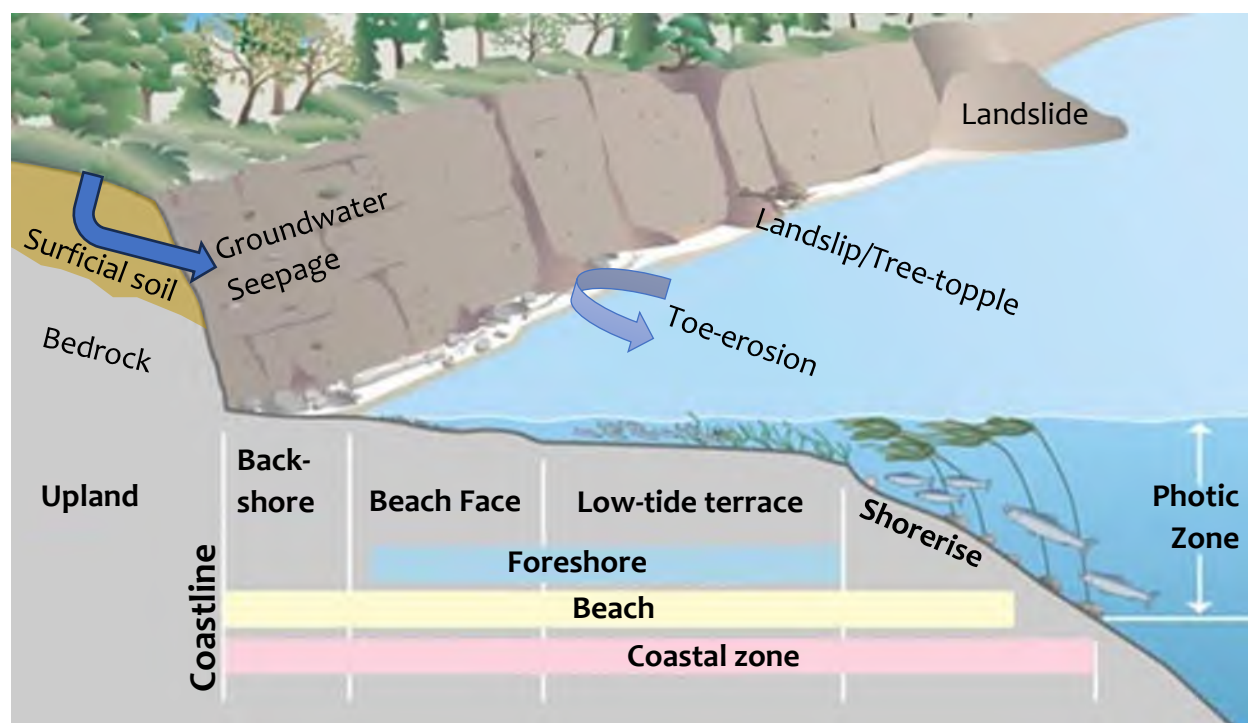
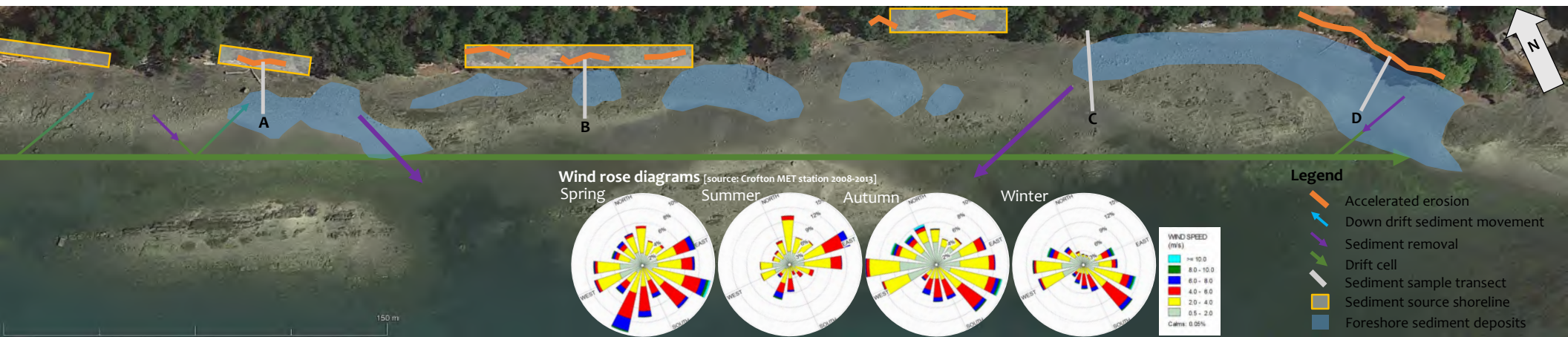


FIGURE 2. CONTEXTUAL DELINEATION OF THE SITE WITH RELEVANT TERMINOLOGY TO ASSIST WITH READING OF THIS REPORT. THE COMPONENTS OF THE COASTAL ZONE AND UPLANDS ARE INDICATED ALONG WITH ACTIVE EROSION MECHANISMS. ADAPTED FROM: [KING COUNTY NEARSHORE ENVIRONMENTS](#), CENTRAL PUGET SOUND, WASHINGTON STATE.

Figure 3. Shoreline types, sediment transects and bedrock outcroppings



Figure 4. Sediment dynamics, drift-cell current, and windrose diagrams



Appendix B

Methods and Rationale

Field and Analytic Methods

Field Methods

Two field days were used to characterize the Site.

Day One: Characterization of geology, geomorphology, wave dynamics, sediment dynamics, and documentation of soil and bedrock erosion/evidence of groundwater.

Day Two: foreshore delineation and beach sediment sampling along Transects A – D, as shown in Figure 3 & 4.

Beach sediment sampling

Sediment samples were collected using appropriate tools, ensuring they represent the area of interest accurately.

A 250mL silicon container was used to collect uniform volume of trowel-excavated (to a depth of 10cm where existent) grab samples from beach sediments at specific locations, as follows: backshore, beach face, low-tide terrace, and shorerise.

The distance from coastline to each sample location was measured alongside multiple GPS enabled photographs which are used to document the precise location.

Each sample was codified, and placed in a sample bag.

The samples were retained in a cool environment until analytic testing (see below).

Analytic Methods

The process of drying and fractioning sediment typically involves the following standard methods:

Drying: The collected sediment samples are spread out in thin layers and set to air dry at a low temperature (usually around 105°C). This process removes moisture from the samples without significantly altering the composition.

Sieving: Dried sediment is sieved through various mesh sizes to fractionate the particles based on their size. This can range from very fine sieves for clay particles to coarser sieves for sand and gravel fractions.

Particle Size Analysis: After sieving, the fractions are weighed and analyzed to determine the percentage of different particle sizes in each fraction. This analysis may involve techniques

such as sedimentation, laser diffraction, or microscopic examination to precisely determine particle size distribution.

Organic Matter and Mineral Content Analysis: Sediment fractions were not evaluated for organic content. Mineral composition was determined by hand-lens heuristic assessment to general rock type.

Data Interpretation: The results obtained from these analyses are used to characterize the sediment, understand its properties, and make inferences about its origin, quality, and potential uses or impacts in various contexts.

Rationale

Wave Dynamics

Wave generation proximal to Site is by two mechanisms: wind and vessel-wake. Wind-generated waves are formed off-shore, above deeper water, oriented in the predominant wind direction of the area, which is shown for Site in Figure 4 seasonal windrose diagrams⁶.

Vessel-wake waves are generated by marine traffic, forming short-period, steep sided wave-trains with moderate height that move quickly across open waters. Larger vessels initiate wave-trains that compound to amplify height, which can exceed wind-generated waves in areas with short-fetch.

Waves generated by wind above deep water are typically short-period, with steep sides, with relatively tall height that move slower during wind-driven generation. Transition to swell waves occurs as the proto-waves concatenate in the orientation of predominant wind as modified by any coastal-reflection. Swell waves are longer, faster and uniformly spaced as they approach coastal environments, whereupon contact with the rising bedrock causes them to shoal and break. The contact with bedrock in shallow waters also starts to re-orient the incoming swell waves to be more perpendicular to the coastline due to refractive waves.

The potential energy contained within swell waves are released as kinetic energy through this shoal and break mechanism. Typically, the wave height (H, trough to crest), period (T, time for crest to crest to pass), length (L), and velocity (C) are related to each other through the following equations:

⁶ It should be noted that the weather-station which acquired wind data for the windrose diagrams shown in Figure 4 is situated at the coastline of Crofton, on the west side of Sansum Narrows – opposite to Site at a distance of 3.8km, and as such the weather-station location will be subject to a wind regime modified by local topography that over-represents winds coming from off-shore – although general trends in wind direction would be consistent for both the meteorological station and Baker Beach.

Eq. 1	$L = 1.56 T$	wave length
Eq. 2	$C = 1.56 T^2$	off-shore wave velocity
Eq. 3	$C = \text{sq.rt.}(g*d)$	near-shore wave velocity, where g is gravitational constant, d is depth of water

wherefrom velocity can be used as general proxy for mechanical energy conveyed by waves.

Transferral of wave potential energy to kinetic energy at the foreshore and coastline is, in part, dependent on the angle of incidence (α), as the measurement of wave alignment to perpendicular from coastline. When waves enter the break and swash zone at oblique angles, the momentum gradient in the alongshore direction produces an alongshore current typically known as a drift current. This current advects sediment mobilized by a combination of wave motion and turbulent motion in the alongshore direction. The alongshore current forms the fundamental component of a Drift Cell, which is a representation of wave, current, tidal and transport processes – ultimately determining distribution of sediment within the Site.

Tides influence waves and kinetic energy delivered to coastlines by altering the shoal and break mechanism through adjustment of the water depth in the foreshore (i.e. high vs. low tide). Exceptionally high tides, typically corresponding to full or new moons, are contributory to backshore composition and configuration due to this increased depth and concurrent wave activity which can reach the backshore.

Tidal currents are critical to supply of fine sediment for drift cells, and within regional proximity to Site there are Department of Fisheries and Oceans current predictions⁷ which indicate a low to moderate tidal effect throughout the Gulf Islands on the east coast of Vancouver Island. Due to Site being off-set from a main tidal channel, the influence on sediment budget is anticipated to have a lesser effect than a similar site more exposed to tidal current.

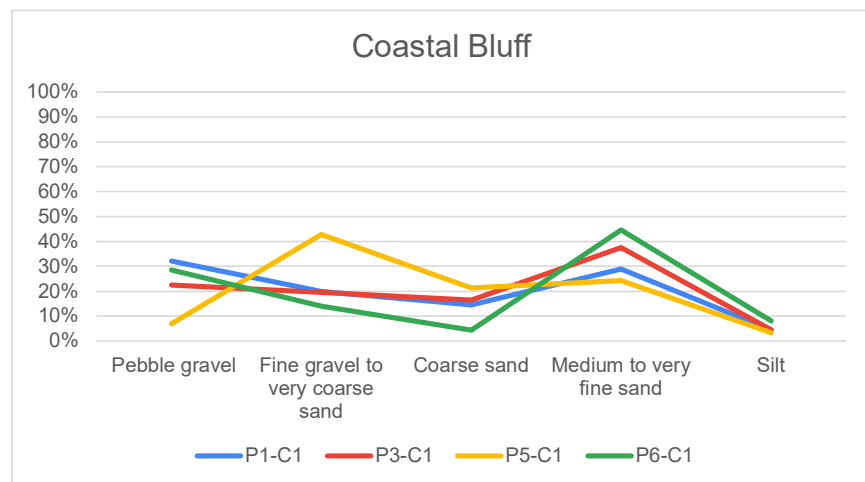
The angle of waves incidental to Site is such that a considerable amount of wave-energy is reflected, or disrupted, from Baker Beach during high tide – resulting in a reduction to incoming moderate wave energy and therefore less kinetic erosion on bedrock and sediment coastline, as well as lower energy evacuation of water from the shoreline. During low-tide conditions, the shoreline bedrock terrace is above sea level, restricting the amount of kinetic energy transferred to the bedrock and sediment coastline.

⁷ Canada Department of Fisheries and Oceans. Current Predictions by Station: <https://tides.gc.ca/en/current-predictions-station> utilizing Gabriola Passage [43km distant], Porlier Pass [17km distant] as indicators. Accessed October 2023.

Appendix C

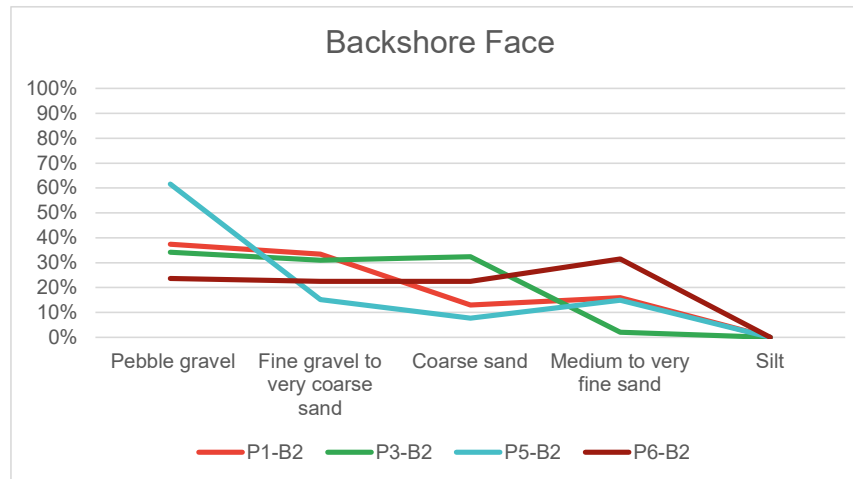
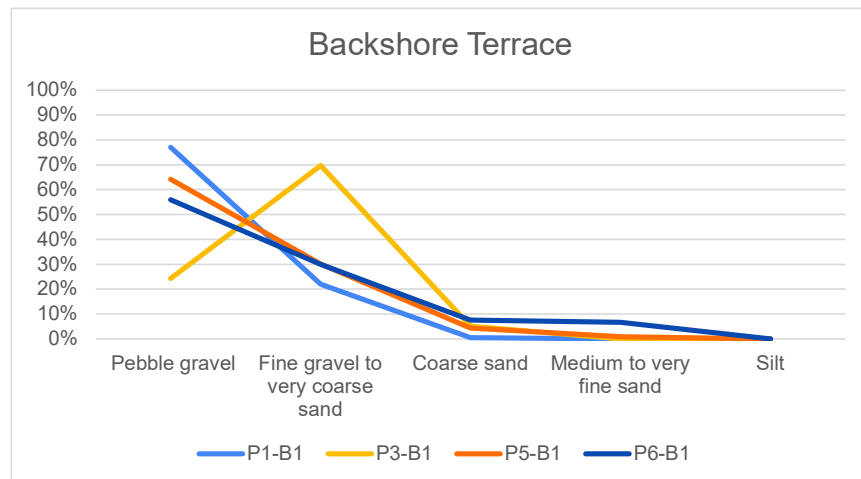
Sediment Analysis

Date	Sector	m	Wet Weigt	Dry Weigh	XL(g)	Pebble gr L (g)	Fine grave	M(g)	Coarse sa	S(g)	Medium tc	XS(g)	Silt	Notes
	P1-C1	n/a	221	221	71	32%	44	20%	32	14%	64	29%	10	5%
	P3-C1	n/a	204	200	45	23%	39	20%	33	17%	75	38%	9	5%
	P5-C1	n/a	280	271	19	7%	116	43%	58	21%	66	24%	9	3%
	P6-C1	n/a	193	186	53	28%	26	14%	8	4%	83	45%	15	8%

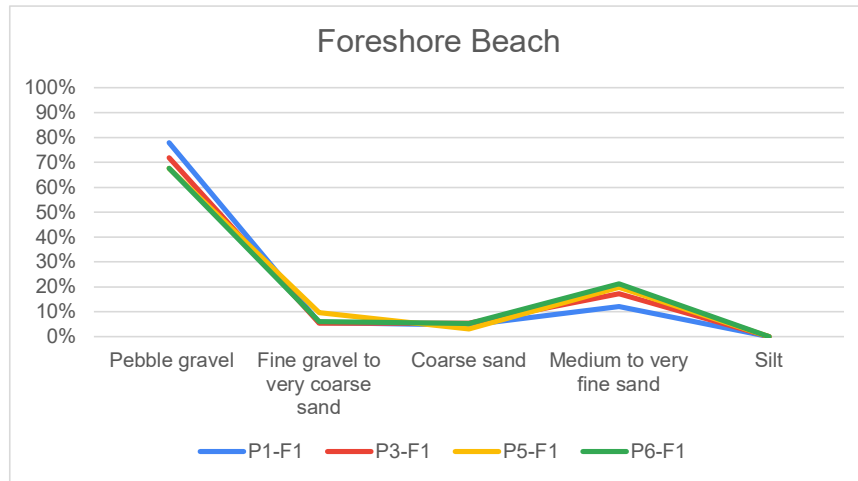


	Size Range (mm)	Wentworth Classification
XL	4.7498	Pebble Gravel
L	4.7497	1.8288 Granule Gravel to Very Coarse Sand
M	1.8287	0.762 Coarse Sand
S	0.7619	0.0737 Medium sand to very fine sand
XS	0.0736	Silt

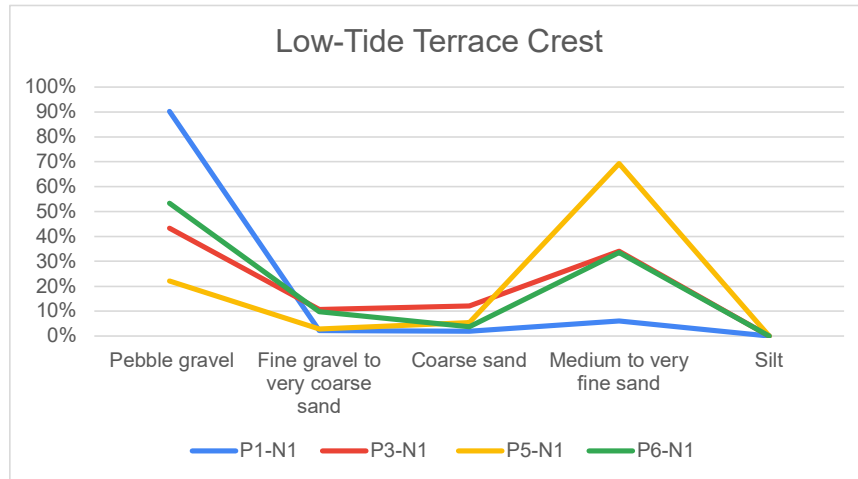
Date	Sector	m	Wet Weight	Dry Weight	XL(g)	Pebble gr L (g)	Fine gravel M(g)	Coarse sand S(g)	Medium to XS(g)	Silt	Notes			
	P1-B1	0.65	322	322	248	77%	71	22%	2	1%	0	0%	0	0%
	P1-B2	2.9	352	337	126	37%	113	34%	44	13%	54	16%	0	0%
	P3-B1	2.26	367	367	89	24%	256	70%	19	5%	0	0%	0	0%
	P3-B2	5.09	346	333	114	34%	103	31%	108	32%	7	2%	0	0%
	P5-B1	1.71	316	316	203	64%	95	30%	14	4%	3	1%	0	0%
	P5-B2	4.54	375	375	231	62%	57	15%	29	8%	56	15%	0	0%
	P6-B1	1.71	355	343	192	56%	103	30%	26	8%	23	7%	0	0%
	P6-B2	4.66	332	317	75	24%	71	22%	71	22%	100	32%	0	0%



Date	Sector	m	Wet Weight	Dry Weight	XL(g)	Pebble gravel (g)	Fine gravel	M(g)	Coarse sand	S(g)	Medium to coarse	XS(g)	Silt	Notes
	P1-F1	9.63	424	404	315	78%	23	6%	19	5%	49	12%	0	0%
	P3-F1	8.64	462	442	318	72%	24	5%	24	5%	76	17%	0	0%
	P5-F1	10.95	408	390	264	68%	38	10%	12	3%	77	20%	0	0%
	P6-F1	10.88	482	457	309	68%	28	6%	24	5%	97	21%	0	0%



Date	Sector	m	Wet Weight	Dry Weight	XL(g)	Pebble gravel (g)	Fine gravel	M(g)	Coarse sand	S(g)	Medium to coarse	S(g)	Silt	Notes
	P1-N1	15.7	569	556	502	90%	12	2%	11	2%	33	6%	0	0%
	P3-N1	17.98	465	422	183	43%	45	11%	51	12%	144	34%	0	0%
	P5-N1	15.18	353	284	63	22%	8	3%	15	5%	197	69%	0	0%
	P6-N1	18.87	466	439	234	53%	43	10%	16	4%	147	33%	0	0%



Deposit Area Weighting Scheme:		
	Weight	Areas impacted by deposit
	10	Backshore Terrace
	60	Backshore Face
	30	Foreshore Beach Face

Aggregate Mix #1 (Property 1 & 5)

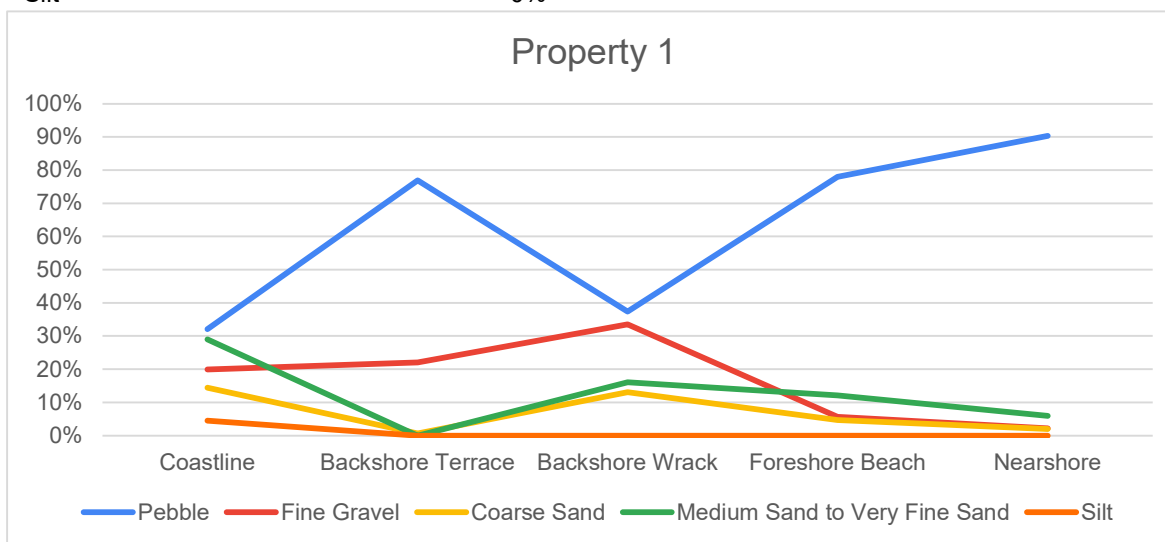
59%	4.8mm+	Drain
20%	1.8 to 4.7mm	pea
22%	fine to coarse sand	fine to coarse sand

Property 1

	Coastline	Backshore	Backshore	Foreshore	Nearshore
Pebble	32%	77%	37%	78%	90%
Fine Gravel	20%	22%	34%	6%	2%
Coarse Sand	14%	1%	13%	5%	2%
Medium Sand to Very Fine Sand	29%	0%	16%	12%	6%
Silt	5%	0%	0%	0%	0%

Recommended Composition

Pebble	54%
Fine Gravel	24%
Coarse Sand	9%
Medium Sand to Very Fine Sand	13%
Silt	0%

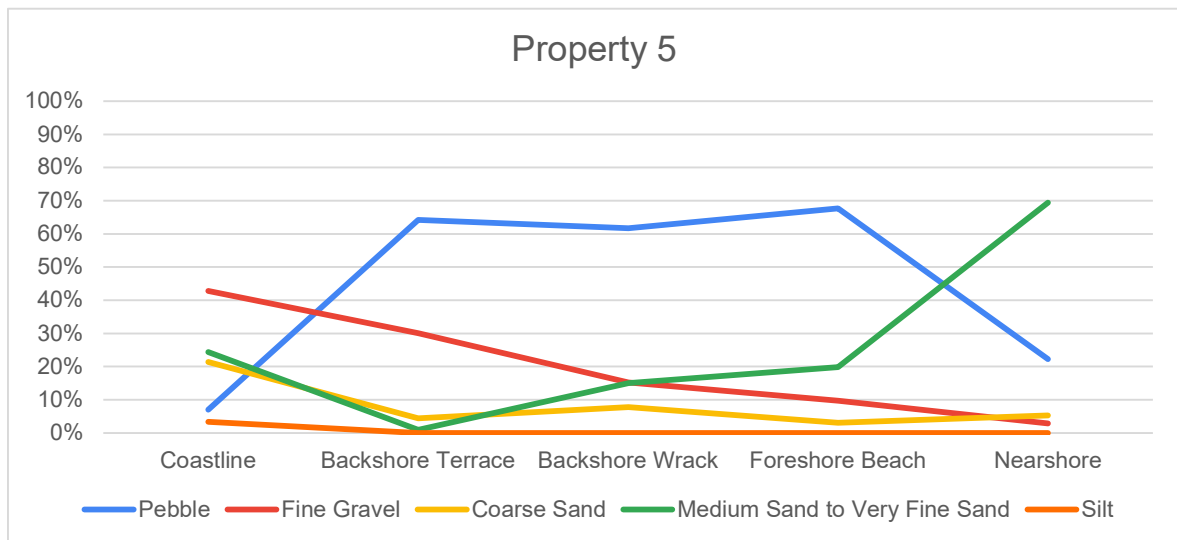


Property 5

	Coastline	Backshore	Backshore	Foreshore	Nearshore
Pebble	7%	64%	62%	68%	22%
Fine Gravel	43%	30%	15%	10%	3%
Coarse Sand	21%	4%	8%	3%	5%
Medium Sand to Very Fine Sand	24%	1%	15%	20%	69%
Silt	3%	0%	0%	0%	0%

Recommended Composition

Pebble	64%
Fine Gravel	15%
Coarse Sand	6%
Medium Sand to Very Fine Sand	15%
Silt	0%



<u>Sediment Size</u>		
<u>Range (mm)</u>		
<u>Wentworth Classification</u>		
+	4.7498	Pebble Gravel
4.7497	1.8288	Granule Gravel to Very Coarse Sand
1.8287	0.762	Coarse Sand
0.7619	0.0737	Medium sand to very fine sand
0.0736	-	Silt

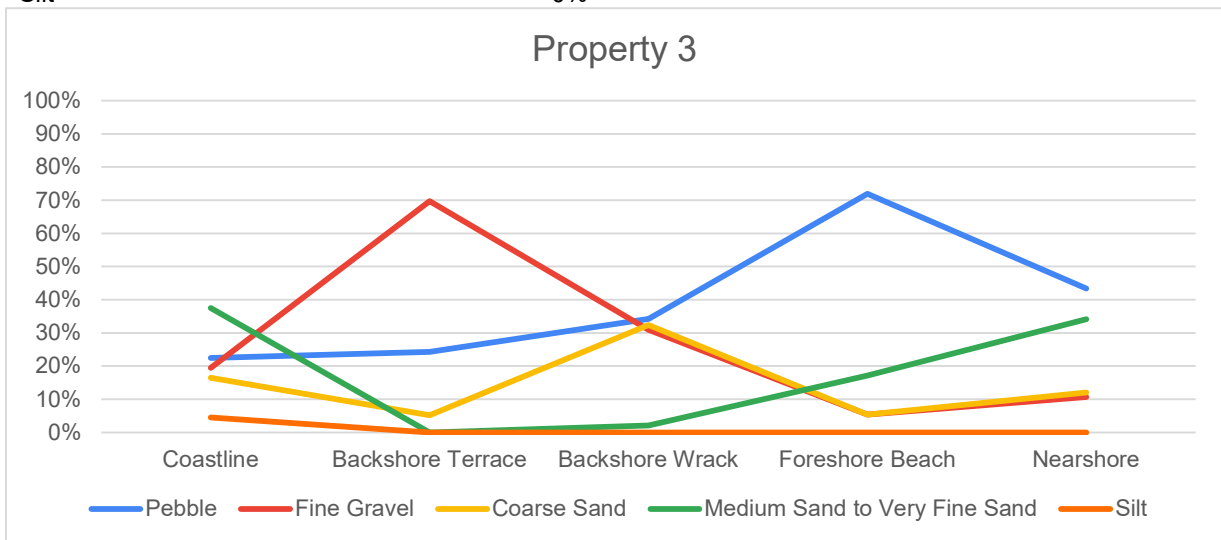
<u>Aggregate Mix #2 (Property 3 & 6)</u>		
42%	4.8mm+	Drain
23%	1.8 to 4.7mm	pea
35%	fine to coarse sand	fine to coarse sand

Property 3

	Coastline	Backshore	Backshore	Foreshore	Nearshore
Pebble	23%	24%	34%	72%	43%
Fine Gravel	20%	70%	31%	5%	11%
Coarse Sand	17%	5%	32%	5%	12%
Medium Sand to Very Fine Sand	38%	0%	2%	17%	34%
Silt	5%	0%	0%	0%	0%

Recommended Composition

Pebble	45%
Fine Gravel	27%
Coarse Sand	22%
Medium Sand to Very Fine Sand	6%
Silt	0%

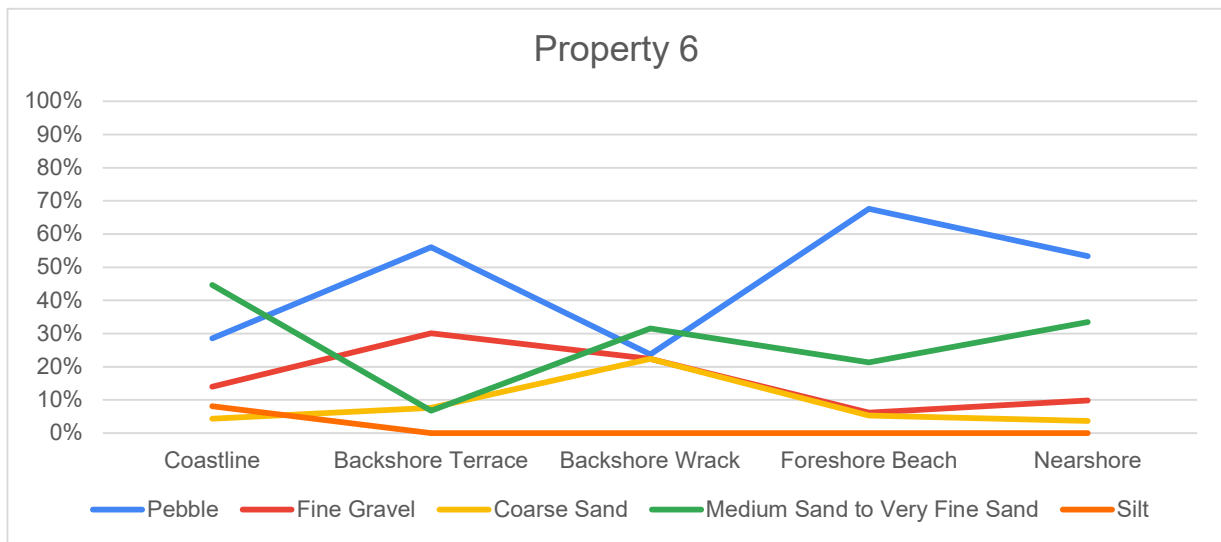


Property 6

	Coastline	Backshore	Backshore	Foreshore	Nearshore
Pebble	28%	56%	24%	68%	53%
Fine Gravel	14%	30%	22%	6%	10%
Coarse Sand	4%	8%	22%	5%	4%
Medium Sand to Very Fine Sand	45%	7%	32%	21%	33%
Silt	8%	0%	0%	0%	0%

Recommended Composition

Pebble	40%
Fine Gravel	18%
Coarse Sand	16%
Medium Sand to Very Fine Sand	26%
Silt	0%



Summary of Baker Beach Shoreline Erosion Mitigation Recommendations

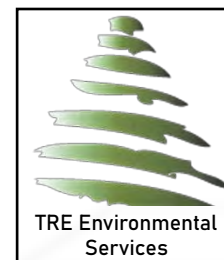
As pertaining to areas seaward of land parcels:

235 Quarry Drive PID 009-555-706
239 Quarry Drive PID 009-555-731
434 Baker Road PID 009-555-781
431 Baker Road PID 000-014-656

SALT SPRING ISLAND

Developed for: Aurora Professional Group
c/o Bradley Fossen P.Eng
338 Lower Ganges Rd UNIT 202
Salt Spring Island, BC V8K 2V3

Developed by: Thomas R Elliot PhD P.Geo P.Ag
TRE Environmental Services
tom@elliot.org



1. Introduction

This summary report and preceding investigations were conducted within the intentions of A Coastal Marine Strategy for British Columbia¹, and we specifically acknowledge that our work spans Halalt and Penelakut Tribe First Nation territories. We are grateful for the knowledge, teachings and holistic worldviews contained within. These holistic worldviews were, and are, foundational to how First Nation Peoples steward the lands, water, seabed, air and resources that sustain them.

This summary report presents climate resilient shoreline erosion mitigation opportunities for Bakers Beach, Salt Spring Island. The existing geohazards, ecologic, and marine characteristics of Bakers Beach and surrounding area have been assessed in previous reporting which is the result of field and desktop investigations. Those investigations have guided the identification of suitable and effective mitigation measures for the area in context of local shoreline processes.

The suitability of mitigation measures was guided by the Stewardship Centre for British Columbia Green Shores for Homes² program, including the assessment approach and our best practices for erosion management. Suitability is based on site characteristics evaluated during assessment of upland geohazards and surface hydrology³; shoreline and coastal sediment dynamics⁴; and Environmental Assessment⁵.

The recommendations within this report are generalized, with Site specific design pending support of concept by participating property owners and local government.

2. Shoreline and Upland Characteristics

There were no significant geohazards identified within upland of the assessed areas, ensuring no overriding natural hazard would affect the recommended mitigation measures. There is both natural and ditched concentration of stormwater flow to pre-existing natural catchments. A consistent upland terrace across the assessed area has sparse areas where stormwater flow concentrates, creating localized soil wetness, fostering wet-soil vegetation

¹ A Coastal Marine Strategy for British Columbia Policy Intentions Paper (December 2022). <https://engage.gov.bc.ca/app/uploads/sites/121/2022/12/Coastal-Marine-Strategy-Intentions-Paper.pdf> Accessed 11/2023

² Stewardship Centre of BC. Green Shores for Homes. 2023. https://stewardshipcentrebc.ca/PDF_docs/greenshores/Resources/GSHCreditsandRatingsGuide.pdf

³ Geohazard Assessment of Lands. Pertaining to upland area from the shoreline of 235, 239 Quarry Drive and 431, 434 Baker Rd. TRE Environmental Services. File: 2023.900_A – D

⁴ Assessment of Marine Shoreline Characteristics: Report for Coastal Erosion Mitigation. TRE Environmental Services. File: 2023.900_E

⁵ Environmental Assessment: 235, 239 QUARRY DRIVE & 434, 431 BAKER ROAD SALT SPRING ISLAND. Corvidae Environmental Consulting Inc.

and affecting downslope coastal bluff erosion. Vegetation of the upland terrace and slopes above are typical of the red-listed Douglas-fir – arbutus ecological community, which is at risk of being lost in BC.

The coastal bluff trends from bedrock-dominant in the northwest, downward (dipping) to the southeast whereby the low gradient backshore and coastline is predominantly fine gravel and sand (respectively). Vegetation along the coastal bluff was characterized by Douglas-fir – arbutus woodland species, with lesser amounts of shore pine and Garry oak. Understory species included pink (hairy) honeysuckle, grasses, weeds, evergreen huckleberry, and numerous invasive species. The shoreline and uplands are habitat for river otter, belted kingfisher, and a variety of yellow listed bird species.

The majority of foreshore area is dominated by a low-tide terrace, which results in retention of the sediment that forms the beach face and backshore sediment terrace. The beach face is predominantly gravel and sands with frequent cobble to boulder coarse fragments. The southeastern foreshore, in front of 431 Baker Road is dominated by the beach face, which trends toward finer sediment with sparse stones and boulders. The backshore has limited grasses, with minor occurrence of landslip depositing sufficient mineral soil on the backshore terrace to foster salt tolerant woody species – although these deposits are at risk of removal under unmitigated storm wave-action.

There are areas of the foreshore mapped as surf smelt and Pacific sand lance spawning habitat. Off-shore, there are mapped eelgrass beds which support herring and forage fish. Additionally, there are known plainfin midshipman rearing grounds off-shore – which draws raptors and sea-birds to the annual food source. Intersecting these off-shore area is a mollusc lease parcel, which has seen intermittent operation in recent history.

Any recommended mitigation options will maintain critical awareness of these habitat to maintain a healthy and productive coast that sustains ecosystems with abundant fisheries and marine wildlife.

3. Summary of Management and Mitigation Options

One of the easiest and most effective management options is monitoring the rate of erosion. A suitable method for monitoring is static-location imagery, with conscious effort to reproduce both location and visibility-conditions to provide comparable results. Timing of monitoring should be once per year at minimum, with updated imagery after significant storm events so as to capture occurrence of punctuated erosion.

3.1. Bioengineering and Revegetation

Bioengineering and selective planting of the backshore, coastline and upland terrace are recommended in the areas indicated in Figure 1 of this document. Each shading colour in Figure 1 indicates differing goals and motivation for planting, as follows:

- Backshore planting: Primarily planting grasses and sedge due to a lack of accumulated mineral soil that would support larger woody species. Planting would intend to create ‘clumps’ on the backshore terrace to encourage sediment accumulation.
- Coastline planting: Planting is viable in the upper surficial materials which cap the bedrock coastal bluff. The coarse soil texture and south-facing exposure results in an anticipated attrition of planting-stock due to drought conditions, or consistent irrigation during drought season. Where appropriate along the coastal bluff implementing a succession tree-planting program would benefit the relatively even-aged population of existing trees. There is opportunity for pole planting of salt-tolerant woody species along the southeastern coastline fronting 431 Baker Road. Invasive management is recommended for the coastline of 431 Baker Road as part of the revegetation process.
- Upland terrace planting: Planting of wetted soils would increase evapotranspiration, reducing long-term groundwater erosion of the coastal bluff. In these areas, it would be suitable to plant hydrophilic species common to the Douglas-fir – arbutus woodland species understory. Extending additional deeper-rooted plantings from these wetted areas to the coastal bluff would increase soil cohesion of the area likely to fail.

3.2. Wave Deflection

Wave deflection is recommended, in areas shown in Figure 2, to disperse the persistent wake from vessel traffic, which contributes to sediment loss from the foreshore. An effective way to accomplish wave deflection is by sparse placement of boulders along the low-tide terrace so as to provide relatively uniform coverage from the predominant wave direction (west, for vessel wake). These boulders would be submerged at high tide, and as such would assist in disrupting plunging breaker wave action, prompting transition to surging breaker wave which better distributes (i.e. lessen the peak) erosion forces. The shoreline already has sparse coverage of large glacial erratics, weathered nodular boulders emerging from bedrock, and stones to boulders from upland till and bedrock exposures. Placement of boulders would look to mimic and enhance this natural process to accomplish erosion mitigation goals.

3.3. Beach Nourishment

Beach nourishment, as a concept, is an exaggeration of existing natural sediment supply processes which primarily uses coarse sediment due to mobility – and therefore loss – of fine sand and smaller particles. The installation of sediment for beach nourishment also attenuates with natural conditions through localized re-distribution within the backshore, foreshore beach face and low-tide terrace.

The intention of a beach nourishment program for the assessed area is to increase the width and elevation of backshore terrace, as shown in Figure 3, approaching the coastal bluff in most areas. This supplement to the sediment budget is intended to dissipate incoming wave energy by changing the plunging breaker wave type (higher erosion) occurring under storm event conditions to a surging breaker wave type (lower erosion).

The beach nourishment program will supplement long-term sediment deficiency resulting from hard armouring within the drift-cell and coastal bluff erosion mitigation activities. As the preceding assessments have accounted for our changing climate and sea level rise⁶, the recommended beach nourishment meets a number of climate change resilience objectives as explored through the following sections of this document.

4. Applicable Potential Green Shores Credits Scoring

The following evaluates the recommended measures and associated activities under the Green Shores for Homes credit scheme, wherefrom categories which have no applicability have been excluded from the following table.

Green Shore for Homes Credit Categories	Possible Score	Potential Project Score
Shoreline physical processes		
1.2 Setback/Impact Avoidance (110m/600m does not qualify)	9	7
1.5 Nature-Based Erosion and Flood Management	13	13
Shoreline habitat		
2.1 Enhance Bird Habitat Stewardship	8	8
2.2 Riparian and Emergent Vegetation	13	13
2.3 Trees and Snags	5	4
2.4 Invasive Plants	4	2
2.5 Organic Material	6	5
2.6 Overwater Structures	6	4
Water Quality		
3.2 Reduce and Treat Runoff	9	7
3.5 Aesthetic Vegetation Chemical Control	3	3
3.6 On-Site Sewage Treatment	4	3
Shoreline stewardship		

⁶ Natural Resources Canada. James *et al.* 2021. Relative sea-level projections for Canada based on the IPCC Fifth Assessment Report and the NAD83v70VG national crustal velocity model.
https://geoscan.nrcan.gc.ca/text/geoscan/fulltext/of_8764.pdf

4.1 Shoreline Collaboration	8	8
4.2 Public Information and Education	3	3
4.3 Conservation Easement or Covenant	6	2
4.4 Shoreline Stewardship Participation	2	2
Total	99	84

Of note is that Potential Project Score is optimal, and performance should be based on the Project aspiring to secure all 84 credits while recognizing that the Green Shores for Homes Gold rating is a minimum 40 points, of which a minimum 20 points (collectively) are acquired from Shoreline Process and Shoreline Habitat credit categories.

5. BC Marine Strategy Intentions

In this section, the recommended mitigation measures are generally evaluated under the 30 intentions of the BC Marine Strategy – as presented in the table below with the following ranking method:

Intention Met	No Reasonable Affect	Detracts from Intention	
BC Marine Strategy Intention	Bioengineering and Revegetation	Wave Deflection	Beach Nourishment
Healthy and Productive Coast			
A-1 Wild salmon			
A-2 Monitor health			
A-3 Prevent pollution			
A-4 Protect habitat			
A-5 Recover S.A.R.			
Resilience to Climate Change			
B-1 Safe communities			
B-2 Support seafood			
B-3 Nature-based solutions			
B-4 Mitigate acidification			
B-5 Protect carbon sinks			
Trusting, Respectful Relationships			
C-1 Respect FN rights			
C-2 Engage British Columbians			
C-3 Collaborative stewardship			
C-4 Coastal legislation			
Holistic Learning and Knowledge Sharing			
D-1 Weave Traditional and Western			
D-2 Value the Ocean			

D-3 Enhance spatial data			
D-4 Improve data access			
Community Well-Being			
E-1 Create steady employment			
E-2 Diverse workforce			
E-3 Support FN cultural revitalization			
E-4 Improve community resilience			
E-5 Develop marine use plans			
E-6 Improve access to nature			
A Sustainable, Thriving Ocean Economy			
F-1 Invest and Diversify			
F-2 Co-develop FN opportunities			
F-3 Support marine fisheries			
F-4 Advance sustainable aquaculture			
F-5 Support regenerative marine tourism			
F-6 Manage cumulative effects			

Broadly, the recommended erosion mitigation is meeting the intentions of the BC Marine Strategy, with areas of Community Well-Being and Sustainable, Thriving Ocean Economy remaining challenging intentions to meet through the limited size of this project.

6. Conclusion and Next Steps

Due to the low-tide terrace and low gradient foreshore beach-face within the assessed area, there is an opportunity to manage the consequence of sea level rise through a hybrid soft-shores erosion mitigation program that includes upland water management and riparian vegetation enhancement.

The scoped mitigation program includes three distinct options: Bioengineering and revegetation; Wave deflection; and Beach nourishment which can be implemented in the areas indicated in Figures 1 - 3.

The evaluation of the recommended measures was conducted under the Green Shores for Homes credit scheme, wherefrom a score of 84/99 possible credits was determined to be reasonably accomplished. Additionally, the alignment with BC's Marine Strategy Intentions was determined to be meeting most intentions or having no affect. There was no adverse impact to BC Marine Strategy Intentions consequent to the recommended mitigation measures identified through this evaluation.

The next steps in this process are to work under the Shoreline Stewardship credit categories as well as Intentions C – D (as shown above) to secure local government, stewardship, community and First Nation support. With support, permit applications will be required prior

to implementation. Additional technical detail beyond what has been provided in this report, including detailed survey and cross-sections of proposed alterations, will be necessary for permit applications.

7. Closure

The undersigned certifies that the above recommendations are based on best practices, guidance and professional experience to the capacity of the qualified professional of record – under similar constraints. There is reasonable expectation of professional product to be of sufficient quality and accuracy to be acceptable by receiving landowners, agency and governments. However, revision is an acceptable practice – one that I encourage and embrace. Should any requests for changes be made, please contact the undersigned.

Qualified Professional of Record	THOMAS R. ELLIOT PhD P.Geo, P.Ag Name	 Signature

Thomas R Elliot PhD P.Geo. P.Ag.

Digital copy of physical stamps, original available upon request.
Date: <u>January 5 2024</u>

Limitations

The QP signatory to this assessment and report assures accuracy of existing and field observation, and evaluation of technical geohazard according to best practices of the Engineers and Geoscientists of BC. The content of this report are applicable to the subject land parcels, and specifically the Site as defined in this report. Any extension of the evaluation to areas outside of the defined area assessed are not valid.

The report has been conducted according to guidelines and reporting standards of similarly qualified professionals, given similar time and budget. At time of writing, the report meets due diligence and investigatory reporting requirements to provide QP recommendations with declared competency in the subject areas. Therefore, the author of this report does not maintain liability insurance for actions taken based on the reporting, and only accepts error and omission liability up to the value of this report. The receipt, utilization and any planning, further studies or development actions undertaken by the recipient of this report are based on their acceptance of their own liability therein.

Figure 1. Areas recommend to undergo riparian and coastline revegetation



Figure 2. Areas recommended for wave deflection installations



Figure 3. Areas recommended to receive beach nourishment





ENVIRONMENTAL ASSESSMENT

235, 239 QUARRY DRIVE & 434, 431 BAKER ROAD
SALT SPRING ISLAND

PREPARED FOR:
BRADLEY FOSSEN
AURORA PROFESSIONAL GROUP INC.
SALT SPRING ISLAND, BC

AND

ISLANDS TRUST - SALT SPRING ISLAND
500 LOWER GANGES RD #1
SALT SPRING ISLAND, BC, V8K 2N8

AND

DEPARTMENT OF FISHERIES AND OCEANS CANADA
65 FRONT STREET
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CORVIDAE
ENVIRONMENTAL CONSULTING INC

6526 WATER STREET, SOOKE, BC

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	REGULATORY FRAMEWORK.....	4
2	SCOPE OF WORK.....	7
3	METHODS.....	7
3.1	DESKTOP REVIEW.....	7
3.2	FIELD ASSESSMENT	7
4	ENVIRONMENTAL SITE ASSESSMENT	8
4.1	CLIMATE AND BIOGEOCLIMATIC ZONE	8
4.2	TERRAIN AND SOILS	8
4.3	VEGETATION.....	8
4.4	WILDLIFE	10
4.5	MARINE ENVIRONMENT.....	10
4.6	SPECIES AT RISK	12
5	POTENTIAL ENVIRONMENTAL IMPACTS AND RECOMMENDED ENVIRONMENTAL PROTECTION MEASURES	15
6	REFERENCES	16
	APPENDIX A – SITE PHOTOGRAPHS	17

LIST OF TABLES

Table 1.	Site details	1
Table 2.	Plant species observed on site during the field visit on May 30, 2023.	9
Table 3.	Wildlife Species observed on site during the field visit on May 30, 2023.....	10
Table 4.	Species at risk that may occur in the vicinity of the Site.....	12
Table 5.	Aquatic species at risk that may occur in the vicinity of the Site.	13

LIST OF FIGURES

Figure 1.	Site Location	3
Figure 2.	Development Permit Area 3 - Shoreline	6
Figure 3.	Sensitive Shoreline Area in proximity to the Site	11
Figure 4.	Species and ecosystems at risk occurrences in the vicinity of the property	14



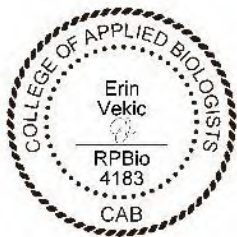
LIST OF PHOTOS

Photo 1. Close-up of foreshore ground, looking southeast. May 30, 2023.....	17
Photo 2. West view of the foreshore environment. May 30, 2023.....	17
Photo 3. Invasive species infestation near 431 Quarry Road, looking north. May 30, 2023.....	18
Photo 4. Northeast view of belted kingfisher nesting burrows. May 30, 2023.	18
Photo 5. North view of upland forested habitat. May 30, 2023.....	19
Photo 6. View of cliff/shoreline bank, looking west. May 30, 2023.....	19
Photo 7. Southwest view of backshore environment at 235 Quarry Road. May 30, 2023.	20
Photo 8. North view of riprap placement at CRD beach access near 431 Baker Road. May 30, 2023.	20

CAVEAT

This Environmental Assessment (EA) has been prepared with the best information available at the time of writing, including the Salt Spring Island Official Community Plan, communications with the client, a site visit, review of site plans and design drawings and other documentation relevant to the project. This EA has been developed to assist the project in remaining in compliance with relevant environmental regulations, acts and laws pertaining to the project and to identify sensitive environmental features that may require mitigation and consideration during future phases of the project.

Report Prepared By:



Erin Vekic, R.P.Bio, M.Sc.,
Environmental Biologist
Corvidae Environmental Consulting Inc.

1 INTRODUCTION

Corvidae Environmental Consulting Inc. (Corvidae) is pleased to provide this Environmental Assessment (EA) for the properties located at 235, 239 Quarry Drive and 434, 431 Baker Road, Salt Spring Island (the Site)(Figure 1)(Table 1). The Site includes four shoreline lots that are zoned as Rural (R). The Site occurs within the Shoreline Development Permit Area (DPA) 3 as outlined in the Salt Spring Island Official Community Plan (OCP) and shown on Map 20. DPA 3 includes upland areas within 10 metres of the natural boundary and the marine environment 300 m seaward of the natural boundary (measured horizontally).

Table 1. Site details

Civic Address	PID	Legal description	Current Zoning
235 Quarry Drive	009-555-706	LOT 1, PLAN VIP46155, SECTION 6, RANGE 1W, COWICHAN LAND DISTRICT, PORTION NORTH SALT SPRING, & SEC 7	R
239 Quarry Drive	009-555-731	LOT 3, PLAN VIP46155, SECTION 6&7, RANGE 1W, COWICHAN LAND DISTRICT, PORTION NORTH SALT SPRING	R
434 Baker Road	009-555-781	LOT 5, PLAN VIP46155, SECTION 6, RANGE 1W, COWICHAN LAND DISTRICT, PORTION NORTH SALT SPRING	R
431 Baker Road	000-014-656	LOT AM2, PLAN VIP7144, SECTION 6, RANGE 1W, COWICHAN LAND DISTRICT, PORTION NORTH SALT SPRING, EXCEPT PLAN 40042, EXC PT IN PL 40042	R

This EA is provided in support of proposed coastal erosion mitigation development activities (the project) at the Site within the shoreline DPA. The project is proposed in response to identified bluff failure that is occurring due to the following mechanisms: 1) upland conveyance of rainwater contributing to pore water pressure in the soils/surficial material wedge sitting atop bedrock coastal bluffs, and 2) wave action creating toe erosion (bedrock) or undercutting (sediments). These issues and mechanisms have been outlined in detail within Geohazard Assessment Reports that were completed for each property listed in Table 1 by a Qualified Professional (QP) (submitted separately).

Design mechanisms are currently being developed; it is planned that a beach nourishment technique will be applied to the Site. This is determined by following the marine shoreline design guidelines decision tree (Johannessen et al. 2014). This technique involves the strategic placement of material (e.g., sand, gravel) to reduce erosion of upper beach and backshore areas. Placement of gravel and limited fines creates porosity and air space to decrease wave energy along the shoreline. Materials sourced for the proposed beach nourishment would be brought in via barge and applied to specific areas at the Site, as directed by a QP.

This EA document, in combination with the Geohazard Assessment Reports, will be utilized to inform future coastal erosion mitigation development activities, as determined by a QP, to target the identified bluff failure at the Site. This EA will be updated to include potential environmental effects of the proposed project and recommended environmental protection measures once formalized project design details have been received. All future proposed coastal erosion mitigation development activities must be



completed in accordance with the Salt Spring Island Official Community Plan (OCP) Bylaw No. 434 as well as relevant provincial and federal legislation.





Site Location

Property Boundary



0 25 50 100 150 200 Meters
 Project: 235 Quarry Road, 239 Quarry Road, 431 Baker Road & 434 Baker Road
 Sources: Capital Regional District

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 COR-2023-050

Rev. #	Date
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Figure 1

1.1 REGULATORY FRAMEWORK

This environmental assessment is designed to comply with the provisions set out in the Salt Spring Island Official Community Plan (OCP) Volume 2 Part E for development permit areas (DPAs) and for compliance with the provisions for environmental protection contained in the following relevant legislation:

Municipal

Salt Spring Island OCP, Bylaw No. 434 (Salt Spring Island Local Trust Committee 2008)

DPA 3 - Shoreline

“Development Permit Area 3 is shown on Map 20. It is all that area of land covered by water between the natural boundary of the sea and a line drawn parallel to and 300 m seaward of the natural boundary of the sea. It also encloses the land within 10 m of the natural boundary of the sea (measured horizontally) in areas where the marine environment has been identified as being particularly sensitive to development impacts.

Development Permit Area 3 is designated according to Section 879 (1)(a) of the Municipal Act to identify objectives and guidelines for the form and character of the commercial and general employment development allowed on the water surface. It is also designated according to Section 879 (1)(a) and (b) to protect the natural environment and to protect development from hazardous conditions.”

Objectives for DPA 3 include the following:

- “To protect the quality of the tidal waters that surround Salt Spring Island.
- To protect fish and wildlife habitat.
- To prevent erosion and hazardous conditions that could result from interrupting the natural geohydraulic processes along the shoreline.
- To protect development from hazardous conditions. BL488 (07/20)
- To protect the natural beauty of the island's shoreline areas where commercial and general employment developments are allowed.
- To ensure such development is unobtrusive and contributes to the natural, public character of the Crown foreshore.”

The development permit areas are shown in Figure 2. The guiding principle for the use of Development Permits is found within the *Local Government Act*. Development Permit Areas can be designated for purposes such as, but not limited to: protects, enhances and restores the biodiversity and ecological values and functions of environmentally sensitive areas; fosters compatibility between development, existing land uses and environmentally sensitive areas; maintains connectivity between sensitive ecosystems; and protects water quality and quantity.

Provincial

- Wildlife Act (1996)
- Invasive Species Council of BC
- *Weed Control Act* (1996, current as of October 2016)



Federal

- Migratory Birds Convention Act (1994)
- Species at Risk Act (SARA) (2002)
- Fisheries Act (2019)
- Canadian Environmental Protection Act (CEPA) (1999)
- Canadian Navigable Waters Act (1985)

Guidelines

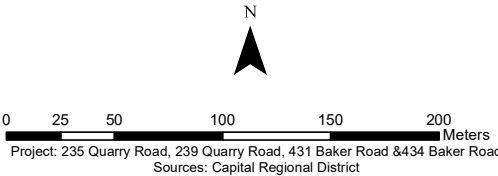
Washington State Aquatic Habitat Guidelines Program: Marine Shoreline Design Guidelines (2014)
<https://wdfw.wa.gov/sites/default/files/publications/01583/wdfw01583.pdf>





Development Permit Area 3 - Shoreline

- Shoreline - Forshore
- Shoreline - On-land portion
- Property Boundary



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COR-2023-050

Rev. #	Date
0	October 19, 2023

Figure 2

2 SCOPE OF WORK

Corvidae completed an environmental assessment for the aforementioned properties listed in Table 1. The environmental assessment documented the ecological features on the Site with a focus on the shoreline and foreshore areas. Background information was reviewed, including applicable databases. During the assessment, the following features were documented in this report:

- Areas of sensitivity, including the marine shoreline environment.
- Areas of habitat and biodiversity values.
- Plant communities and plant species on site.
- Potential wildlife presence and wildlife habitat.
- Soil types and terrain.
- Surface water flow patterns.

3 METHODS

3.1 DESKTOP REVIEW

Baseline biophysical conditions were compiled by reviewing the best available data and information including existing reports for the area and conducting searches of online provincial and federal databases:

- BC Conservation Data Centre (BC CDC 2023a and 2023b).
- BC HabitatWizard (Province of BC 2023).
- Aerial photographs of the property (Google Earth 2023).
- CRD mapping system and database (CRD 2021).
- MapIT application (Islands Trust 2023)
- Salt Spring Island Official Community Plan Bylaw No. 434 (Salt Spring Island Local Trust Committee 2008).

3.2 FIELD ASSESSMENT

A field assessment of the property was completed by a Qualified Environmental Professional (QEP) from Corvidae. The assessment included characterization of vegetation and habitat types, wildlife sign and species observations, wildlife habitat, and assessed the current conditions of the Site.

4 ENVIRONMENTAL SITE ASSESSMENT

Corvidae completed a site visit on May 30th, 2023. Site photos are included as Appendix A.

4.1 CLIMATE AND BIOGEOCLIMATIC ZONE

The project is located within the Coastal Douglas-fir (CDF) biogeoclimatic zone, specifically in the Moist Maritime Coastal Douglas-fir Subzone (CDFmm) (BC CDC 2021b). The CDFmm occurs at low elevations (<150 m) along southeast Vancouver Island, the southern Gulf Islands, and part of the Sunshine Coast. The CDFmm has the mildest climate in Canada. This subzone has a long growing season with warm, dry summers and mild, wet winters.

4.2 TERRAIN AND SOILS

Soils in the CDF biogeoclimatic zone, generally derived from morainal, colluvial, and marine deposits, are typically Brunisols, grading with increased precipitation to Humo-Ferric Podzols (Nuszdorfer et al. 1991). Soils on the Site are generally comprised of loam, well-draining, Orthic Dystric Brunisol soils. (GALIANO soil association) (BC SIFT 2018). The Site slopes moderately to steeply from northeast to southwest in the direction of the shoreline.

4.3 VEGETATION

South-facing, dry banks along the shoreline and immediate backshore area were forested and characterized by a Douglas-fir – arbutus woodland with lesser amounts of shore pine and Garry oak. The structural stage was observed to be young forest with larger (mid-seral) trees occurring intermittently. Species observed are consistent with the red-listed Douglas-fir – arbutus ecological community, which is an ecological community that is at risk of being lost (extirpated, endangered or threatened) in BC. Understory species in the immediate backshore included predominantly low growth of salal and dull Oregon-grape. Banks along the shoreline were characterized by pink (hairy) honeysuckle, grasses, weeds, evergreen huckleberry, and invasive species. The moss layer was very poorly developed near the shoreline.

All vegetation species detected during the site assessment are listed in Table 2. Six invasive species were observed, including English ivy, scotch broom, Himalayan blackberry, bull thistle, oxeye daisy, and spurge-laurel. All are listed as Control Species according to the Capital Regional District, whereby established infestations of these species are common and widespread throughout the Capital Region. Control should be focused in high value conservation areas¹.

¹ Capital Regional District. 2019. Status List for Priority Invasive Plants in the Capital Region. Available at: https://www.crd.bc.ca/docs/default-source/default-document-library/2019-03--regional-priority-invasive-species-list.pdf?sfvrsn=836aceca_0.



Table 2. Plant species observed on site during the field visit on May 30, 2023.

Common Name	Scientific Name	BC Provincial Status ¹	SARA Schedule 1 Status ²
Arbutus	<i>Arbutus menziesii</i>	Yellow	--
Baldhip rose	<i>Rosa gymnocarpa</i>	Yellow	--
Balsam poplar	<i>Populus balsamifera</i>	Unknown	--
Bigleaf maple	<i>Acer macrophyllum</i>	Yellow	--
Blue wildrye	<i>Elymus glaucus</i>	Yellow	--
Bracken fern	<i>Pteridium aquilinum</i>	Yellow	--
Broadleaf stonecrop	<i>Sedum spathulifolium</i>	Yellow	--
Bull thistle	<i>Cirsium vulgare</i>	Invasive ; Exotic	--
Common lamb's-quarters	<i>Chenopodium album</i>	Exotic	--
Common snowberry	<i>Symphoricarpos albus</i>	Yellow	--
Common sow-thistle	<i>Sonchus oleraceus</i>	Exotic	--
Douglas-fir	<i>Pseudotsuga menziesii</i>	Yellow	--
Dull Oregon-grape	<i>Mahonia nervosa</i>	Yellow	--
Evergreen huckleberry	<i>Vaccinium ovatum</i>	Yellow	--
English ivy	<i>Ilex aquifolium</i>	Invasive ; Exotic	--
Field elm	<i>Ulmus minor</i>	Exotic	--
Garry oak	<i>Quercus garryana</i> var. <i>garryana</i>	Yellow	--
Himalayan blackberry	<i>Rubus armeniacus</i>	Invasive ; Exotic	--
Oceanspray	<i>Holodiscus discolor</i> var. <i>discolor</i>	Yellow	--
Oxeye daisy	<i>Leucanthemum vulgare</i>	Invasive ; Exotic	--
Pacific crab apple	<i>Malus fusca</i>	Yellow	--
Perennial sow-thistle	<i>Sonchus arvensis</i>	Exotic	--
Pink honeysuckle	<i>Lonicera hispidula</i>	Yellow	--
Red alder	<i>Alnus rubra</i>	Yellow	--
Salal	<i>Gaultheria shallon</i>	Yellow	--
Scotch broom	<i>Cytisus scoparius</i>	Invasive ; Exotic	--
Scouler's willow	<i>Salix scouleriana</i>	Yellow	--
Slough sedge	<i>Carex obnupta</i>	Yellow	--
Spurge laurel	<i>Daphne laureola</i>	Invasive ; Exotic	--
Trailing blackberry	<i>Rubus ursinus</i>	Yellow	--
Tufted hairgrass	<i>Deschampsia cespitosa</i>	Yellow	--
Western redcedar	<i>Thuja plicata</i>	Yellow	--
Willow dock	<i>Rumex transitorius</i>	Yellow	--

¹ BC CDC 2023a² Government of Canada 2023a

4.4 WILDLIFE

The trees on the Site and within surrounding areas provide nesting and roosting habitat for birds, including migratory songbirds, year-round resident species, raptors, and owls. Understory shrubs, although lacking in density overall, may provide nesting habitat for birds and small mammals. One bald eagle nest is mapped by the Wildlife Stewardship Atlas (WiTS) approximately 400-500 m northwest of the Site (Nest ID BAEA-101-433), however, there are no trees shown at this mapped location based on available aerial imagery. No nests were observed during the site assessment.

South-facing slopes may provide suitable habitat for reptiles and forested areas are likely frequented by both large and small mammals. The marine environment is also anticipated to support many species (e.g., river otter, plainfin midshipman, shorebirds, waterfowl, marine mammals, etc.) given the presence of eel grass beds and surf smelt and Pacific sandlance spawning habitat that are mapped in proximity to the proposed project area (MapIT 2023). Belted kingfisher nesting burrows were observed in several locations along the proposed project area (Photo 4). The species listed in Table 3 were observed on or near the Site during the assessment.

Table 3. Wildlife Species observed on site during the field visit on May 30, 2023.

Common Name	Scientific Name	BC Provincial Status ¹	SARA Schedule 1 Status ²
American robin	<i>Turdus migratorius</i>	Yellow	--
Bald eagle	<i>Haliaeetus leucocephalus</i>	Yellow	--
Brown creeper	<i>Certhia americana</i>	Yellow	--
Chestnut-backed chickadee	<i>Poecile rufescens</i>	Yellow	--
Dark-eyed junco	<i>Junco hyemalis</i>	Yellow	--
Orange-crowned warbler	<i>Vermivora celata</i>	Yellow	--
Red breasted nuthatch	<i>Sitta canadensis</i>	Yellow	--
Spotted towhee	<i>Pipilo maculatus</i>	Yellow	--

¹ BC CDC 2023a

² Government of Canada 2023a

4.5 MARINE ENVIRONMENT

The shoreline type within the proposed project area is classified as low rock/boulder (Islands Trust n.d.). As per Map 11 of the Salt Spring Island OCP, a portion of the shoreline near 431 and 434 Baker Road is classified as an 'Environmentally Sensitive Shoreline Area' (Figure 3). Suitable forage fish spawning habitat is mapped in this area for surf smelt and Pacific sand lance. These species are an important food source for marine predators. Other notable marine environmental features include the presence of mapped eelgrass beds (flat, continuous) and patches just offshore in proximity to the Site that provide habitat for herring and forage fish (Map 13b, Galiano Conservancy 2014).



Capital Regional District

Sensitive Shoreline Area

- Sensitive Shoreline Area
- Property Boundary

Forage Fish Spawning Habitat

- Surf Smelt
- Surf Smelt/Pacific Sandlance

Eelgrass Meadow (2022)

- Dense
- Moderate
- Undetermined



0 100 200 400 600 Meters
Project: 235 Quarry Road, 239 Quarry Road, 431 Baker Road & 434 Baker Road
Sources: Capital Regional District

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Corvidae Project No.
COR-2023-050

Rev. #	Date
0	October 19, 2023
1	October 23, 2023

Figure 3

4.6 SPECIES AT RISK

A query of the BC CDC iMap tool yielded occurrences of 5 species and 5 ecological communities at risk within a two-kilometer radius of the property, including one (1) masked occurrence (BC CDC 2023b). Species are listed in Table 3 and the location of occurrences in relation to the property is provided in Figure 4.

One ecosystem at risk overlaps the Site boundary: the Garry oak / California brome (*Quercus garryana* / *Bromus carinatus*) ecological community (red-listed). This occurrence is based on Terrestrial Ecosystem Mapping (TEM) and has not been confirmed on the ground (Province of BC 2023). This ecological community was not detected during the site assessment. Species observed near the shoreline within the Site most closely characterize the Douglas-fir / arbutus ecological community (coniferous woodland habitat) which is also red-listed but is not mapped in this area by the CDC. This community has been impacted through disturbance associated with residential development along the shoreline.

No other species or ecosystems listed in Table 4 were detected on the Site during the assessment. Suitable habitat was not identified on the Site for the species listed in Table 4.

Table 4. Species at risk that may occur in the vicinity of the Site.

Common Name	Scientific Name	BC Provincial Status ¹	SARA Schedule 1 Status ²
Species			
Threaded vertigo	<i>Vertigo rowellii</i>	Blue	Special Concern
Painted Turtle - Pacific Coast Population	<i>Chrysemys picta</i> pop. 1	Red	Threatened
Macrae's clover	<i>Trifolium dichotomum</i>	Red	n/a
Leafless wintergreen	<i>Pyrola aphylla</i>	Blue	n/a
Western screech-owl, <i>kennicottii</i> subspecies	<i>Megascops kennicottii kennicottii</i>	Blue	Threatened
Ecological Community			
Garry oak / oceanspray	<i>Quercus garryana</i> / <i>Holodiscus discolor</i>	Red	n/a
Garry oak / California brome	<i>Quercus garryana</i> / <i>Bromus carinatus</i>	Red	n/a
Grand fir / dull Oregon-grape	<i>Abies grandis</i> / <i>Mahonia nervosa</i>	Red	n/a
Douglas-fir / dull Oregon-grape	<i>Pseudotsuga menziesii</i> / <i>Mahonia nervosa</i>	Red	n/a
Trembling aspen / Pacific crab apple / slough sedge	<i>Populus tremuloides</i> / <i>Malus fusca</i> / <i>Carex obnupta</i>	Red	n/a

¹ BC CDC 2023a

² Government of Canada 2023a



A query of the Fisheries and Oceans Canada Species at Risk Distribution Map (Government of Canada 2023b) yielded the following marine species at risk that have the potential to occur in proximity to the project:

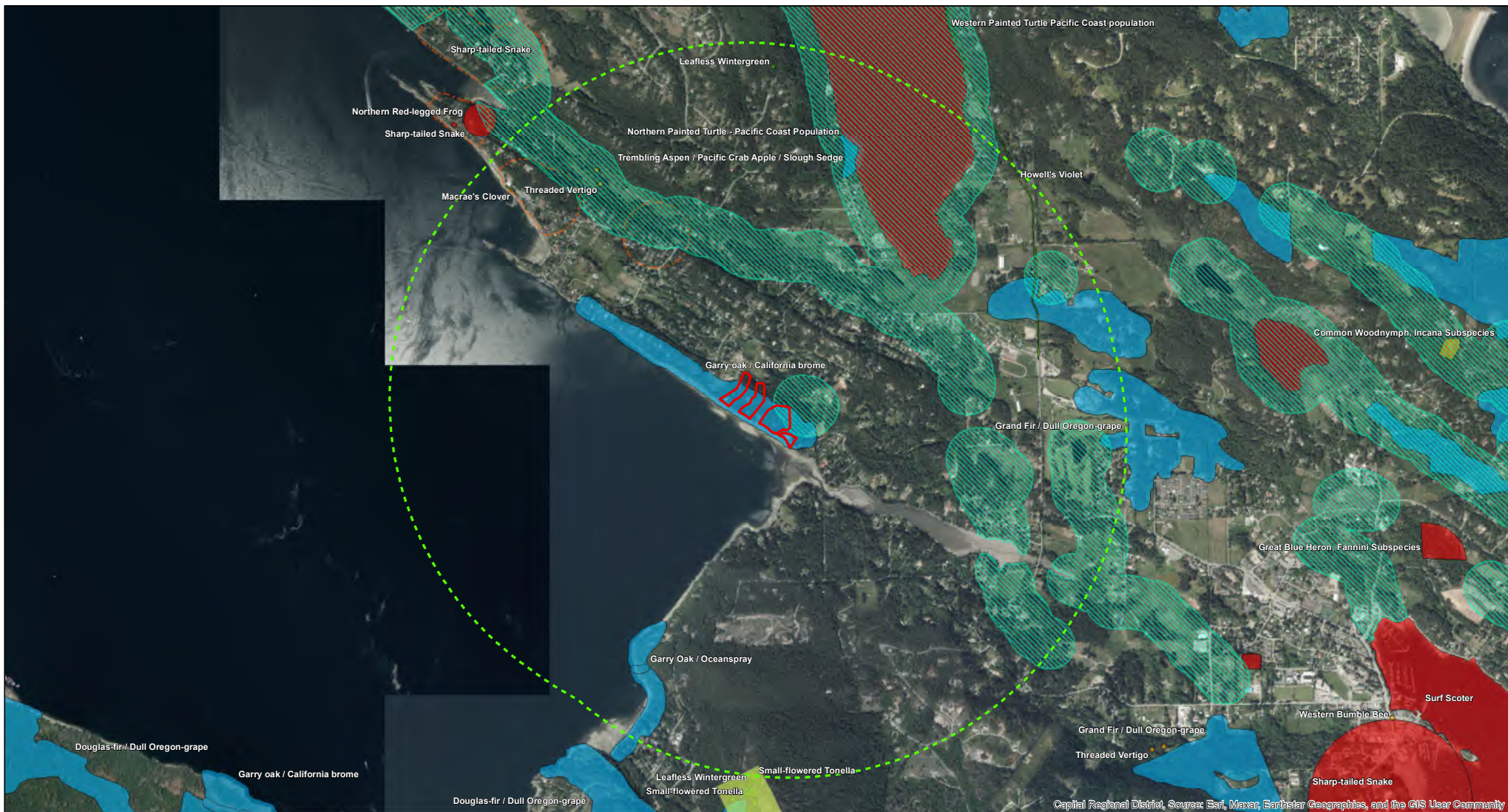
Table 5. Aquatic species at risk that may occur in the vicinity of the Site.

Common Name	Scientific Name	SARA Schedule 1 Status ¹
Steller Sea Lion	<i>Eumetopias jubatus</i>	Special Concern
Killer Whale (Northeast Pacific southern resident population)	<i>Orcinus orca</i>	Endangered
Killer Whale (Northeast Pacific transient population)	<i>Orcinus orca</i>	Threatened
Humpback Whale	<i>Megaptera novaeangliae</i>	Special Concern
Harbour Porpoise	<i>Phocoena phocoena</i>	Special Concern
Grey Whale (Eastern North Pacific population)	<i>Eschrichtius robustus</i>	Special Concern
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	Endangered
Northern Abalone	<i>Haliotis kamtschatkana</i>	Endangered
Yelloweye Rockfish	<i>Sebastes ruberrimus</i>	Threatened
Tope	<i>Galeorhinus galeus</i>	Special Concern

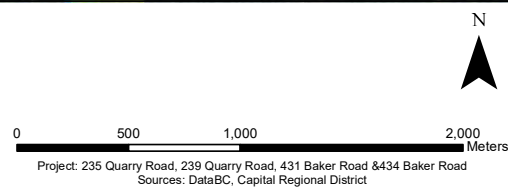
¹ Government of Canada 2023a

CRITICAL HABITAT

A mapped western painted turtle critical habitat polygon overlaps the northeastern corner of 434 Quarry Road (Province of BC 2023b; Figure 4). Critical habitat mapping is based on known occurrences and potential occurrences of suitable aquatic habitat features. Critical habitat may include lakes, ponds, marshes, river channels, roadside or drainage ditches, sluggish streams, and sloughs, and up to 150m of terrestrial habitat surrounding the aquatic feature, as most Western painted turtles in B.C. are typically found within 150m from water (Environment and Climate Change Canada 2018). The critical habitat polygon is associated with an unnamed lake that is located upslope of the project area. The project area includes only the immediate shoreline area which is not considered suitable habitat for western painted turtle.



SAR and critical habitat within 2 km of the site



	Rev. #	Date
	0	October 19, 2023
Corvidae Project No. COR-2023-050		Figure 4

5 POTENTIAL ENVIRONMENTAL IMPACTS AND RECOMMENDED ENVIRONMENTAL PROTECTION MEASURES

A list of environmental considerations is provided below based on current project design. This list may be updated in future should the design plans change.

- Impacts on sensitive terrestrial ecosystem areas, such as upland woodland habitat.
- Impacts on sensitive marine features, such as mapped suitable forage fish spawning habitat.
- Impacts on existing shoreline sediment delivery systems.
- Impacts on benthic organisms.
- Impacts that could compromise archaeological, First Nations cultural, historical, heritage sites or significant or outstanding landscape features.
- Spread of invasive plant species.
- Changes in wildlife habitat availability and wildlife mortality risk.
- Sediment movement in the project area.

Preliminary mitigation measures for the proposed beach nourishment works includes the following:

- Construction will be completed during periods of low tide (work in the dry).
- Ensure that works are overseen by an Environmental Monitor (EM)
- Enhancement of backshore vegetation through planting of native species, particularly overhanging species such as Oceanspray. This is included in the detailed design plan with specific plant species, locations, spacing, methods of planting and maintenance.
- Apply suitable substrate for forage fish spawning in the upper reaches of the beach profile where feasible.
- Match borrowed substrate with native sediments within the project area (mimic natural conditions).
- Maintain the current natural beach slope to the extent possible.
- Execute beach nourishment activities when birds or other mobile organisms are the least active.
- Avoid mapped suitable spawning forage fish habitat and ensure that the timing of project works does not interfere with forage fish spawning.
- Install belted kingfisher nest boxes.
- Remove invasive species along the backshore and re-plant with native species.



6 REFERENCES

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APPENDIX A – SITE PHOTOGRAPHS

Photo 1. Close-up of foreshore ground, looking southeast. May 30, 2023.



Photo 2. West view of the foreshore environment. May 30, 2023



Photo 3. Invasive species infestation near 431 Quarry Road, looking north. May 30, 2023.



Photo 4. Northeast view of belted kingfisher nesting burrows. May 30, 2023.



Photo 5. North view of upland forested habitat. May 30, 2023.



Photo 6. View of cliff/shoreline bank, looking west. May 30, 2023.



Photo 7. Southwest view of backshore environment at 235 Quarry Road. May 30, 2023.



Photo 8. North view of riprap placement at CRD beach access near 431 Baker Road. May 30, 2023.





MEMORANDUM

File No.: PLDP20240059 - 434 Baker Rd
X-Ref PLDP20240057 - 239 Quarry Dr.
File: PLDP20240056 - 235 Quarry Dr.

DATE: May 8, 2025
TO: Legislative Clerk
Salt Spring Island Team
FROM: Stefan Cermak, Director, Planning Services
COPY: Oluwashogo Garuba, A/Planner 2
Chris Hutton, Regional Planning Manager, Salt Spring
SUBJECT: Delegated Development Permit Application
Applicant: Bradley Fossen
Location: 434 Baker Rd, Salt Spring Island, BC

PURPOSE

The purpose of this memo is to not approve issuance of development permit PLDP20240057 (Fossen) pursuant to Land Use Permit Delegation Bylaw 534.

I have reviewed the staff report and professional reports (Attachment 1) and have concluded that the proposed development activities are not consistent with the objectives and guidelines of the development permit area. Specifically, the proposed sparse placement of boulders and installation of beach sediments conflict with Salt Spring Island Official Community Plan (OCP) Bylaw No. 434, 2008 objectives E.3.3.1 and E.3.3.2 and guidelines E.3.4.1; E.3.4.2; E.3.4.9; E.3.4.21; and E.3.4.22.

The applicant may have the decision not to approve issuance reconsidered by the Salt Spring Island Local Trust Committee by submitting a written request for reconsideration to the Deputy Secretary/Legislative Clerk within thirty days after the decision is delivered to or made available to the applicant.

The request for reconsideration must include the following:

- The applicant's address for receiving correspondence related to the request for reconsideration;
- A copy of the written decision;
- Reasons why the applicant wishes the decision to be reconsidered by the Local Trust Committee;
- The decision which the applicant requests be made by the Local Trust Committee;
- Reasons in support of the decision requested from the Local Trust Committee; and
- A copy of any documents which support the applicant's request for reconsideration by the Local Trust Committee.

Each reconsideration request shall be placed on the agenda of a regular Local Trust Committee meeting and shall include a copy of the materials that were considered by the Director of Planning Services (the "delegate") in making the decision that is to be reconsidered, and any further materials delivered by the applicant.

The Local Trust Committee may consider any presentations made by the applicant and may either:

- confirm all or part of the delegate’s decision,
- set aside all or part of the delegate’s decision; or
- amend the delegate’s decision or make a new decision.

NEXT STEPS

Director of Planning Services to contact applicant to inform them of decision. Applicant to consider appeal within 30 days. Deputy Secretary/Legislative Clerk to place appeal and relevant materials on regular Local Trust Committee agenda if applicable. Director to inform Local Trust Committee of decision once applicant has been informed. Planner to update file and/or direct Planning Team Assistant to update electronic file.

Submitted By:	Stefan Cermak, Director, Planning Services	May 8, 2025

ATTACHMENTS

1. Staff Report dated April 29, 2025 – with attachments

DATE: April 23, 2025
TO: Stefan Cermak, Director of Planning Services
FROM: Oluwashogo Garuba, A/Planner 2
Salt Spring Island Team
COPY: Chris Hutton, Regional Planning Manager
SUBJECT: Delegated Development Permit Application
Applicant: Bradley Fossen
Location: 434 Baker Road, Salt Spring Island, BC

RECOMMENDATION

1. That the Director of Planning Services not approve issuance of PLDP20240059 (434 Baker Road) as the proposed activities are not consistent with several Development Permit Area 3 (DPA 3) guidelines within the Salt Spring Island Official Community Plan (OCP) Bylaw No. 434, 2008.

REPORT SUMMARY

This report is to consider issuance of a delegated Development Permit (DP) application for the proposed beach erosion mitigation activity within the **Development Permit Area 3 – Shoreline Zones** located at 434 Baker Road, SSI (009-555-781). The application is supported by a letter of advice from the Department of Fisheries and Oceans and the following reports:

- Marine shoreline characteristics report;
- Geohazard assessment report;
- Environmental assessment report.

These reports and the proposal have been assessed by staff against the guidelines for development in DPA 3 as outlined in the Salt Spring Island Official Community Plan (OCP) Bylaw No. 434, 2008 and were found not to be substantially in accordance with the objectives and guidelines of DPA 3. Staff therefore recommends denying issuance of the requested DP.

BACKGROUND

The 2.2 hectares (5.43 acres) property, zoned Rural (R) is located at 434 Baker Road, SSI. The applicant has proposed shoreline stabilization works due to the identified bluff failure at the subject property which is occurring as a result of upland conveyance of rainwater contributing to pore water pressure in the soils/surficial material wedge sitting atop bedrock coastal bluffs and wave action creating toe erosion

(bedrock) or undercutting (sediments). Because of this, the owner of this property has proposed the following mitigation activities based on the recommendations of the professional Geophysicist and the reports of the geohazard and environmental assessments that were carried out:

1. Backshore planting of grasses and sedge to create clumps on the backshore terrace in order to encourage sediment accumulation.
2. Coastline planting of salt tolerant woody species of trees.
3. Planting of hydrophilic species common to the Douglas-fir-arbutus woodland species understory.
4. Sparse placement of boulders to accomplish wave deflection along the low-tide terrace to mimic and enhance the natural process.
5. Installation of beach sediments in order to dissipate incoming wave energy by changing the plunging breaker wave type (higher erosion) occurring under storm event conditions to a surging breaker wave type (lower erosion).

According to the Salt Spring Island Official Community Plan (OCP) Bylaw No. 434, 2008 guidelines for development within the DPA 3, the construction of shoreline stabilization works is not exempt from the requirement to obtain a development permit (Section E.3.1.2) in order to achieve the objectives of the DPA 3.

Therefore, a DP application is required for the proposed construction of shoreline stabilization works within the DPA 3. The Salt Spring Island Delegation Bylaw No. 534, 2022 delegates the consideration of this application and its issuance to the Director of Planning Services.



Figure 1: Subject property



Figure 2: Ortho photo of subject property

Official Community Plan:

The Salt Spring Island Official Community Plan No. 434 designates the subject property as Rural Neighbourhood (RL) and the marine area as Marine Other. Staff note that a rock outcrop is approximately 50m from the natural boundary immediately adjacent to the subject property (Figure 3). This rock outcrop and another southeast of the subject property is designated as Parks and Recreation. The designation highlights one aspect of the public value of the area as a recreational site.

Land Use Bylaw:

The subject property is zoned Rural (R) in the Salt Spring Island Land Use Bylaw (LUB) No. 355, 1999 while the proposed erosion mitigation activities will be taking place within Shoreline 6 (S6) zone. The rock outcrops approximately 50m from the natural boundary are zoned Parks and Reserve 6.

The proposed development has been recommended by Thomas R Elliot, P. Geo (Geohazard Assessment report, 2023) to protect the marine environment from erosional geohazard.

Development Permit Area 3 – Shoreline (DPA 3)

The subject property is within DPA 3. This includes all the area of land covered by water between the natural boundary of the sea and a line drawn parallel to and 300 m seaward of the natural boundary of the sea. It also encloses the land within 10m of the natural boundary of the sea (measured horizontally) in areas where the marine environment has been identified as being particularly sensitive to development impacts.

This Development Permit Area includes shoreline waters and natural fish and wildlife habitat that could be subject to degradation due to development. It also includes areas of land that lie adjacent to and influence the island's most sensitive shoreline environments. Shoreline areas and beaches may contain unstable slopes and soils subject to erosion, land slip and rock falls. There are also high aesthetic values along shoreline areas.

The objectives of DPA 3 (Section E.3.3) are:

- To protect the quality of the tidal waters that surround Salt Spring Island.
- To protect fish and wildlife habitat.
- To prevent erosion and hazardous conditions that could result from interrupting the natural geo-hydraulic processes along the shoreline.
- To protect development from hazardous conditions.
- To protect the natural beauty of the island's shoreline areas where commercial and industrial developments are allowed. To ensure such development is unobtrusive and contributes to the natural, public character of the Crown foreshore.

As per subsection E.3.1.2 article (f), DPA 3 is applicable when there is a construction of shoreline stabilization works.

2024 DPA 3 Assessment Report

1. ***Environmental Assessment Report:*** was prepared by Erin Vekic, R.P. Bio, M. Sc. for this proposed development. According to Erin Vekic, the environmental assessment (EA) was designed to comply with the DPA 3 guidelines outlined in the OCP. Although several mitigation measures were proposed in the report, the potential impact of the activities were not identified in the report. Also, the report

did not specify how the fine gravel and sediments proposed for erosion control will remain in place in order to control the erosion. The report also did not indicate the potential impact to the eelgrass beds and forage fish spawning areas.

2. **Geohazard Assessment Report:** was prepared and submitted by Thomas R Elliot, PhD P. Geo P. Ag. The report indicated that there is a low risk of landslide hazard impacting the single-family dwelling but there is a high risk of erosional geohazard impacting the marine environment in an ongoing and progressive manner. The proposed erosion mitigation activities according to the report do not increase the hazard rating to the existing single-family dwelling.
3. **Final Summary Report on Mitigation:** was prepared and submitted by Thomas R Elliot, PhD P. Geo P. Ag., dated January, 2024. The report indicated that the erosion mitigation activities to be carried out to minimize the impact of the erosion happening on the shoreline. The report however did not indicate how long the beach nourishment will be able to dissipate the incoming wave energy before the sediments get dispersed.

Development Permit

Staff has not attached a draft permit at this time as the proposed development activities do not meet the DPA 3 guidelines. However, staff may report back with a draft Development Permit if the Director determines that the DPA 3 guidelines are met.

Rationale for Recommendation

The recommendations on page 1 are supported as:

- the proposed activities are not consistent with the following guidelines of DPA 3:
 - E.3.4.1: All work that takes place below the natural boundary of the sea should be done in a way that minimizes degradation of water quality and disturbance of the substrate. - There is potential for disturbance of substrate arising from the proposed sediment deposit and use of machinery.
 - E.3.4.2: All work that takes place on land within 10 m of the natural boundary of the sea should be planned and carried out in a way that is consistent with the Land Development Guidelines for the Protection of Aquatic Habitat (Appendix 7).
 - The deposit of sediments is likely to have negative impact on the fish habitat and the applicant has neither provided information on the likely impacts of this activity nor provided mitigation measure to minimize these potential impacts.
 - E.3.4.9: The shoreline should not be filled in to create additional land, except minor areas of fill necessary to complete the boardwalk section of the Ganges Public Pathway System in Ganges Harbour.
 - The proposed activity includes the deposit of 434.4m² of aggregate materials, over about 300m of shoreline and at an initial height of 1.0 m above existing grade level.
 - E.3.4.21: Applications for shoreline stabilization should include a report, prepared by a Professional Engineer with experience in geotechnical engineering, which describes the proposed modification and shows:

- a. The need for the proposed modification to protect existing structures.
- b. Where the modification is proposed to protect new structures, the locations on the property where those structures could be built and not require shoreline modification.
- c. If any natural hazards, erosion, or interruption of geohydraulic processes may arise from the proposal modification, including at sites on other properties or foreshore locations.
- d. The cumulative effect of shoreline stabilization works along the drift sector where the works are proposed.
- e. Whether there will be any degradation of water quality or loss of fish or wildlife habitat because of the modification.
- f. Whether conditions should be incorporated into the development permit to achieve the objectives of this Development Permit Area.

– It is unclear what damage to the existing structure that the proposed activities is preventing and as a result of the increased turbidity from sediment supplementation, there could be a negative impact on the fish habitat.

E.3.4.22: Shoreline stabilization should be limited to that necessary

- a. To prevent damage to existing structures or an established use on adjacent upland.
- b. To prevent damage to a proposed public land use.

New upland structures or additions should be located and designed to avoid or reduce the need for shoreline stabilization. Shoreline stabilization should not interrupt natural processes solely to reduce erosion of undeveloped land, except agricultural land. – The public use of the land is not considered as damaging by the naturally occurring slow sediment erosion.

- the proposed development activities are not consistent with some of the relevant objectives of the DPA 3:
 - E.3.3.1: To protect the quality of the tidal waters that surround Salt Spring Island.
 - E.3.3.2: To protect fish and wildlife habitat.

-- The proposed activities are likely to negatively impact the quality of tidal water as well as the fish and wildlife habitat through the changes to the sediment transport and water flow as a result of the sediment supplementation.

ALTERNATIVES

The Director may consider the following alternatives to the staff recommendations:

1. Request further information

The Director of Planning Services may request further information prior to making a decision. If selecting this alternative, the Director should describe the specific information needed and the rationale for this request.

2. Approve the application

The Director of Planning Services may determine that the guidelines are met and approve the application. If selecting this alternative, staff will return with a draft DP for consideration.

Submitted By:	Oluwashogo Garuba, A/Planner 2	April 23, 2025
Concurrence:	Chris Hutton, Regional Planning Manager	May 7, 2025

ATTACHMENTS

1. Site Context
2. DPA Guideline Checklist
3. Geohazard Assessment Report
4. Marine shoreline Characteristics Assessment Report
5. Summary of Baker Beach Shoreline Erosion Mitigation Recommendations Report
6. Environmental Assessment Report
7. DP Delegation Checklist (Staff only)

ATTACHMENT 1 – SITE CONTEXT

LOCATION

Legal Description	LOT 5, SECTION 6, RANGE 1 WEST, NORTH SALT SPRING ISLAND, COWICHAN DISTRICT, PLAN 46155
PID	009-555-781
Civic Address	434 Baker Road, Salt Spring Island, BC
Lot Size	21,974.45m ² 2.2 ha

LAND USE

Current Land Use	R – Rural
Surrounding Land Use	Shoreline 6 (S6) Rural - R

HISTORICAL ACTIVITY

File No.	Purpose
SS-BP-2012.15	To construct single family dwelling

POLICY/REGULATORY

Official Community Plan Designations	Salt Spring Island OCP No. 434, 2008 Designations: Rural Neighbourhoods – RL; Development Permit Areas: DPA 3 - SHORELINE
Land Use Bylaw	Salt Spring Island LUB No. 355, 1999: Rural (R)
Covenants	Undersurface Rights, 337530G; Covenant, S137231
Bylaw Enforcement	None

SITE INFLUENCES

Islands Trust Conservancy	The Islands Trust Conservancy does not have any consideration for the application.
Regional Conservation Strategy	The Islands Trust Conservancy regional conservation plan has a high priority for conservation of eelgrass bed located at the shoreline areas of the proposed development activities.
Species at Risk	Western Painted Turtle Pacific Coast population
Sensitive Ecosystems	Woodland
Hazard Areas	Moderate and Low risk steep slopes.
Archaeological Sites	Remote Access to Archaeological Data (RAAD) information indicates there are no archaeological sites on the property. However, there are areas of archaeological potential mapped on the property, therefore the applicant will be sent the Islands Trust Chance Find Protocol and provincial guidance on archaeological sites upon development permit application review. By copy of this report, the owners and applicant should be aware that unrecorded archaeological material is protected under the <i>Heritage Conservation Act</i> . If such material is encountered during development, all

	work should cease and Archaeology Branch should be contacted immediately as a <i>Heritage Conservation Act</i> 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	No additional impacts to GHG emissions anticipated as a result of this application.
Shoreline Classification	Low Rock/Boulders
Shoreline Data in TAPIS	N/A

Salt Spring Island
OCP Bylaw No. 434, 2008
Development Permit Area 3 - Shoreline (DPA 3)
Guideline Checklist

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.1: All work that takes place below the natural boundary of the sea should be done in a way that minimizes degradation of water quality and disturbance of the substrate.	☐	☒	☐	Thomas R. Elliot, PhD P. Geo, has indicated that the proposed activity is taking place below the natural boundary of the sea – foreshore area. There is potential for disturbance of substrate arising from the proposed sediment deposit and use of machinery.
E.3.4.2: All work that takes place on land within 10 m of the natural boundary of the sea should be planned and carried out in a way that is consistent with the Land Development Guidelines for the Protection of Aquatic Habitat (Appendix 7).	☐	☒	☐	According to the Land Development Guidelines for the Protection of Aquatic Habitat, the deposit of sediments is likely to have negative impact on the fish habitat and the applicant has neither provided information on the likely impacts of this activity nor provided mitigation measure to minimize these potential impacts.
E.3.4.3: Native vegetation and trees are to be retained or replaced to control erosion, protect banks and protect fish and wildlife habitat.	☒	☐	☐	Proposed activity involves removal of invasive species and also the planting of native species of vegetation as outlined in the project description.
E.3.4.4: New roads and septic systems should not be located in this Development Permit Area. If such a location cannot be avoided, then the design and construction of the road or septic system should be supervised by a qualified professional to ensure that the objectives and guidelines of this Area are met	☐	☐	☒	
E.3.4.5: Structures should provide for the thorough flushing of all enclosed water areas and should not restrict the movement of aquatic life or interfere with natural shoreline processes.	☐	☐	☒	The proposed boulders and could potentially interfere with natural shoreline processes such as sediment transportation and therefore not in compliance with this guideline.
E.3.4.6 Open pile or floating breakwater designs are preferred. Solid breakwaters should not be used, except facilities that will accommodate a marina.	☒	☐	☐	Solid breakwater has not been proposed to be used in the application and therefore in compliance with this guideline.

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.7: New boating facilities that provide transient moorage should not be constructed unless access is available to adequate and convenient facilities for pump-out, holding and treating of sewage from boats. New boating facilities should be designed, located, and operated in a way that ensures there will be no discharge of toxic material from boats (for example: fuels, oils, maintenance by-products).	☐	☐	☒	
E.3.4.8: There should be no dredging to create new facilities. Maintenance dredging of existing facilities should be limited to the minimum area necessary to maximize the capacity of the existing facility. Dredging should be done with the use of silt curtains to prevent siltation of adjacent areas.	☐	☐	☒	
E.3.4.9: The shoreline should not be filled in to create additional land, except minor areas of fill necessary to complete the boardwalk section of the Ganges Public Pathway System in Ganges Harbour.	☐	☒	☐	The proposed activity does involve the filling of the shoreline. The proposed activity includes the deposit of 704.5m ² of aggregate materials, over about 300m of shoreline and at an initial height of 1.0 m above existing grade level (Report for Coastal Erosion Mitigation prepared by Thomas R Elliot TRE Environmental Services Pg. 6 & 7).
E.3.4.10: No parking areas should be located over the surface of the water, on land created by fill, or on accretion shoreforms.	☐	☐	☒	
E.3.4.11: Boat launch ramps should be located on stable, non-erosional banks where a minimum amount of substrate disturbance or stabilization is necessary. Ramps should be kept flush with the slope of the foreshore to minimize interruption of geo-hydraulic processes.	☐	☐	☒	

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.12: Preference is to be given to the placement of mooring buoys and floats instead of docks. It is also to be given to the construction of joint use docks rather than individual ones. Multifamily and strata-titled developments are to construct joint use dock facilities. No more than one facility for mooring boats is to be located next to any parcel. An exception could be made if more than one joint facility is to be located next to the common property of a strata development.	☐	☐	☒	
E.3.4.13: Docks should not be located over shellfish beds or lead to the removal of any kelp or eel grass beds.	☐	☐	☒	
E.3.4.14: Large residential docks should be located and designed to avoid the need for shore defence works, or breakwaters. If a bulkhead is to be constructed as a base for a dock, it should be constructed landward of the natural boundary of the sea.	☐	☐	☒	
E.3.4.15: Structures in contact with the water should be constructed of stable materials, including finishes and preservatives that will not degrade water quality.	☐	☐	☒	Boulders have been proposed for the project.
E.3.4.16: Piers should use the minimum number of pilings necessary, with preference to large spans over more pilings.	☐	☐	☒	
E.3.4.17: Piers should be constructed with a minimum clearance of 0.5 m above the elevation of the natural boundary of the sea.	☐	☐	☒	
E.3.4.18: All docks should be constructed so that they do not rest on the bottom of the foreshore at low water levels.	☐	☐	☒	
E.3.4.19: Any plastic foams or other non-biodegradable materials used in construction of floats and docks should be well contained to prevent escape into the natural environment.	☐	☐	☒	

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.20: Residential docks should not extend from shore any further than necessary to accommodate a small pleasure craft. Residential docks should not accommodate boats with a draft greater than 2.2 m or have floats more than 35 m ² total surface area unless more than two parcels have legal access to the dock.	☐	☐	☒	
E.3.4.21: Applications for shoreline stabilization should include a report, prepared by a Professional Engineer with experience in geotechnical engineering, which describes the proposed modification and shows: - The need for the proposed modification to protect existing structures. - Where the modification is proposed to protect new structures, the locations on the property where those structures could be built and not require shoreline modification. - If any natural hazards, erosion, or interruption of geohydraulic processes may arise from the proposal modification, including at sites on other properties or foreshore locations. - The cumulative effect of shoreline stabilization works along the drift sector where the works are proposed. - Whether there will be any degradation of water quality or loss of fish or wildlife habitat because of the modification. - Whether conditions should be incorporated into the development permit to achieve the objectives of this Development Permit Area.	☐	☒	☐	The Geotechnical report states that the purpose of erosion mitigation is to reduce risk of GU 4. The Geotechnical report submitted by the applicant indicated that the building location is safe for the use intended. The proposed erosion mitigation activities could potentially bring about an interruption of the geohydraulic process as a result of the interference with the shoreline sediment transportation. Potential water degradation could occur as a result of increased turbidity from the sediment supplementation, this could also impact the fish habitat negatively by the changes to the sediment transport and water flow as a result of the proposed erosion mitigation activities.

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.22: Shoreline stabilization should be limited to that necessary a. To prevent damage to existing structures or an established use on adjacent upland. b. To prevent damage to a proposed public land use. New upland structures or additions should be located and designed to avoid or reduce the need for shoreline stabilization. Shoreline stabilization should not interrupt natural processes solely to reduce erosion of undeveloped land, except agricultural land.	☐	☒	☐	The Geotechnical report submitted by the applicant indicated that the building location is safe for the use intended. The Geotechnical report identified a high incremental risk of geohazards for GU4.
E.3.4.23: Shoreline stabilization works should use natural means such as vegetative stabilization or protective berms rather than structural solutions such as concrete or large riprap. Applications for structural stabilization works should provide an explanation as to the need for structural solutions. Structural solutions should not be employed in the Shoreline Conservation Designation, unless an existing building is threatened by wave erosion and cannot be protected by other means.	☒	☐	☐	Applicant has confirmed that structural solutions are not considered for the proposed activity. The proposed activity will only include vegetative stabilization/restoration along with energy dissipation by sparsely placing boulders (0.5 – 1.2m boulders, sandstone or low sulphide granite, rounded to sub-rounded (no blast rock)) along the low tide terrace within the foreshore area, these will be placed at intervals and therefore considered to be consistent with this guideline. Geotechnical report provided by applicant indicates that there are no up-slope hazards likely to impact the existing single family dwelling (pg. 11).
E.3.4.24: Materials used for shoreline stabilization should consist of inert materials. Stabilization materials should not consist of debris or contaminated material that could result in pollution of tidal waters.	☒	☐	☐	QEP (Bradley Fossen) indicated that the proposed materials do not consist of debris or contaminated material as the applicant has indicated that the materials for the beach nourishment will be clean undisturbed quarry materials. Therefore, the activities will not consist of materials capable of polluting the tidal waters.

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.25: Rock weirs, groins and jetties should not be constructed. An exception could be made if it can be shown that they are part of a larger system that will reduce the need for overall shoreline modification and that they are intended to prevent damage to existing structures. They should not be proposed to protect new structures.	☐	☐	☒	
E.3.4.26: Bulkheads should only be constructed if no other alternative exists. Where bulkheads are proposed, they should not be located where geohydraulic processes are critical to shoreline conservation. Feeder bluffs, marshes, wetlands, spits or hooks should be avoided. Bulkheads should be located parallel to and landward of the natural boundary of the sea, as close to any natural bank as possible. Bulkheads should allow the passage of surface or groundwater without causing ponding or saturation. They should be constructed of stable, non-erodible materials that preserve natural shoreline characteristics. Adequate toe protection including proper footings and retention mesh should be included. Beach materials should not be used for fill behind bulkheads.	☐	☐	☒	
E.3.4.27: Where revetments are proposed, they should not result in the loss of riparian vegetation or fish habitat. The size and quantity of materials used should be limited to that necessary to withstand the estimated energy of the location's hydraulic action and prevent collapse. Filter cloth should be used to aid drainage.	☐	☐	☒	Thomas R Elliot has indicated that no revetments will be used for the proposed activity.
E.3.4.28: Where this Area includes unique native species dependent on a marine shoreline habitat which have been identified by a qualified professional as worthy of particular protection, their habitat areas should be left undisturbed. If development is permitted in these areas, it should be undertaken only under the supervision of a professional who is qualified in environmental protection, with advice from the Ministry of Environment, the Department of Fisheries and Oceans, or Environment Canada.	☒	☐	☐	The Environmental Assessment report (prepared by Erin Vekic, Corvidae Environmental Consulting Inc.) indicated the project area has some native species dependent on marine shoreline habitat and the project therefore needs to be supervised by a Qualified Environmental Professional or Registered Professional Biologist. This condition has been incorporated into the Draft Permit.

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.29 To assist in the preparation of development permits for larger projects, the Local Trust Committee could request an applicant to provide a report, prepared by a qualified professional with experience in the protection of the natural environment. The report should indicate the type of conditions that should be incorporated into the development permit to achieve the objectives and comply with the guidelines of this Development Permit Area.	☐	☐	☐	This may be considered a “larger project” due to its multiple properties involved and the overall impact to a community recreation area. I will not request this. However, the LTC may.
E.3.4.30: Buildings built over the water surface in areas zoned for commercial and general employment use in Ganges and Fulford Harbour should accommodate continuous pedestrian passage along the waterfront. Developments in Ganges should contribute to the development of the Ganges Public Pathway System, including the seawalk portion, shown on Map 17. New sections of the seawalk should be built in a way that is consistent with existing portions, ensuring barrier-free access along the entire route. For public safety, light fixtures should be provided at a consistent height and design.	☐	☐	☒	
E.3.4.31: Buildings built over the water surface should not exceed the heights allowed in the local zoning bylaw. Building form in Ganges and Fulford harbours should be consistent with the guidelines in Section E.1.6.	☐	☐	☒	
E.3.4.32: Lighting of commercial and general employment developments built over the water surface should be kept to the minimum necessary for safety and visibility. Light fixtures on such sites should be simple and unobtrusive in design. They should be carefully chosen to focus light on the area to be illuminated and avoid spillage of light into other areas. Fixtures should not result in glare when viewed from areas that overlook the sea. Low-glare fixtures with a high cut-off angle should be used. Full-spectrum fixtures are preferred. Neon lighting should not be used outside buildings.	☐	☐	☒	

Guideline	Complies			Staff Comments
	Yes	No	N/A	
E.3.4.33: Signs on commercial and general employment developments built over the water surface should not exceed the size or total area allowed by local bylaw. Signs on such sites should not move or be audible and should not incorporate lighting that moves or flashes or gives the impression of doing so.	☐	☐	☒	

Geohazard Assessment of Lands

As pertaining to land parcel:

PID 009-555-706

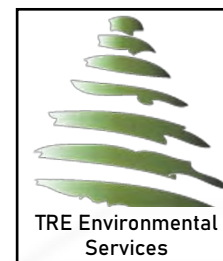
235 QUARRY DRIVE, SALT SPRING ISLAND

LOT 1, SECTIONS 6 AND 7, RANGE 1 WEST, NORTH SALT SPRING ISLAND,
COWICHAN DISTRICT, VIP46155

Report for Coastal Erosion Mitigation

Developed for: Heidi Kuhrt, David Kuhrt (Landowners)
235 Quarry Drive
Salt Spring Island, BC V8K 1J2

Developed by: Thomas R Elliot PhD P.Geo P.Ag
TRE Environmental Services
tom@elliot.org



1. Synopsis

The subject land parcel, with PID 009-555-706 and legal description of Lot 1, Plan VIP46155 (Site), is situated on the lower southwest-facing flank of a slope which terminates to the Salt Spring Island ocean-shoreline in a coastal bluff. The Site is proposed to undergo coastal erosion mitigation development activities within the Shoreline Development Permit Area¹ (DPA 3) of the Islands Trust (IT), which prompted this geohazard assessment to identify mechanisms contributing to erosion of the coastal bluff that would create hazardous conditions for existing single-family dwelling (SFD) and the natural environment.

The Site consists of a moderate-steep benching bedrock slope with a veneer to mantle of stoney sandy loam to loamy sand. There is a veneer of colluvial boulders to stones accumulated below bedrock outcropping. The slope descends from a ~58m above sea level (asl) elevation regional northwest-southeast aligned bedrock ridge. The bedrock ridge is sandstone at elevation and transitions to shale and metamorphic deposits of the Nanaimo Sedimentary Group closer to sea level. At ~10m asl elevation, a metamorphic-rock coastal bluff rises above the natural boundary and is capped with a 2 – 4m thick mantle of gravelly sandy loam.

While there is no ephemeral or permanent surface watercourse observed at Site, the presence of near-surface groundwater is apparent where bedrock outcrops force phreatic water to surface.

The erosion and sediment mass-wasting observed on Site primarily consists of two concurrent processes:

Wave action a culmination of mechanical wave-action, daily sunlight-driven thermal oscillation, and saturating water-spray promotes decomposition and failure of fine-grained metamorphic bedrock situated in the lower 6 - 7m of coastal bluff. This results in toe erosion which, over time, destabilizes the portion of coastal bluff above.

Pore water sufficient pore water pressure below the phreatic surface can acts as a destabilizing factor to overcome cohesion, friction angle and soil weight – entirely independent of toe erosion. While the majority of episodic pore water pressure erosion occurs during the rainy season, localized increases in pore water pressure can also lead to instability during otherwise drought conditions.

Through assessment of the Site subject to Shoreline DPA, Thomas R Elliot PhD P.Geo P.Ag has determined a Low risk of landslide geohazard impacting the SFD. However, there is a High risk of erosional geohazard impacting marine environment in an ongoing and progressive manner.

¹ IT Bylaw 488 - https://islandstrust.bc.ca/wp-content/uploads/2020/10/SS-BL-434_2020-10_OCP_Vol1-2.pdf

This determination is based on geophysical indicators on Site, regional frequency of historic landslide in the area, as well as assessment of Site surficial materials, hydrologic regime, topography and slope failure mechanics, as detailed through this report.

The proposed erosion mitigation development activities do not increase the hazard rating to the existing SFD or occupancy of Site.

2. Introduction

Development activity within the IT is being pursued on the subject land parcel with PID 009-555-706 (the 'Site', see Figure 1 – Appendix 1). The R (Rural) zoned land parcel is located on a southwest-facing flank of a slope which terminates to a coastal bluff ocean-shoreline. The Site is accessible via Quarry Road arriving from the north, at top of the slope, where a private roadway has been established.

This report includes assessment of pre-existing and field-gathered data which informs a geohazard risk assessment and guides proposed erosion mitigation measures.

There exists DPA 3 requirements for non-exempt development activities within 10m landward and 300m seaward of the marine-shoreline natural boundary. Due to land parcel configuration there is currently 10m setback from the natural boundary and existing SFD, resulting in a requirement to obtain DP if proposed erosion mitigation activities are occurring in this setback. Therefore, proposed landward erosion mitigation activities will be considered in context of existing structures, near-surface water management and erosion processes observed at the coastal bluff.

This report is a cumulative evaluation of existing and field-based data toward determining risk to SFD and natural environment associated with geohazards present on Site, and impact of proposed erosion mitigation measures on identified geohazards.

2.1. Author Qualifications

Thomas R Elliot PhD is a Qualified Professional (QP) Geoscientist [# 43570] and Professional Agrologist [# 3045] registered within the Province of British Columbia and in good standing with both professional associations. The QP has 16 years of geohazard, soil science, near surface groundwater and aquifer hydrogeology practice. In the last 9 years, Thomas R Elliot has primarily worked on Vancouver Island and the Lower Mainland of British Columbia in the practice areas of [Geoscience]: Hydrogeology, Geohazard mitigation assessments, Soils/Groundwater management; and [Agrology] Soil science, Agriculture, and Contaminant detection, mitigation and remediation.

3. Scope, Context & Motivation

The proposed development activities are erosion mitigation measures for identified geohazards toward reducing risk to the existing SFD and natural environment on Site.

This report does not determine the specific erosion mitigation activities due to a requirement for comprehensive assessment of near shore environments prior to identification of suitable measures. A comprehensive assessment includes this geohazard report in addition to an evaluation of beach and wave characteristics that will collectively inform suitable erosion mitigation activities through the Marine Shoreline Design Guidelines² that have been broadly adopted by Province of BC and Federal Department of Fisheries and Oceans.

The motivation to produce this report is to provide IT record of existing geohazard conditions on Site; predicted impact of proposed development activities; and if the proposed development activities – in context of existing or novel geohazards – allows for safe Rural-residential use of the land, as intended.

4. Regulatory Context

This section is dedicated to review of applicable Regulations and Acts, as governing legislation for individual and group risk of harm/death related to land use, as well as general permitting and authorization requirements of intended land use and proposed erosion mitigation development activities.

Further, the Department of Fisheries and Oceans would also be requested to conduct review of proposed activities in conjunction with the local IT DPA 3 permitting requirements.

4.1. IT Shoreline DPA

The geohazard assessment for the proposed works is warranted under MA Section 879 (1)(a) and (b) which prompts IT to protect the natural environment and to protect development from hazardous conditions; as specifically governed by IT Bylaw 434, V 2, S E.3 Development Permit Area 3 – Shoreline (enacted through IT Bylaw 488).

IT Bylaw 488, DPA 3 – Shoreline requires development permit applications be submitted for activities occurring 10m landward in areas where the marine environment has been identified as being particularly sensitive to development impacts.

If the proposed erosion mitigation works are to include: breakwater, weir, groin or jetty; bulkheads; placement of fill; removal of trees with diameter greater than 20cm OR removal of vegetation that results in the exposure of a total area of bare soil more than 9m² in area – then there is requirement for IT approved Development Permitting.

² Johannessen, J.¹, A. MacLennan¹, A. Blue¹, J. Waggoner¹, S. Williams¹, W. Gerstel², R. Barnard³, R. Carman³, and H. Shipman⁴. 2014. Marine Shoreline Design Guidelines. Washington Department of Fish and Wildlife, Olympia, Washington. **1** Coastal Geologic Services Inc.; **2** Qwg Applied Geology; **3** Washington State Department of Fish and Wildlife; **4** Washington State Department of Ecology

4.2. DFO Authorization

Pursuant to the *Fisheries Act*, should a requested DFO project review determine that proposed development activities are likely to cause the death of fish and/or harmful alteration, disruption or destruction of fish habitat – then authorization would be required.

Since the development activity (i.e. erosion mitigation measures) are currently undefined, this report is unable to establish whether DFO authorization will be required.

5. Site Conditions: Existing and Field Data

5.1. Slope, Geology, Soils & Surficial Materials

At shoreline, the Site has a ~8 – 12m coastal bluff consisting of siltstone and shale at base and capped with 1 – 2m of surficial material. Above which there are three distinct slope sections of the Site. The lowest is a gently sloping (~5 - 15%) bench above the coastal bluff where the SFD on Site exists, above which is a bedrock-controlled section of 30 – 35%. This second benching section does not exceed the angle of repose for local loamy soils, above which local sediment has increased likelihood of instability. The last slope section crests at a ridge-top and drops in elevation to Quarry Drive.

Soil associations on Site were previously mapped³ in elevation-limited bands which correspond to the changes in slope, which is consequent to change in sea level during glaciation and inter-glacial periods. Starting at present day marine shoreline and ascending up slope, the soil associations present on Site include a typically <2m thick veneer of well drained loam Galiano soil, which are derived from colluvium⁴, on the lowest slope.

At higher elevation, a band of thin <2m veneer of Saturna well draining sandy loam soils with prominent bedrock outcropping ascend to an elevation of ~58m asl. This portion of the land parcel is the source of boulders and other large loose rock masses which form sparse accumulations at lower elevations.

At upper elevations, Haslam well draining sandy loam soils are prevalent and functionally attenuate precipitation as it infiltrates to near surface bedrock.

The bedrock on Site was mapped as belonging to the Nanaimo Group⁵, with sparse details on the surficial rock type in existing records. On Site, the mid and upper elevation presented sandstone at surface, while at lower elevations a change from shale transitioning to siltstone

³ Soil Information Finder Tool.

<https://governmentofbc.maps.arcgis.com/apps/MapSeries/index.html?appid=cc25e43525c5471ca7b13d639bbcd7aa>

⁴ Soils of Southern Vancouver Island. MOE Technical Report 17.

<https://sis.agr.gc.ca/cansis/publications/surveys/bc/bc44/index.html>

⁵ Vancouver Island Geology. https://www.gac-cs.ca/publications/FT_Geology_of_Vancouver_Island.pdf

at coastal bluff occurred. The rock types identified on Site are characteristically found in the Nanaimo Group.

5.2. Surface & Groundwater

There are no identified or observed watercourse on Site. However, accumulation of rainwater and drainage from the access road does present areas of increased surface water discharge to forest floor. These areas are demarcated by accumulation of debris moved by the flow of surface water, increased annual vegetation growth, and an infiltrative surface – the extent of which is related to volume of accumulated rainwater.

Infiltration of each soil association on Site is unrestricted by soil texture, meaning that in areas where water does accumulate at surface there is a low-permeability limiting layer (i.e. bedrock) which prevents continuous downward migration. Instead, as infiltrating water reaches bedrock, lateral dispersion becomes dominant and results in a phreatic surface (i.e. perched groundwater table) establishing within the thin <2m veneer of surficial earth materials.

Where bedrock outcrops to surface, the veneer of surface material thins and ‘pinches out’, resulting in emergence of phreatic water. These ‘weeps’ or ‘springs’ are not to be conflated with artesian conditions, as these waters do not enter a confined aquifer and pore water pressure does not exceed atmospheric pressure. While not individually significant to Site surface hydrology, the irregular bedrock surface accumulates these phreatic weeps to a subsurface non-contiguous perched water table within the veneer of well-draining surface material.

Due to this accumulation mechanism, there is an increased depth of perched water table at lower elevations of the Site. Therefore, it is warranted to conduct specific geohazard assessment of areas where surficial materials convey the accumulated depth of perched water table due to an increased pore water pressure forcing erosion at the coastal bluff.

6. Geohazard Assessment

This landslide risk assessment was largely conducted according to the Engineers and Geoscientists of BC document *Guidelines for Legislated Landslide Assessments for Proposed Residential Developments in BC*⁶. The landslide risk assessment methods that were utilized includes all aspects of landslide hazard analysis, such as regional frequency and historic evidence to inform current and future landslide hazards; as well as evaluation of hazard likelihood, and consequence of landslide impact, to formulate a relative risk matrix which is comparable with levels of landslide safety adopted by the approving jurisdiction.

⁶ EGBC Guidelines for Legislated Landslide Assessments for Proposed Residential Developments in BC. <https://www.egbc.ca/getmedia/5d8f3362-7ba7-4cf4-a5b6-e8252b2ed76c/APEGBC-Guidelines-for-Legislated-Landslide-Assessments.pdf.aspx>

The assessment was restricted to the Site, as indicated in Figure 1, and specifically includes bedrock of the coastal bluff.

6.1. Investigation of Historic Failures in Area & Seismic Compliance

A review of historic aerial imagery was conducted on the surrounding area to determine frequency and spatial distribution of natural and induced landslides.

There were no mid-slope landslide scarps, transport paths, or deposit zones identified in proximity to Site or on similar colluvium slopes within the region within historical aerial imagery.

Through this lack of landslide evidence, and the existing evidentiary record of significant seismic events over the past ~500 years, there is no suggestion that natural slopes on Site would fail under seismic disturbances.

For example, a seismic event occurred at 10:13 a.m. on Sunday June 23, 1946 which measured at 7.3 on the richter scale, and was considered a significant seismic event which exceeds the 2% in 50 years magnitude. Therefore, as the Site and surrounding slopes exhibits no evidence of displacement consequent to ground motion, this historic record demonstrates compliance with seismic design at existing or proposed slopes of lower angle.

The presence of loose boulders (up to 1.2m in diameter were observed) on mid-slopes above the non-habitated (i.e. driveway, not SFD) lower slope on Site does suggest an increased likelihood of injury or death of an individual (i.e. consequence) while posing no likelihood for harm to the natural environment. However, the likelihood co-location of an individual within the increased consequence pathway is very remote and therefore does not contribute to overall risk considered herein.

6.2. Field Investigation

On Sept 17th, 2023 Thomas R Elliot PhD P.Geo P.Ag attended to Site as a QP with declared competency in geohazards, hydrology and soil science to evaluate the geohazards, ground and surface waters present on Site.

Field data was acquired according to, and through the implements noted in Table 1 below.

Table 1 – Summary of Field Work

Project ID:	2023.900	Project Name:	Baker Beach Erosion Mitigation
Project Type:	Erosion Mitigation (Geohazard)	Lead Investigator:	Thomas R Elliot PhD P.Geo P.Ag
Client:	Aurora Professional Group	Client Contact:	Brad Fossen P.Eng
Site Boundary Type:	Land Parcel	Site Common Address:	235 Quarry Drive

Site Legal Description:	VIP46155, LOT 1	Site PID #	009-555-706
Site Land Use:	Rural residential	Site Condition:	Secondary growth
Development Activity:	Erosion mitigation measures	Project Stage:	Assessment
DPA:	DPA3 – Shoreline	Provincial/Federal:	DFO review
Equipment Used:	- Clinometer - Compass - Engineer's tape - GPS tracking - Field soils kit - Range finder - Shovel and hand tools - Soil probe - Camera		
Summary of Site Activities:	• Site and Soils Assessments • Evaluate Terrain Stability & Geohazard • Document visible erosion mechanisms, ground and surface water		

6.3. Geohazard Units

Based on self-similar geophysical and hydrologic characteristics of the Site, a number of Geohazard Units (GU) were defined by the attending QP. Each GU has been assigned a respective Geohazard, or relative likelihood of a landslide event occurring, based on the documented geophysical and hydrologic characteristics.

The incremental change in Geohazard within a GU consequent to the proposed Development Activity is evaluated by the QP in order to arrive at impact of said Development Activity. The subsequent QP interpretation and recommendations are intended to fulfil requirements of the IT Shoreline DPA.

6.4. Wave Action and Erosion Hazard

Along the coastal bluff in proximity to Site there were numerous small-scale mass-wasting scarps consequent to erosion. Of those observed on Site, those occurring at base of the coastal bluff also had ongoing erosion of the sediment cap at top of the coastal bluff – suggesting a classic toe erosion mechanism. The bedrock toe erosion is driven by a combination of mechanical factors (e.g. wave-impact, thermal expansion, wedging/sediment jacking of fractures, etc.) and chemical factors (e.g. dissolution of binding carbonates, salt/crystal growth, etc.). The most prevalent of which appears to be wave-impact, which – due to orientation of metamorphic rock laminae and wave-direction – peels the friable bedrock during storm events.

Otherwise, erosion occurring at mid or upper portion of the coastal bluff was based in surficial material – the mechanism of which is explored in the Groundwater and Erosion Hazard section of this report.

6.5. Groundwater and Erosion Hazard

There exists a transient erosion hazard consequent to high pore water pressure conditions within the veneer of surficial Galiano soils at base of the slope on Site, as a component of the failing coastal bluff.

Under adverse climatic conditions, this hazard would result in a limited mass wasting failure which would mobilize and entrain the full depth of surficial material. With standard climatic conditions, this mechanism is not as likely to result in such mass failure – instead, punctuated failure events will see progressive steepening and erosion at base of the surficial material cap atop the coastal bluff. This steepening will progress until a larger landslide failure event re-establishes at angle of repose – migrating the erosion front landward, toward the SFD.

Therefore, since the erosion of surficial material – over the long term – could impact the SFD, there are recommended mitigation measures which can be found in Section 7 of this report.

6.6. Hazard Rating

There was no pre-existing geohazard rating established through QP assessment and reporting, to the awareness of the author at time of writing.

The Site natural slopes were less than the angle of repose for moist gravelly sandy loam to loamy sand colluvium earth materials (35 - 45% or 19° - 24°)⁷ above which slope-failure becomes more probable.

The landslide hazard rating for the entire Site was lower due to strong bedrock control at upper elevations, with shallow depth to bedrock for the remainder of Site, and therefore limited surficial material which would mobilize.

However, the surface sediments capping the coastal bluff have an increased erosional hazard due to presence of a perched water table in the lower slopes.

Consequent to these observations and slope gradients, GU on Site were assigned a VERY LOW to LOW hazard ratings outside of the coastal bluff, which classified as HIGH.

As per Appendix 2 – Geohazards and Risk, the GU defined on Site are summarized in Table 2, below.

Map imagery of GU delineation is found in Appendix 2 and is a recommended reading accompaniment to this section.

⁷ H. Al-Hashemi, O. Al-Amoudi. A review on the angle of repose of granular materials. Powder Technology Volume 330, 1 May 2018, Pages 397-417. <https://doi.org/10.1016/j.powtec.2018.02.003>

Table 2 – GU Hazard Rating and Risk

Geohazard Unit	Hazard Rating and Risk			
	Slope Characteristics	Hazard Rating	Consequence	Incremental Risk Rating
1	Cv Br benching ± 35 - 40%	VERY LOW	LOW	Very Low
2	Cv / Br planar ±25 - 35%	LOW-MODERATE	LOW	Very Low
3	Cm planar ±5 - 15%	VERY LOW	LOW	Very Low
4	Cv / Br planar ±150 - 180%	HIGH	HIGH	High

Geohazard Shorthand Notation

Br – Bedrock

C – Colluvium

A – Aeolian

L – Lacustrine

GF – Glaciofluvial

GT – Glacial till

M – Marine

v – veneer (.1 – 2m)

m – mantle (2 – 5m)

b – blanket (>5m)

/ - overlying

| - equal surface exposure

benching – slope interrupted by bedrock

planar – linear slope

6.7. Consequence of Geohazard Event

The Consequence of a geohazard incident was evaluated by the QP based on downslope receptors, predicted size and volume of geohazard event, and a simplistic Farböschung assessment – as detailed in Appendix 2 – Geohazards and Risk.

The most active failure mechanism on Site is punctuated landslide erosion of surficial materials at the coastal bluff (GU 4). The mobilized material would deposit directly to the marine environment, resulting in HIGH consequence.

Outside of which, the second likely failure mechanism on Site would be a mid-slope (GU 2) failure within a colluvium filled relic bedrock draw where a perched water table decreases shear resistance. However, due to the veneer of surficial material in the initiation area, any landslide would impact a limited area due to lack of transportable surficial materials from the initiating area or on low gradient receiving slope (GU 3). The low gradient receiving slope has sufficient width to retain mobilized material, resulting in a LOW consequence.

Summarily, the most likely geohazard results in a HIGH consequence while the remainder of Site has a LOW consequence.

6.8. Incremental Risk Imposed by Development Activity

The purpose of proposed erosion mitigation development activities is to reduce the geohazard risk of GU 4. This report has identified the active failure mechanisms resulting in erosion of the coastal bluff, from which mitigation measures can be evaluated.

6.9. Suitability of Lands for Use Intended (SFD)

There are no up-slope hazards likely to impact the SFD location.

While GU 4 has a High risk rating, the progressive-over-time nature of failure mechanisms for this area would provide opportunity to conduct more specific geotechnical review, and/or implement mitigation or emergency measures prior to impacting the SFD and ~3m of surrounding liveable space.

With no off-Site hazards and a LOW likelihood of failure above an existing SFD – the building location is **SAFE FOR THE USE INTENDED** (Residential Single Family Dwelling).

7. Geohazard Mitigation Recommendations

Due to the HIGH incremental risk of geohazards for GU 4, there are mitigation recommendations intended to reduce the risk to LOW.

7.1. Erosion and Sediment Control

All proposed activities will require Erosion and Sediment Control planning which meets IT regulatory requirements. Any such plan should be developed toward acquiring a Development Permit from the IT for the proposed activities and shall be submitted alongside any additional required paperwork.

There are two identified erosion mechanisms:

Pore water sufficient pore water pressure below the phreatic surface can acts as a destabilizing factor to overcome cohesion, friction angle and soil weight – entirely independent of toe erosion. While the majority of episodic pore water pressure erosion occurs during the rainy season, localized increases in pore water pressure can also lead to instability during otherwise drought conditions.

Mitigation options include, but are not limited to:

- Annual monitoring of erosional regression of surficial materials at the coastal bluff;
- Groundwater intercept and redirection to non-erosive receiving environment;

- Bioengineering and selective planting of native species toward increasing shear strength of surficial materials;
- Re-contour of the surficial materials to allow for emergence of groundwater without erosion;
- Selective removal of shoreline trees deemed hazardous due to toe erosion.

Wave action a culmination of mechanical wave-action, daily sunlight-driven thermal oscillation, and saturating water-spray promotes decomposition and failure of fine-grained metamorphic bedrock situated in the lower 6 - 7m of coastal bluff. This results in toe erosion which, over time, destabilizes the portion of coastal bluff above.

Mitigation options include, but are not limited to:

- Monitoring rate of erosion so as to establish a predictive timeline of coastal bluff regression;
- Bioengineering and selective planting of native species toward dissipated wave-impact on coastal bluff face;
- Wave deflection within intertidal area;
- Beach nourishment to dissipate wave energy;

The suitability, efficacy and ease of implementation and maintenance of these recommended mitigation options should be carefully considered in context of Marine Shoreline Design Guidelines which will require an integrated assessment of geohazards (this report), wave and beach dynamics, and ecosystem characteristics.

8. Safety and Suitability

This report has been prepared in accordance with standard geotechnical hazard assessment practices, and at the expense of Heidi and David Kuhrt. Thomas R Elliot PhD P.Geo P.Ag has not acted for or as agent of the Islands Trust in the preparation of this report.

Thomas R Elliot PhD P.Geo P.Ag certifies that the land is safe for the use intended (Residential Single Family Dwelling and Driveway) if the land is used in accordance with the conditions specified in this report.

Thomas R Elliot PhD P.Geo P.Ag acknowledges that this report may be used by the Islands Trust as a precondition to the issuance of a permit and that this report and any conditions contained in this report may be included in a restrictive covenant and filed against the title to this subject property.

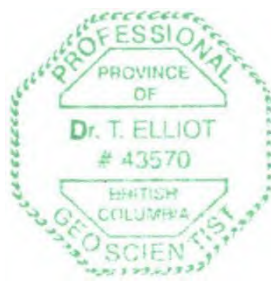
9. Summary

The land parcel with PID 009-555-706 situated on the southwest flank of a bedrock ridge forming a benching slope down to a coastal bluff is proposed to undergo permissible Development Activities within the Shoreline DPA of the IT.

Through assessment of these DPA requirements, Thomas R Elliot PhD P.Geo P.Ag as a QP capable of conducting the works, has determined a **High Risk of erosion geohazard** impacting the local environment. This determination is based on geophysical indicators on Site and regional frequency of historic landslide in the area.

The proposed development activities do not increase the Risk, however specific design of erosion mitigation measures will have to be completed prior to establishing a post-development Risk. There are sufficient pre-existing long term erosional processes on Site to warrant mitigation measures.

Qualified Professional of Record	THOMAS R. ELLIOT PhD P.Geo, P.Ag Name	 Sign

Thomas R Elliot PhD P.Geo. P.Ag.

Digital reproduction, original available upon request.
Date: November 6, 2023

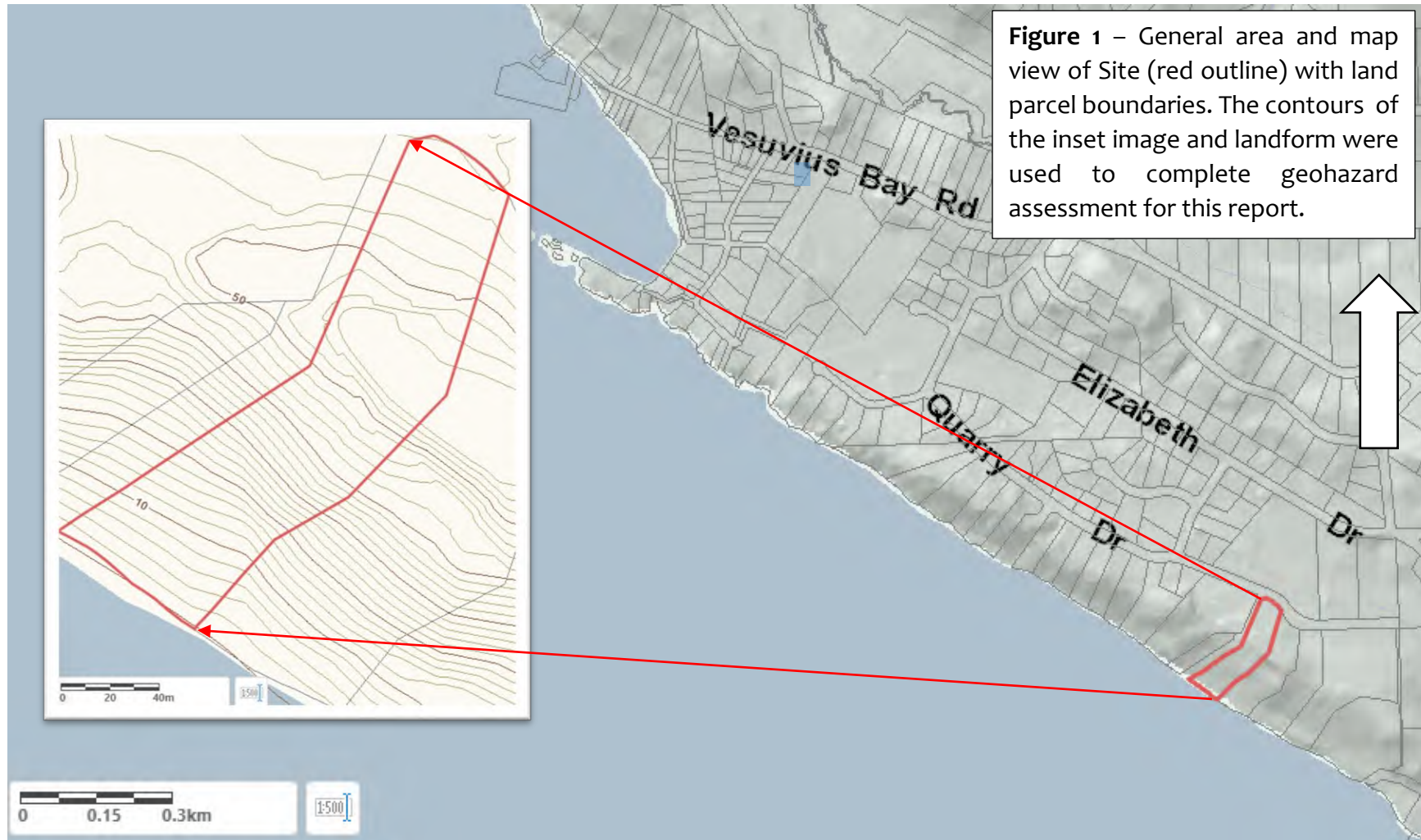
10. Closure and Limitations

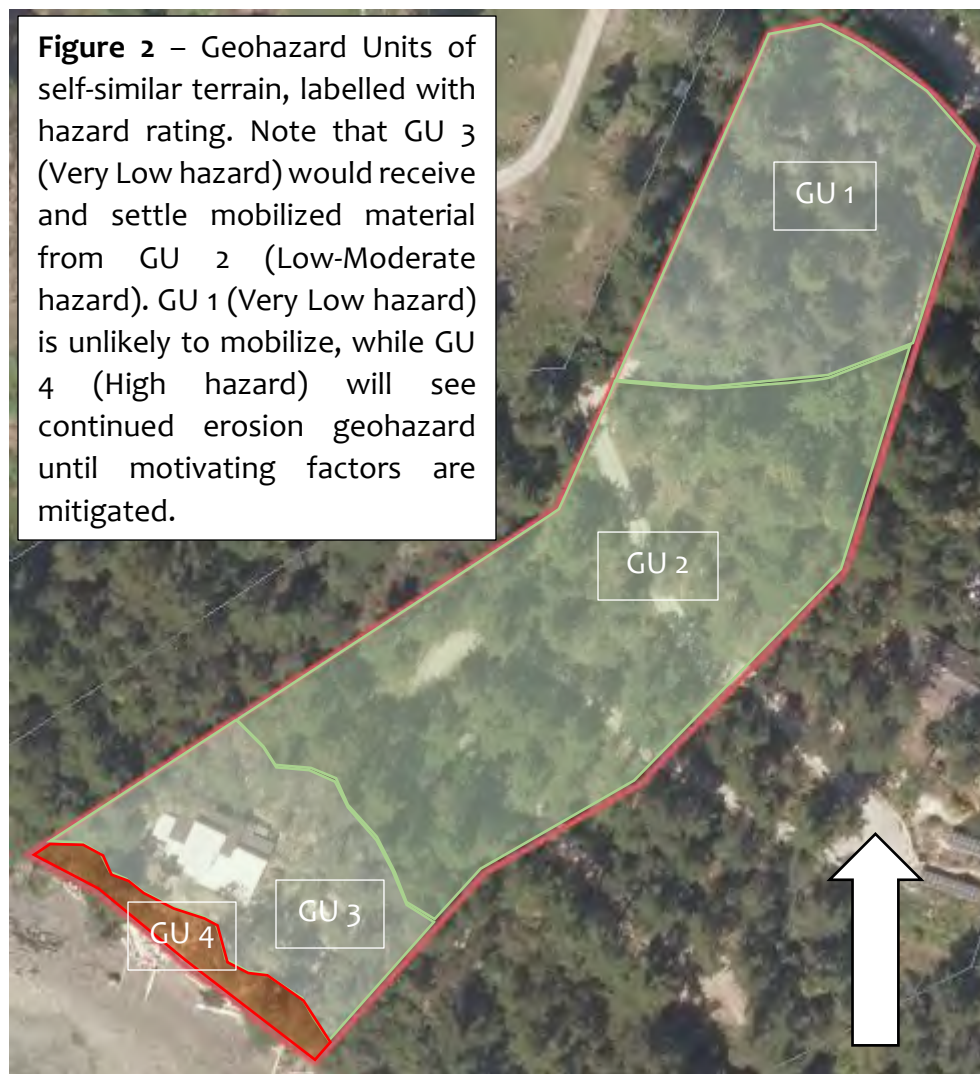
The QP signatory to this assessment and report assures accuracy of existing and field observation, and evaluation of technical geohazard according to best practices of the Engineers and Geoscientists of BC. The content of this report are applicable to the subject land parcel, and specifically the Site as defined in this report. Any extension of the evaluation to areas outside of the defined area assessed are not valid.

The report has been conducted according to guidelines and reporting standards of similarly qualified professionals, given similar time and budget. At time of writing, the report meets due diligence and investigatory reporting requirements to provide QP recommendations with declared competency in the subject areas. Therefore, the author of this report does not maintain liability insurance for actions taken based on the reporting, and only accepts error and omission liability up to the value of this report. The receipt, utilization and any planning, further studies or development actions undertaken by the recipient of this report are based on their acceptance of their own liability therein.

Appendix I

Maps and Figures





Appendix II

Geohazards and Risk

Geohazards

This assessment is partially based on local historic rates of landslide failure. The rating hazard of failures occurring in a given area under the classification system shown in Table II_a, below. By determining the likelihood of historic failures based on spatial density, the number of failures per unit area can be predicted. The likelihood of historic failures is determined through review of historic aerial imagery and general area observations while on the way to or from Site.

By establishing failure spatial density in the local area, in conjunction with Table II, the hazard rating can be estimated for areas undergoing development activities that impact terrain stability.

The hazard ratings were defined based on pre-existing practice by geoscientists and engineers for the natural resources sector, and adapted to best suit development activities governed by responsible municipal partners toward meeting those partner-organization risk tolerance policies.

Please note that, differing from resource sector terrain stability assessments, this evaluation of hazard includes failures smaller than 0.05 ha area (initiation, transport and deposit area). This is consequent to resource sector activities, and typically remote locations, being more tolerant of small-scale geohazard events. For this location, due to proximity to populated areas, and responsibility to meet municipal risk tolerance policies, the total area of a failure may be less than 0.05 ha in order to contribute to the hazard rating.

Table II_a: Definitions of hazard categories

Hazard Category	# of failures per geohazard unit size
VERY HIGH	>1 failure per 2 ha
HIGH	1 failure per 2 to 10 ha
MODERATE	1 failure per 10 to 50 ha
LOW-MODERATE	1 failure per 50 to 250 ha
LOW	1 failure per 250 to 1250 ha
VERY LOW	<1 failure per 1250 ha

Once the natural hazard of landslide for the area has been established, the probability of at least one failure occurring in a geohazard unit can be determined from Figure II_A.

Figure II_1 is based on the assumption that the probability of a specified number of failures occurring within a polygon is related to the size of the polygon by a cumulative normal distribution.

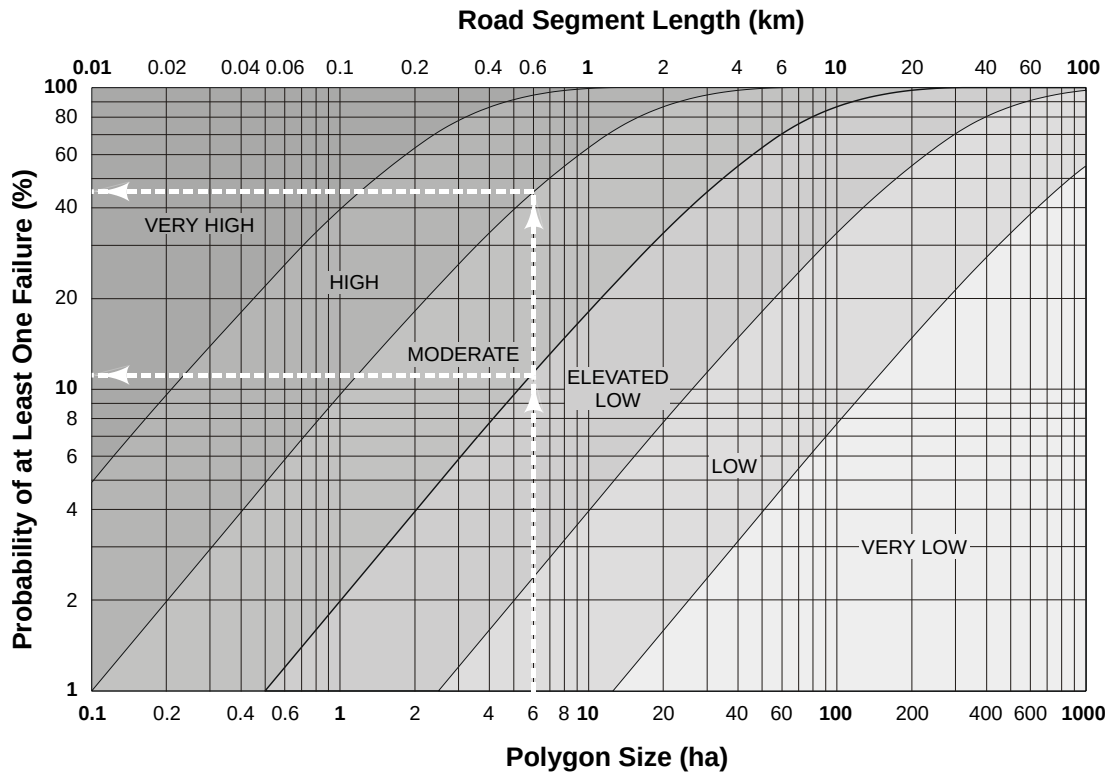


Figure II_1 – Probability of at least one failure based on a geohazard unit (GU) assessment area size or road length. This figure has been adopted from BC Forestry practices and is based on a single forestry harvest cycle, typically lasting 60 years within Coastal BC.

Figure II_1 has an example sketched with dashed white lines. The example indicates probability of failure for a **6 ha** geohazard unit area with a **moderate** hazard rating. The probability of at least one failure occurring within the assessed geohazard unit area over the period of one forestry harvest cycle is between ~12 – 45%.

Consequence

Simplistic Farböschung Evaluation

Whether or not a Site will be impacted by a geohazard is a component of determining consequence to potential landslide failures and/or debris flows. A simplistic assessment of transport and deposition zone locations can be accomplished through a 'Farböschung' evaluation. This is best exemplified through Figure II_B, which demonstrates how a sliding

mass (block on right hand side) has potential to transport some distance from point of initiation based on a simplistic assignment of Farböschung angle.

For this assessment, a Farböschung angle of 45% was used based on heuristic practice for these coastal environments and gravelly loam surficial material. By standing on Site at highest point of initiation, the QP was able to establish the approximate run-out distance to edge of the deposit zone.

A more Site specific example is provided in Figure II_C, which shows a benching bedrock terrain where a thin veneer of surface material is mobilized, and has limited transport and deposit distances based on the Farböschung angle.

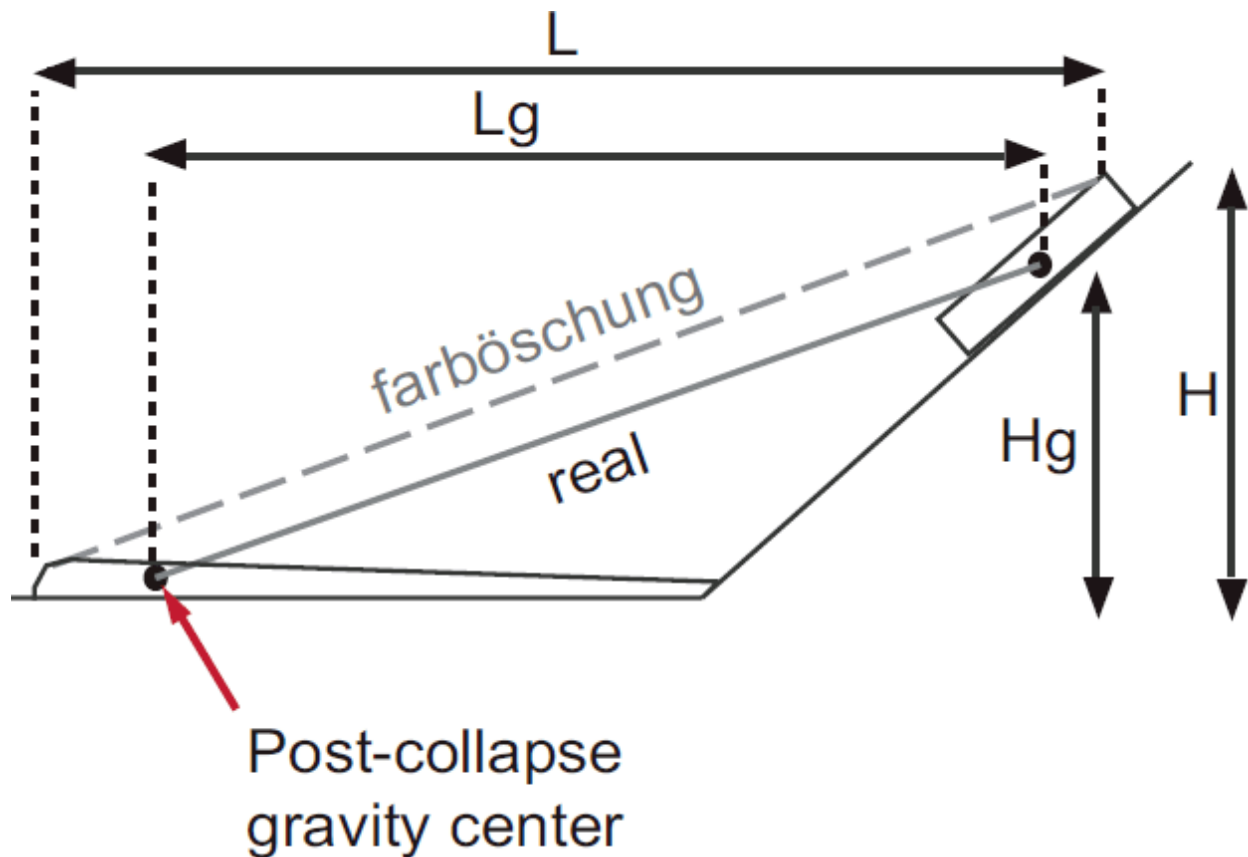


Figure II_B – Farböschung angle functionality for sliding masses on a slope. The specific mathematics of which are not supplied here for brevity.

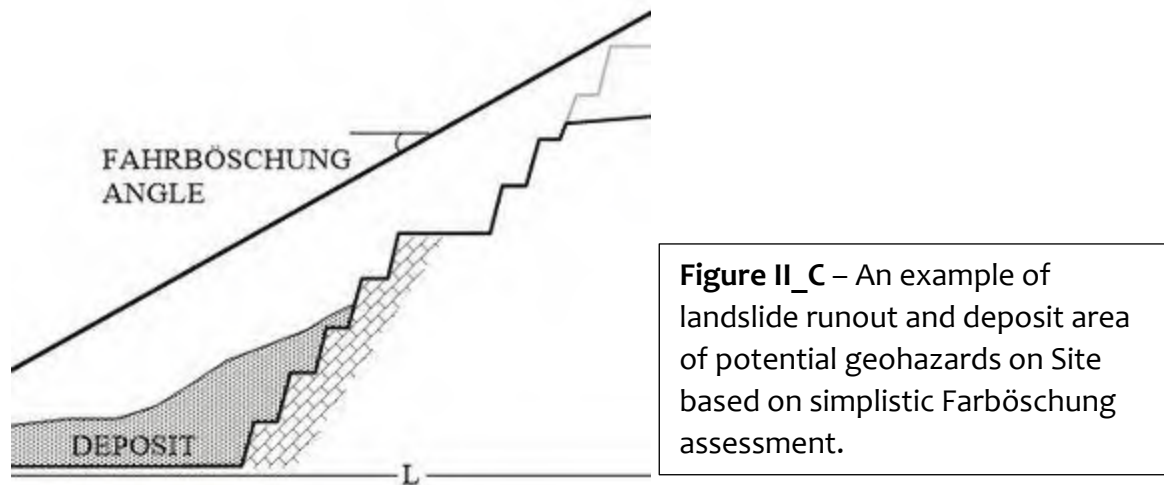


Table II_b: Consequence

Consequence	Criteria
HIGH	Landslide material would directly enter fish habitat (stream, lake, or marine waters); water intake for domestic consumption; jeopardize lives of the public; impact major public infrastructure; or other property owner. Landslide would enter non-fish stream within 500 m of fish habitat.
MODERATE	Landslide material enters non-fish stream > 500 m and < 3000 m from fish habitat, OR there is a slope < 20% for < 100 m below landslide to fish habitat; potable water intake; a public area; or other property owner.
LOW	Run-out slope < 20% for 100-200 m below landslide deposit area. At time of event, suspended sediment may reach fish habitat; potable water intake; public area, or other property owner
VERY LOW	Run-out slope < 20% for > 200 m below landslide. Landslide material is unlikely to reach stream or potable water intake at time of event. A landslide would not be a public safety concern; would not impact any infrastructure nor other property owner.

Post Development Activities Summary Table of Geohazards, Consequence and Risk on Site

Risk

		GEOHAZARD				
		VERY LOW	LOW	LOW - MODERATE	MODERATE	HIGH
GEOMORPHIC CONSEQUENCE	VERY LOW					
	LOW	1	3	2		
	MODERATE					
	HIGH					4

Assessment of Marine Shoreline Characteristics

As pertaining to areas seaward of land parcels:

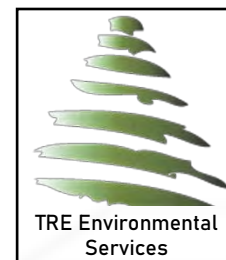
235 Quarry Drive PID 009-555-706
239 Quarry Drive PID 009-555-731
434 Baker Road PID 009-555-781
431 Baker Road PID 000-014-656

SALT SPRING ISLAND

Report for Coastal Erosion Mitigation

Developed for: Aurora Professional Group
c/o Bradley Fossen P.Eng
338 Lower Ganges Rd UNIT 202
Salt Spring Island, BC V8K 2V3

Developed by: Thomas R Elliot PhD P.Geo P.Ag
TRE Environmental Services
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1. Synopsis

This assessment of marine shoreline was conducted using field, analytic and existing data to determine wave and sediment dynamics associated with erosion management of the coastline, as well as transport control of mobile sediments. These determinations are used to inform size distribution for sediment suitable for beach nourishment methods of erosion mitigation and transport control.

There are ~670m of hard armouring, or ~28.5% of the 2,350m shoreline within the drift-cell. Within the study area, there are ~70m of riprap and concrete, creating a ~14% hard-armoured coastline within the Site. This amount is considered to be moderate, where further erosion mitigation hard armouring would be discouraged by regulatory authorities.

There were two zones with distinct sediment size characteristics spread across the Site, for which there were sediment/gravel mixtures identified as being suitable for beach nourishment.

Lastly, the suitability of erosion mitigation and sediment transport control in context of Site factors and dynamics was evaluated. This evaluation encourages both continued monitoring and beach nourishment as suitable activities to pursue as part of erosion mitigation and sediment transport control.

2. Introduction

Landowners of four parcels adjacent to Baker Beach on Salt Spring Island have observed increased occurrence of punctuated erosion (e.g. landslide and landslip/tree-topple) and progressive erosion (e.g. plucking, thermal-jacking, or overland flow sediment mobilization). These landowners requested an assessment of the ~40m x 600m Site (Figure 1 – Appendix A), including existing foreshore and backshore characteristics, which informs sediment and wave dynamics. The assessment of foreshore and backshore dynamics will generate a drift-cell model for the Site. The drift-cell model will be used to evaluate suitability of proposed erosion mitigation measures at the end of this report.

This report is applicable to the foreshore and backshore seaward of the following land parcels:

Common Address	Parcel Identification
235 Quarry Drive	PID 009-555-706
239 Quarry Drive	PID 009-555-731
434 Baker Road	PID 009-555-781
431 Baker Road	PID 000-014-656

This report was written using existing and field-based data that provides spatial layout of the Baker Beach foreshore and backshore, generalized coastal zone sediment budget, beach particle size assessment and a drift-cell model summary.

2.1. Author Qualifications

Thomas R Elliot PhD is a Qualified Professional (QP) Geoscientist [# 43570] and Professional Agrologist [# 3045] registered within the Province of British Columbia and in good standing with both professional associations. The QP has 16 years of geohazard, soil science, near surface groundwater and hydrology. In the last 9 years, Thomas R Elliot has primarily worked on Vancouver Island and the Lower Mainland of British Columbia in the practice areas of [Geoscience]: Hydrogeology, Geohazard mitigation assessments, Soils/Groundwater management; and [Agrology] Soil science, Agriculture, and Contaminant detection, mitigation and remediation.

3. Standards of Practice for Marine Shorelines Management

The marine shorelines of British Columbia are subject to overlapping jurisdictional claims from municipal, provincial and federal government agencies. Despite the regulatory oversight, there are few guidance documents produced from Canadian sources that demonstrate best management practices from an integrated perspective which includes geophysical, ecologic and social/land use.

Some governmental agencies, such as Islands Trust (IT), who have adopted customized or standard guidance documents from Washington State Department of Fish and Wildlife¹. Other non-governmental organizations have supported investigatory methods for detecting vulnerabilities and existing health status of shoreline environments².

This Assessment relies on existing guidance and approach methods that have been referenced by governmental agencies as being suitable for development planning and implementation practices within the BC coastal marine environment. Specifically, the determination and classification of marine shoreline and coastline dynamics, and consequentially which mitigation opportunities are suitable – is from the Marine Shore Design Guidelines³. Additionally, assessment and mitigation pathways identified have been considered in context of a Coastal Marine Strategy for British Columbia Policy Intentions

¹ Your Marine Waterfront (Canadian Edition): <https://islandstrust.bc.ca/document/your-marine-waterfront-guide-2023/> Accessed 11/2023.

² BC Parks Shoreline Sensitivity to Sea Level Rise Model: User Guide: https://a100.gov.bc.ca/pub/acat/documents/r42825/BCPark_SS_user_guide_1403632673820_3629261453.pdf

supported by the SeaChange Marine Conservation Society (<https://seachangesociety.com/resources/>). Accessed 11/2023.

³ Washington Department of Fish & Wildlife Marine Shore Design Guidelines: <https://wdfw.wa.gov/publications/01583>. Accessed: 09/2023

Paper issued in December 2022⁴. In this report, the six outcomes identified in the Intentions Paper informed the assessment and mitigation options considered.

4. Scope, Context & Motivation

The purpose of this assessment is characterization of shoreline that will inform suitable marine coastline erosion mitigation measures which can be pursued on Site.

The motivation for this evaluation is to use sediment analysis and a drift-cell model in conjunction with reporting on ecology and geohazards to guide planning of erosion mitigation measures. The planning will be provided in subsequent reporting.

Additionally, there exists IT DPA 3 – Shoreline requirements for non-exempt development activities within 10m landward and 300m seaward of the marine-shoreline natural boundary. Therefore, if erosion mitigation recommendations are to occur within this DPA 3 area, there is a requirement to conduct characterization of existing conditions alongside demonstrably supportable recommendations for erosion mitigation.

The motivation to produce this report is to provide IT record of existing shoreline conditions, in partial or completion of IT DPA – 3 Shoreline requirements.

5. Shoreline Terminology, Site Delineation and Erosion Mechanisms

The shoreline area, as per IT DPA 3 definition, consists of a 300m coastal zone from the coastline, above which it extends into 10m of the uplands.

The Site includes the area of Baker Beach, as bracketed by public access, in addition to self-similar shoreline at both extents for a total ~600m of coastline (Figure 1 – Appendix A).

To best align this document with existing map products of shoreline delineation by IT, such as [Saltspring Is. North Map 1 of 3: Distribution of Shoreline Types](#), Figure 3 was generated with identical classification and colour scheme.

Of the erosion mechanisms identified on Site from previous geohazard reports, the following are of note:

- Pore pressure/Groundwater Seepage from surficial soils, reducing cohesion and resulting in landward progression of the crest through continuous or punctuated mobilization of sediment.

⁴ A Coastal Marine Strategy for British Columbia. <https://engage.gov.bc.ca/app/uploads/sites/121/2022/12/Coastal-Marine-Strategy-Intentions-Paper.pdf>. Accessed 11/2023.

- Toe-erosion of bedrock, or undercutting of shoreline sediment, which decreases stability of all materials above, often resulting in narrow failures from crest to base of coastal bluff.
- Landslip/Tree-topple is occurring on Site wherein trees near, or overhanging, the coastal bluff mobilize consequent to soil creep, pore pressure or toe-erosion. These failures result in a larger volume of surficial sediment during failure than toe-erosion instability reaching the crest. Consequent to root reinforcement or friability of bedrock, landslip is likely to mobilize underlying shale and siltstone.
- Landslide is a moderate to large scale failure event which can mobilize bedrock and overlying surficial sediment. Coastal landslides are often consequent to a history of toe-erosion, bedrock fracture and an increase in pore pressure (i.e. saturated soils & rock-fractures during a storm event) which has destabilized the coastal bluff in that area.

6. Shoreline Characteristics and Dynamics

This section presents details on the existing composition and quantifiable characteristics of the assessed marine shoreline. The following is a summary table of global characteristics, acquired from previous geohazard reporting⁵, while details of each area are reviewed in subsequent relevant sections. Field assessment methods provided in Appendix A of this report.

TABLE 1. GENERAL SHORELINE CHARACTERISTICS FROM PREVIOUS REPORTING

Geology & Geomorphology	
Geology	Siltstone to mudstone in upland, sandstone within coastal zone, of the Nanaimo group – which is an elevation-banded sedimentary and metamorphic rock assemblage.
Surficial Sediment	Well to rapidly drained sandy loam to loam belonging to the Galiano soil association is present at the coastline.
Landslide/Landslip activity frequency	Concentrated within areas of accelerated erosion, with a Site wide occurrence of 1 per ~40m of coastline.
Shore & beach type and beach features	<u>Shore type</u>: Rocky coastline bluff with variable elevation bedrock resulting in low rock/boulders, boulder/cobble and sea cliff natural coastline. There are structurally altered (i.e. hard armour) coastline up-drift, within and downdrift of the assessment area. <u>Beach type</u>: The presence of bedrock within the coastal bluff and foreshore results in the Site being typified as a high tide reflective beach face fronted by intertidal rock flats (i.e. bedrock low-tide terrace).

⁵ Geohazard assessment for each land parcel, completed by TRE Environmental Services under separate cover. For reference and details, please refer to those reports.

	<i>Features:</i> There exist two bedrock outcropping, nearly 40 – 50m from coastline at seaward extent of the low-tide terrace, which are in line with two ridges descending from uplands and consistent with the benching morphology of this shoreline geology.
Ground and Surface Water	
Watershed conditions	Single benching slope above the assessment area results in small-scale flow accumulations. There are no identified streams, albeit there was some evidence of overland flow associated with high volume precipitation events.
Groundwater	Limited infiltration to bedrock results in perched water table within the veneer to mantle of surficial materials. Perched water table causes increase pore water pressure at soil interface with air, decreasing soil stability.

6.1. Hard Armouring

At respective distances of 115m and 490m northwest of Site, there are ~200m of groyne and ~300m of coastline-riprap hard armouring installations. Of these anthropogenic foreshore modifications, the groynes may be encouraging some sediment accumulation along the beach face by diffracting wave energy, albeit that poor installation has resulted in low sediment retention; while the riprap has reduced kinetic wave action on the shale and siltstone coastline, reducing supply from upland to the local coastal zone sediment system.

Down-drift from Site is ~80m of coastline-riprap on a sediment bar at the mouth of Booth Inlet. This hard-armouring restricts both progressive and punctuated sediment mobilization from the area by constricting flow to a narrowed channel, thus reducing fine-sediment supply to local shoreline.

There are three additional sections of hard armouring within Site: coastline-riprap placed at the northwest (10m) and southeast (30m) CRD access points, as well as along the coastline of 241 Quarry Rd (30m) – creating a ~14% hard-armoured coastline within the Site.

In total, the ~2,350m long drift-cell (see Section 6) – extending from Vesuvius Bay to the mouth of Booth Inlet – has ~670m of hard armouring, or ~28.5% of the local area shoreline.

6.2. Backshore

Indicators of a backshore are the presence of accumulated fine sediment and clasts, large littoral debris, sparse vegetation, and an area that is dry under normal conditions but exposed to wave action during storm events coinciding with high-tide. With this criterion, the backshore on Site was determined to have limited extent, often less than 1m in width and non-existent in some areas where there is continuous bedrock outcrop to the coastal bluff.

The backshore does not have sufficient width to create dunes or other geomorphic sediment accumulations. However, there exists minor clastic terrace deposits above the wrack line in

sections of backshore that were contiguous with the beach face. There is sparse littoral and flotsam debris accumulated within the backshore, which is in contrast with the common to frequent presence of accumulated debris along up-drift sections of shoreline which have been historically armoured by rock groynes.

Sediment supply from uplands is principally delivered to the backshore as progressive erosion of coastline bedrock bluff. Sediment deposits from punctuated toe-erosion, landslip and landslide failures were also present in the backshore – some of which hosted perennial salt-tolerant vegetation, suggesting a multi-year existence. The persistence of these deposits through prior year storm-season (i.e. high wave energy and storm events) is a component of continuous sediment supply to Baker Beach.

6.3. Foreshore

The bedrock transition from shorise to a $\sim 3^\circ$ gradient low-tide terrace is notably marked by the presence of two bedrock rises which present as ‘barrier islands’ for a portion of Baker Beach (see Figure 1). Under high tide conditions, these outcrops are fully submerged. The low-tide terrace is a wave-cut rock platform in siltstone and shale bedrock. The wave-cut platform has been created over the most recent eustatic sea level, in existence since the end of the last ice age $\sim 8,000$ bp.

Within the low-tide terrace there is a mixture of sediment and bedrock coverage, as shown in Figures 3 & 4 – Appendix A. The accumulation of sediment is facilitated by undulating bedrock surface, with depressions readily infilled. The infill presented cobbles and gravel surface armouring, with fine sediments captured and retained underneath. There is a typical progressive reduction in the amount of mobile gravel toward the seaward extent of low-tide terrace.

The 10 – 25m width of $\sim 5^\circ$ gradient continuous beach face across the Site is demarcated by a grading of accumulated sediment, from sparse cobbles and coarse gravel atop sand at the low-tide terrace interface, to fine gravel and sand at the backshore interface. Generally, there is a surface layer of mobile gravel which accumulates to greater depths toward the backshore interface. There is a wrack layer at the upper extent of the beach face, with accumulation of littoral debris by normal wave and tide-action.

The beach sediment is a broad mixture of boulder erratics emerging from sedimentary bedrock or upland surficial material through weathering, to gravel, coarse sand and limited fines. Further information on beach sediment is found in the Section 5.5 – Beach sediment analysis.

6.4. Wave dynamics

Wind-driven wave generation is largest in the west to northwest direction, creating acute incidence of approach. However, windrose diagrams (Figure 4) demonstrate a predominantly southwest to southeast winds that reach moderate velocity (≥ 6.0 m/s). These predominant

winds would form waves over a maximum 4.6km fetch. There are rarely occurring strong northerly to northwesterly winds recorded for the autumn period which would incur the maximum possible 13.5km fetch for the Site. The reference marine shoreline development guidelines recommend differentiating between Low, Moderate and High energy waves when fetch exceeds 1.6km & 8.0km (respectively) – therefore wind-driven wave energy on Site is determined to be Moderate.

Vessel-wake wave energy is predominantly from the most transited paths through the Sansum Narrows, and the regular Vesuvius-Crofton ferry. While there is large cargo vessel traffic to the nearby Crofton Mill, the lower frequency and low-speed manoeuvring does not contribute significantly to wave-energy delivered to Baker Beach. Due to the predominant angle of incidence, the vessel-wake do contribute to alongshore drift, moving fine sediment within the Drift cell.

Using equation 3 from Appendix B, typical wave velocity at high-tide across the rising low-tide terrace is determined to be 1.98m/s (7.12 km/h) resulting in a surging breaker classification. Surging breaker waves involve a progressive transfer of potential to kinetic energy across the coastal zone of Site.

Under storm event conditions where wind energy increases wave speed, wave type shifts to plunging breakers at steep shorerise, with the resulting whitewater traveling across the low-tide terrace and beach face as turbulent motion.

Based on sediment deposition patterns and distance from deep water, tidal currents do not have an apparent influence on wave dynamics at Site. Further, Booth Inlet – immediately east of the Site – is an ebb-tide delta with observable fine sediment accumulation. There is little evidence of increased fine sediment accumulation from the ebb-tide delta within the Site, demonstrated through beach sediment analysis, reinforcing that the drift-cell transports alongshore from northwest to southeast.

6.5. Beach sediment analysis and Beach Nourishment Sizing

Sediment analysis of the coastal zone samples were evaluated for size fraction (See Appendix C). Sediment analysis provides distribution across distinct size ranges for samples from the following delineated coastal zones: Coastline, Backshore terrace, Backshore face/wrack, Foreshore beach, and Nearshore crest.

Within the study area, the most consistent sediment size-composition (Graph C1) was found across the well sorted foreshore beach face (Figure 2). After which, the backshore face and backshore terrace demonstrate good size consistency (Graph C2, C3) across the Site. There is a clustered distribution of sediment composition for the nearshore samples (Graph C4), which demonstrate a zonation along the drift cell.

To better understand the zonation, sediment size was charted for each property (Graph C5 – C9) to determine if there are alongshore effects to be accounted for in beach nourishment

sizing. This identified grouping of sediment sizes between property 1 and 5, as well as 3 and 6; suggesting similar wave action and resulting sediment transport processes in these areas.

Generalized Sediment Budget

The Site is of limited spatial area, and therefore can only receive sediment from a limited section of the coastline and intertidal terrace erosion. While there is some alongshore sediment transport within the drift-cell, the mobile size fraction – being fine sand to silts – was most prevalent in the nearshore adjacent land parcels further along in the drift-cell. This distribution indicates a fine sediment deposition zone in the eastern portion of the Site, which agrees well with geomorphic factors – such as the nearby confluence of Booth Inlet.

Coarse sand to stones are most readily supplied to Site by erosion of surficial materials in the coastline and uplands, accomplished through overland transport or failure of the coastal bluff. These sediment sources are limited in volume prior to when their transport to beach would encroach on built structure geohazard setbacks. As such, we can state that there will be a decrease in sediment supply from uplands, trending to zero in the long term, should safe use of the built structures be prioritized.

Sparse gravel coverage along the low tide terrace and beach face demonstrates a low supply and low loss environment. The deposits present were found to be armoured at surface with large clasts, finding sand and silt content deeper within the sediment profile. This suggests there is reworking of sediment within the drift-cell, but there does not appear to be sufficient force to transport the larger size range of sediment present out of the drift-cell.

In context, the drift-cell generalized sediment budget is low input/output, with primary loss – being fine sands to silts – through evacuation to off-shore. There is reworking of gravel present, although observed armouring and stratification of beach sediment profile indicates a heavily conserved higher clastic fragment size range.

From this generalized sediment budget, beach nourishment planning can be better focused on the larger sediment size ranges to ensure conservation of materials while including coarse sand to help stratification and armouring processes occurring on the beach face.

Beach Nourishment Sizing

Determining sediment size suitable for beach nourishment within the Site becomes more complex in context of a drift cell, where materials deposited to a portion of the Coastal Zone (Figure 2.) will disperse to adjacent zones and alongshore within the drift cell. This is a factor in determining both target-zone, and size range for beach nourishment. One suitable approach is to determine sediment size composition for beach nourishment through averaging of existing sediment within zones that will ultimately receive the material, weighted for the target deposition area.

Based on Client motivation, the target deposition area within Site would be the backshore face, where it is anticipated that there will be transport to backshore terrace and foreshore beach face. Additionally, there is no intention of placing easily transportable material – meaning that there will be no purposeful addition of silt to the beach nourishment, and coarse sand will be the smallest size fraction identified for placement.

Due to the previously identified zonation, there are two size ranges suitable for beach nourishment at the backshore face – as follows:

Zone 1: Property 1 & 5

<u>Percent Composition</u>	<u>Size Range</u>	<u>Common Name</u>
60%	4.8mm+	(30%) 20mm washed drain rock, (40%) 40mm washed crushed rock, (25%) 60mm washed crushed rock, (5%) 10 - 20cm round cobbles
20%	1.8mm to 4.7mm	10mm washed rounded gravel
20%	1.7mm-	Fine to coarse sand

Zone 2: Property 3 & 6

<u>Percent Composition</u>	<u>Size Range</u>	<u>Common Name</u>
45%	4.8mm+	(30%) 20mm washed drain rock, (40%) 40mm washed crushed rock, (25%) 60mm washed crushed rock, (5%) 10 - 20cm round cobbles
20%	1.8mm to 4.7mm	10mm washed rounded gravel
35%	1.7mm-	Fine to coarse sand

7. Drift Cell Model - Interpretation and Summary of Marine Shoreline Dynamics

The drift-cell of Baker Beach extends 2,350m from the rocky outcrops at south Vesuvius Bay to the mouth of Booth Inlet. This drift-cell is designated based on a common alongshore drift-current that transport sediments and has been generated by consistent waves approaching at oblique angles to the shoreline.

Baker Beach is currently supply limited, resulting in discontinuous sections of beach face, with long-term coastline retreat driven by wave, water and weathering erosion mechanisms. The beach features a bedrock intertidal terrace, over which a moderate alongshore drift-cell current provides low-volume sediment transport.

Consequently, the primary source of sediment for Baker Beach are sections of the adjacent upland coastal bluff, which contribute silt, sand, gravel and limited larger clastics up to boulders.

The delivery of sediment is through progressive erosion mechanisms and punctuated erosion mechanisms. Bedrock erosion produces angular to sub-angular coarse to fine gravel which is highly susceptible to further breakdown due to the fissility of shale – the predominant bedrock type. A variable mantle of ~0.5 – 3m of surficial material contributes sandy to silty loams, with clastic fragment (e.g. gravel, cobbles, stones) content up to 20% by volume. There are sparse stones to boulders on the beach which have weathered out of bedrock during formation of the low-tide terrace, or through erosion of the surficial uplands sediment mantle.

Sediment discharge from the drift-cell includes evacuation of mobilized sediment to off-shore depths, and limited wind-driven loss of fine sediment fraction from the backshore and uplands.

Alongshore sediment movement is facilitated by the low-tide terrace having a gentle slope and predominantly bedrock surface. Outside of the submerged low-tide terrace, alongshore sediment movement is very limited.

8. Suitability of Erosion Mitigation and Sediment Transport Management Recommendations

Previous reporting on geohazards⁵ identified erosion mechanisms and developed recommendations for mitigation. This report has assessed shoreline and sediment processes, culminating in a drift-cell model which differentiates between prevalent kinetic forces (i.e. wave, wind, current & weathering) and results in a generalized sediment budget for Baker Beach.

In this section, the recommended erosion mitigation options are evaluated for suitability in context of existing conditions and drift-cell model. Suitability is a high, moderate and low ranking based on evidence gathered through this and preceding reporting.

The following table is evaluation of activity suitability for mitigation of erosion and management of sediment transport in the Site foreshore.

TABLE 2. SUITABILITY OF EROSION MITIGATION AND SEDIMENT TRANSPORT RECOMMENDATIONS MADE UNDER PREVIOUS GEOHAZARD REPORTING.

Mitigation or Management Activity	Suitability			
	Foreshore	Backshore	Wave Dynamics	Sediment Supply
Monitoring rate of erosion	High Monitoring captures multi-seasonal natural cycles.	High Monitoring captures multi-seasonal natural cycles.	High Direct capture of data.	High Capture seasonal fluctuation in sediment transport.
Bioengineering and selective planting	Low Very challenging establishment conditions.	Moderate Shelter and stabilization of sloughed surficial material and bedrock. Challenging establishment conditions.	Moderate Bioengineered and root reinforcement of sedimentary coastline. Overhanging vegetation would shelter bedrock from weathering.	Low Mitigation activity would reduce primary sediment supply to beach.
Wave deflection	Moderate Reduces incident wave energy reaching backshore. Close placement to be uniformly effective.	Low Would constitute hard armouring in coverage required to be effective.	Moderate Moderate energy wave conditions and presence of discontinuous backshore de-prioritizes this option.	Moderate Reduces incident wave energy reaching backshore. Reduces amount of sediment supplied to beach.
Beach Nourishment	High Post-placement in the backshore, natural transport of sediment would supply the foreshore.	High Placement in the backshore would reduce wave energy reaching coastline.	Moderate Moderate wave energy would evacuate some of placed sediment.	Moderate Subsidize existing natural supply, reduces natural sediment supply. Would need re-supply in future.

The interaction with Site ecology, efficacy and ease of implementation and maintenance of these recommended mitigation options should be carefully considered in context of Marine Shoreline Design Guidelines.

9. Summary

This assessment of Baker Beach and surrounding area marine shoreline has characterized shoreline, wave dynamics, erosion and sediment supply of the area which constitutes a drift-

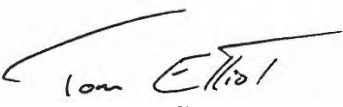
cell. Within Site, detailed foreshore and backshore characteristics were established from field and existing data.

Analysis of beach sediments has identified a zonated drift-cell with deposition of fine sediments in the eastern portion of the Site. The drift-cell generalized sediment budget is low input/output, with primary loss – being fine sands to silts – through evacuation to off-shore. There were two distinct sediment-size distributions identified that would be suitable for beach nourishment activities.

A drift-cell model was developed for the Site, which establishes sediment supply and transport mechanisms present. Using the drift-cell model, a suitability evaluation of erosion mitigation and transport management activities was undertaken for the Site with explanatory rationale demonstrating whether particular recommendations would be viable in context.

Despite moderate energy wave conditions on Site, a limited sediment supply exists due to the low amount of global sediment movement brought about by tidal currents and lack of up-drift sediment sources.

A comparison of activity suitability from this assessment with a similar suitability evaluation based on geohazards and ecology would be instrumental when applying the reference Marine Shoreline Development Guidelines.

Qualified Professional of Record	THOMAS R. ELLIOT PhD P.Geo, P.Ag Name	 Sign

Thomas R Elliot PhD P.Geo. P.Ag.

Date: December 18, 2023
Digital reproduction, original available upon request.

Closure and Limitations

The QP signatory to this assessment and report assures accuracy of existing and field observation, and evaluation of technical geohazard according to best practices of the Engineers and Geoscientists of BC. The content of this report are applicable to the subject land parcels, and specifically the Site as defined in this report. Any extension of the evaluation to areas outside of the defined area assessed are not valid.

The report has been conducted according to guidelines and reporting standards of similarly qualified professionals, given similar time and budget. At time of writing, the report meets due diligence and investigatory reporting requirements to provide QP recommendations with declared competency in the subject areas. Therefore, the author of this report does not maintain liability insurance for actions taken based on the reporting, and only accepts error and omission liability up to the value of this report. The receipt, utilization and any planning, further studies or development actions undertaken by the recipient of this report are based on their acceptance of their own liability therein.

Appendix A

Maps and Figures

Figure 1. Assessment area



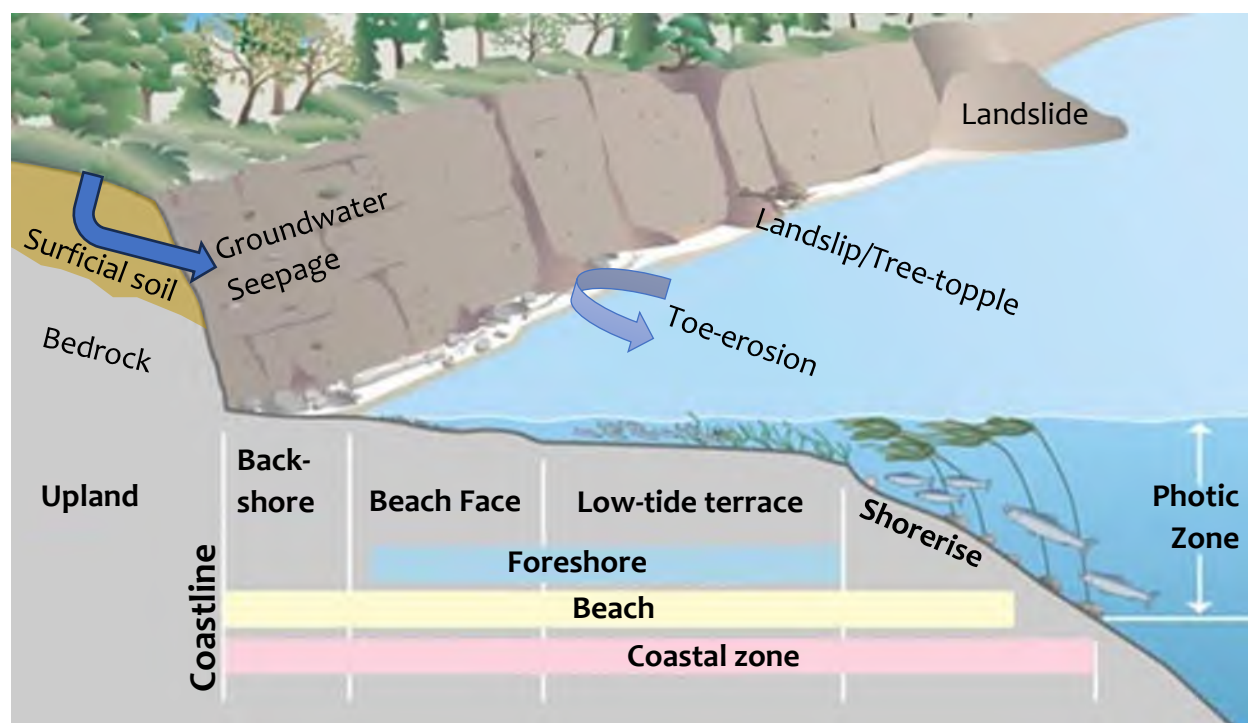
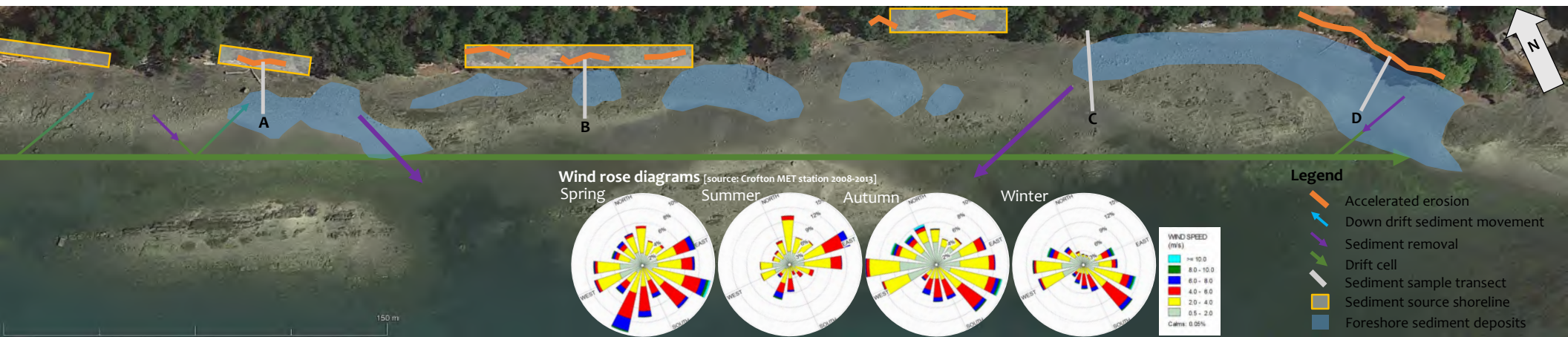


FIGURE 2. CONTEXTUAL DELINEATION OF THE SITE WITH RELEVANT TERMINOLOGY TO ASSIST WITH READING OF THIS REPORT. THE COMPONENTS OF THE COASTAL ZONE AND UPLANDS ARE INDICATED ALONG WITH ACTIVE EROSION MECHANISMS. ADAPTED FROM: [KING COUNTY NEARSHORE ENVIRONMENTS](#), CENTRAL PUGET SOUND, WASHINGTON STATE.

Figure 3. Shoreline types, sediment transects and bedrock outcroppings



Figure 4. Sediment dynamics, drift-cell current, and windrose diagrams



Appendix B

Methods and Rationale

Field and Analytic Methods

Field Methods

Two field days were used to characterize the Site.

Day One: Characterization of geology, geomorphology, wave dynamics, sediment dynamics, and documentation of soil and bedrock erosion/evidence of groundwater.

Day Two: foreshore delineation and beach sediment sampling along Transects A – D, as shown in Figure 3 & 4.

Beach sediment sampling

Sediment samples were collected using appropriate tools, ensuring they represent the area of interest accurately.

A 250mL silicon container was used to collect uniform volume of trowel-excavated (to a depth of 10cm where existent) grab samples from beach sediments at specific locations, as follows: backshore, beach face, low-tide terrace, and shorerise.

The distance from coastline to each sample location was measured alongside multiple GPS enabled photographs which are used to document the precise location.

Each sample was codified, and placed in a sample bag.

The samples were retained in a cool environment until analytic testing (see below).

Analytic Methods

The process of drying and fractioning sediment typically involves the following standard methods:

Drying: The collected sediment samples are spread out in thin layers and set to air dry at a low temperature (usually around 105°C). This process removes moisture from the samples without significantly altering the composition.

Sieving: Dried sediment is sieved through various mesh sizes to fractionate the particles based on their size. This can range from very fine sieves for clay particles to coarser sieves for sand and gravel fractions.

Particle Size Analysis: After sieving, the fractions are weighed and analyzed to determine the percentage of different particle sizes in each fraction. This analysis may involve techniques

such as sedimentation, laser diffraction, or microscopic examination to precisely determine particle size distribution.

Organic Matter and Mineral Content Analysis: Sediment fractions were not evaluated for organic content. Mineral composition was determined by hand-lens heuristic assessment to general rock type.

Data Interpretation: The results obtained from these analyses are used to characterize the sediment, understand its properties, and make inferences about its origin, quality, and potential uses or impacts in various contexts.

Rationale

Wave Dynamics

Wave generation proximal to Site is by two mechanisms: wind and vessel-wake. Wind-generated waves are formed off-shore, above deeper water, oriented in the predominant wind direction of the area, which is shown for Site in Figure 4 seasonal windrose diagrams⁶.

Vessel-wake waves are generated by marine traffic, forming short-period, steep sided wave-trains with moderate height that move quickly across open waters. Larger vessels initiate wave-trains that compound to amplify height, which can exceed wind-generated waves in areas with short-fetch.

Waves generated by wind above deep water are typically short-period, with steep sides, with relatively tall height that move slower during wind-driven generation. Transition to swell waves occurs as the proto-waves concatenate in the orientation of predominant wind as modified by any coastal-reflection. Swell waves are longer, faster and uniformly spaced as they approach coastal environments, whereupon contact with the rising bedrock causes them to shoal and break. The contact with bedrock in shallow waters also starts to re-orient the incoming swell waves to be more perpendicular to the coastline due to refractive waves.

The potential energy contained within swell waves are released as kinetic energy through this shoal and break mechanism. Typically, the wave height (H, trough to crest), period (T, time for crest to crest to pass), length (L), and velocity (C) are related to each other through the following equations:

⁶ It should be noted that the weather-station which acquired wind data for the windrose diagrams shown in Figure 4 is situated at the coastline of Crofton, on the west side of Sansum Narrows – opposite to Site at a distance of 3.8km, and as such the weather-station location will be subject to a wind regime modified by local topography that over-represents winds coming from off-shore – although general trends in wind direction would be consistent for both the meteorological station and Baker Beach.

Eq. 1	$L = 1.56 T$	wave length
Eq. 2	$C = 1.56 T^2$	off-shore wave velocity
Eq. 3	$C = \text{sq.rt.}(g*d)$	near-shore wave velocity, where g is gravitational constant, d is depth of water

wherefrom velocity can be used as general proxy for mechanical energy conveyed by waves.

Transferral of wave potential energy to kinetic energy at the foreshore and coastline is, in part, dependent on the angle of incidence (α), as the measurement of wave alignment to perpendicular from coastline. When waves enter the break and swash zone at oblique angles, the momentum gradient in the alongshore direction produces an alongshore current typically known as a drift current. This current advects sediment mobilized by a combination of wave motion and turbulent motion in the alongshore direction. The alongshore current forms the fundamental component of a Drift Cell, which is a representation of wave, current, tidal and transport processes – ultimately determining distribution of sediment within the Site.

Tides influence waves and kinetic energy delivered to coastlines by altering the shoal and break mechanism through adjustment of the water depth in the foreshore (i.e. high vs. low tide). Exceptionally high tides, typically corresponding to full or new moons, are contributory to backshore composition and configuration due to this increased depth and concurrent wave activity which can reach the backshore.

Tidal currents are critical to supply of fine sediment for drift cells, and within regional proximity to Site there are Department of Fisheries and Oceans current predictions⁷ which indicate a low to moderate tidal effect throughout the Gulf Islands on the east coast of Vancouver Island. Due to Site being off-set from a main tidal channel, the influence on sediment budget is anticipated to have a lesser effect than a similar site more exposed to tidal current.

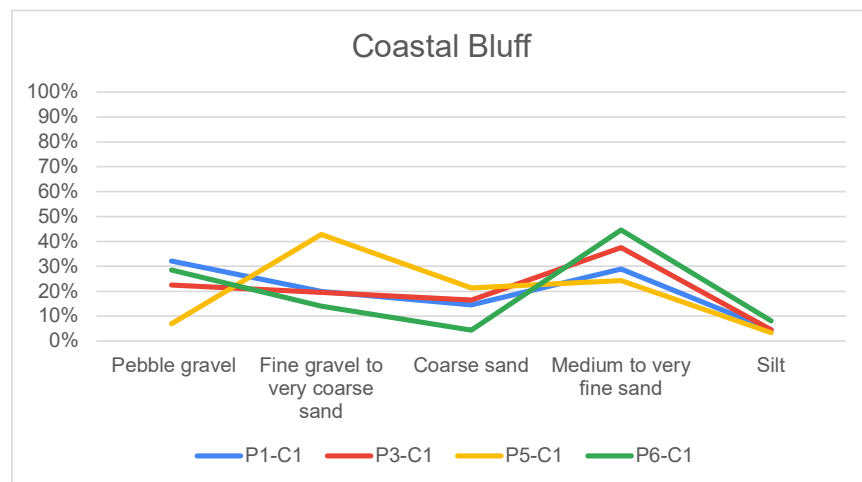
The angle of waves incidental to Site is such that a considerable amount of wave-energy is reflected, or disrupted, from Baker Beach during high tide – resulting in a reduction to incoming moderate wave energy and therefore less kinetic erosion on bedrock and sediment coastline, as well as lower energy evacuation of water from the shoreline. During low-tide conditions, the shoreline bedrock terrace is above sea level, restricting the amount of kinetic energy transferred to the bedrock and sediment coastline.

⁷ Canada Department of Fisheries and Oceans. Current Predictions by Station: <https://tides.gc.ca/en/current-predictions-station> utilizing Gabriola Passage [43km distant], Porlier Pass [17km distant] as indicators. Accessed October 2023.

Appendix C

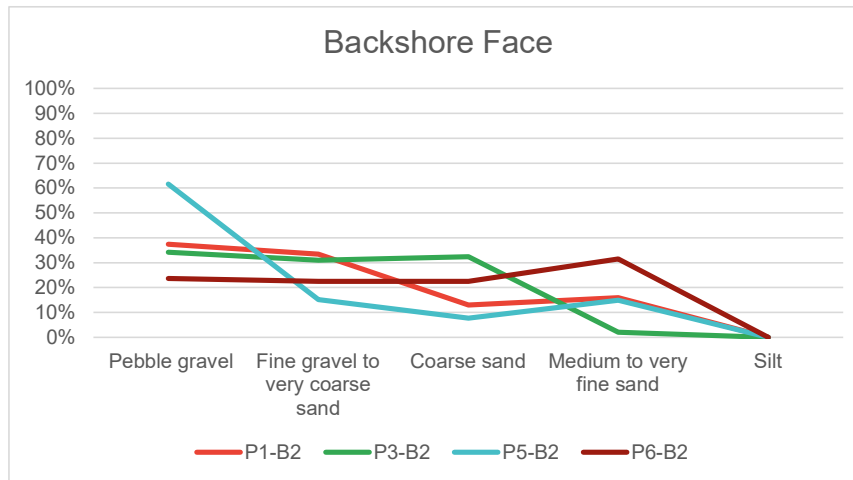
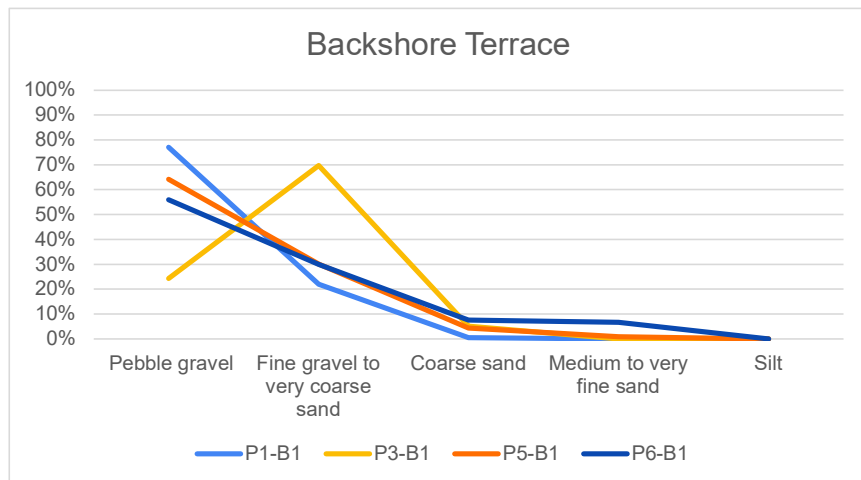
Sediment Analysis

Date	Sector	m	Wet Weigt	Dry Weigh	XL(g)	Pebble gr L (g)	Fine grave	M(g)	Coarse sa	S(g)	Medium tc	XS(g)	Silt	Notes
	P1-C1	n/a	221	221	71	32%	44	20%	32	14%	64	29%	10	5%
	P3-C1	n/a	204	200	45	23%	39	20%	33	17%	75	38%	9	5%
	P5-C1	n/a	280	271	19	7%	116	43%	58	21%	66	24%	9	3%
	P6-C1	n/a	193	186	53	28%	26	14%	8	4%	83	45%	15	8%

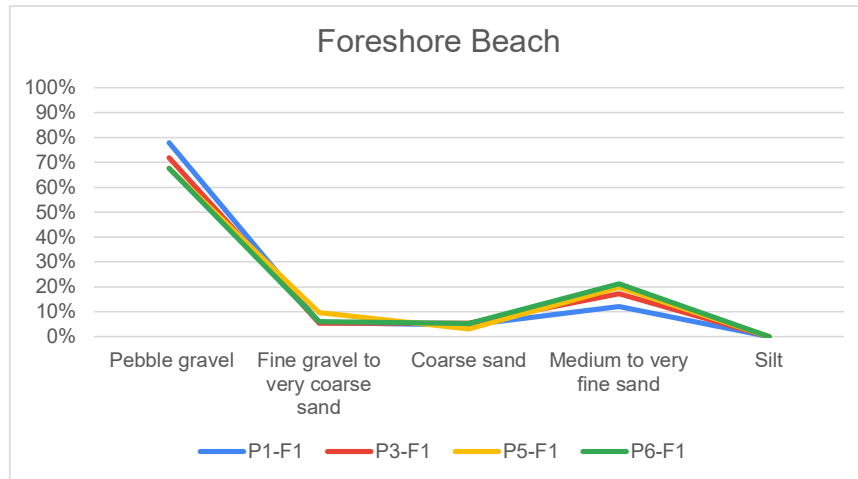


	Size Range (mm)	Wentworth Classification
XL	4.7498	Pebble Gravel
L	4.7497	1.8288 Granule Gravel to Very Coarse Sand
M	1.8287	0.762 Coarse Sand
S	0.7619	0.0737 Medium sand to very fine sand
XS	0.0736	Silt

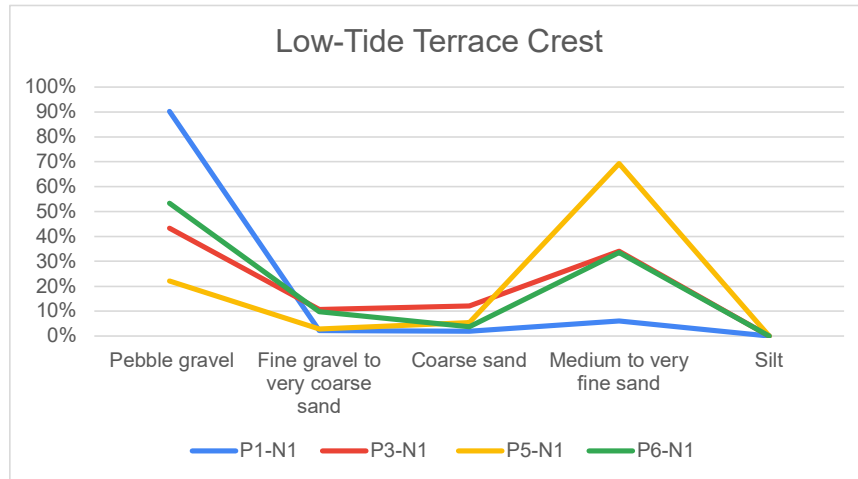
Date	Sector	m	Wet Weight	Dry Weight	XL(g)	Pebble gr L (g)	Fine gravel M(g)	Coarse sand S(g)	Medium to XS(g)	Silt	Notes			
	P1-B1	0.65	322	322	248	77%	71	22%	2	1%	0	0%	0	0%
	P1-B2	2.9	352	337	126	37%	113	34%	44	13%	54	16%	0	0%
	P3-B1	2.26	367	367	89	24%	256	70%	19	5%	0	0%	0	0%
	P3-B2	5.09	346	333	114	34%	103	31%	108	32%	7	2%	0	0%
	P5-B1	1.71	316	316	203	64%	95	30%	14	4%	3	1%	0	0%
	P5-B2	4.54	375	375	231	62%	57	15%	29	8%	56	15%	0	0%
	P6-B1	1.71	355	343	192	56%	103	30%	26	8%	23	7%	0	0%
	P6-B2	4.66	332	317	75	24%	71	22%	71	22%	100	32%	0	0%



Date	Sector	m	Wet Weight	Dry Weight	XL(g)	Pebble gravel (g)	Fine gravel	M(g)	Coarse sand	S(g)	Medium to coarse	XS(g)	Silt	Notes
	P1-F1	9.63	424	404	315	78%	23	6%	19	5%	49	12%	0	0%
	P3-F1	8.64	462	442	318	72%	24	5%	24	5%	76	17%	0	0%
	P5-F1	10.95	408	390	264	68%	38	10%	12	3%	77	20%	0	0%
	P6-F1	10.88	482	457	309	68%	28	6%	24	5%	97	21%	0	0%



Date	Sector	m	Wet Weight	Dry Weight	XL(g)	Pebble gravel (g)	Fine gravel	M(g)	Coarse sand	S(g)	Medium to coarse	S(g)	Silt	Notes
	P1-N1	15.7	569	556	502	90%	12	2%	11	2%	33	6%	0	0%
	P3-N1	17.98	465	422	183	43%	45	11%	51	12%	144	34%	0	0%
	P5-N1	15.18	353	284	63	22%	8	3%	15	5%	197	69%	0	0%
	P6-N1	18.87	466	439	234	53%	43	10%	16	4%	147	33%	0	0%



Deposit Area Weighting Scheme:		
	Weight	Areas impacted by deposit
	10	Backshore Terrace
	60	Backshore Face
	30	Foreshore Beach Face

Aggregate Mix #1 (Property 1 & 5)

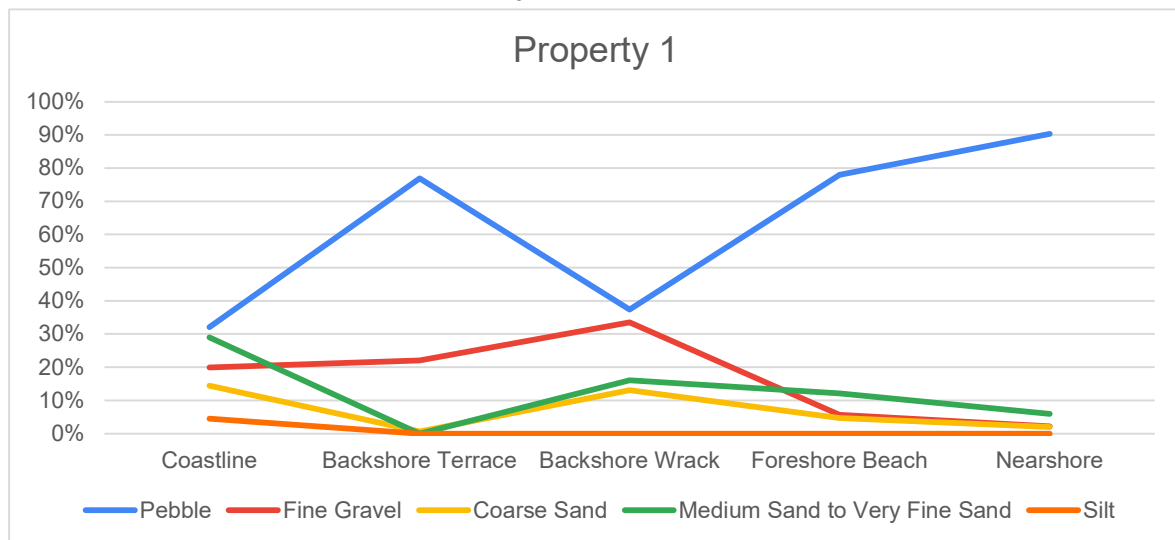
59%	4.8mm+	Drain
20%	1.8 to 4.7mm	pea
22%	fine to coarse sand	fine to coarse sand

Property 1

	Coastline	Backshore	Backshore	Foreshore	Nearshore
Pebble	32%	77%	37%	78%	90%
Fine Gravel	20%	22%	34%	6%	2%
Coarse Sand	14%	1%	13%	5%	2%
Medium Sand to Very Fine Sand	29%	0%	16%	12%	6%
Silt	5%	0%	0%	0%	0%

Recommended Composition

Pebble	54%
Fine Gravel	24%
Coarse Sand	9%
Medium Sand to Very Fine Sand	13%
Silt	0%

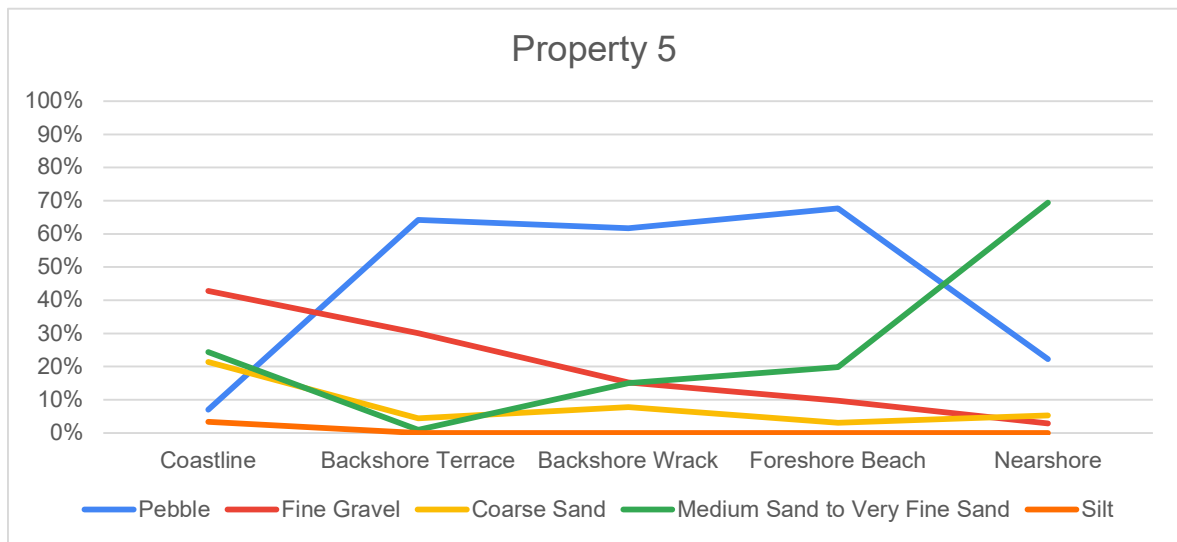


Property 5

	Coastline	Backshore	Backshore	Foreshore	Nearshore
Pebble	7%	64%	62%	68%	22%
Fine Gravel	43%	30%	15%	10%	3%
Coarse Sand	21%	4%	8%	3%	5%
Medium Sand to Very Fine Sand	24%	1%	15%	20%	69%
Silt	3%	0%	0%	0%	0%

Recommended Composition

Pebble	64%
Fine Gravel	15%
Coarse Sand	6%
Medium Sand to Very Fine Sand	15%
Silt	0%



Sediment Size**Range (mm)****Wentworth Classification**

+	4.7498	Pebble Gravel
4.7497	1.8288	Granule Gravel to Very Coarse Sand
1.8287	0.762	Coarse Sand
0.7619	0.0737	Medium sand to very fine sand
0.0736	-	Silt

Aggregate Mix #2 (Property 3 & 6)

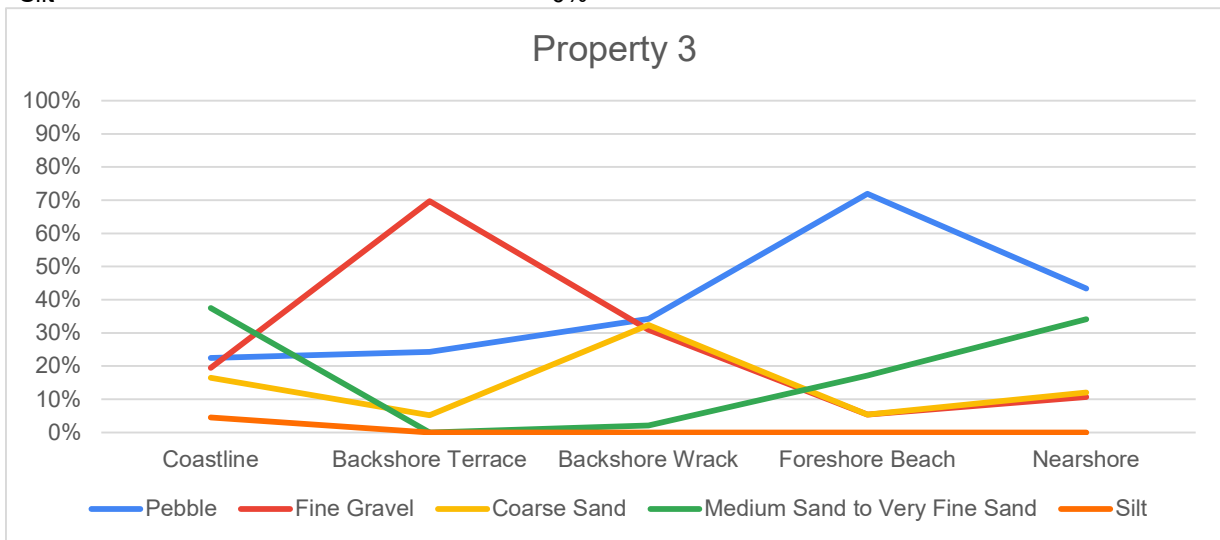
42%	4.8mm+	Drain
23%	1.8 to 4.7mm	pea
35%	fine to coarse sand	fine to coarse sand

Property 3

	Coastline	Backshore	Backshore	Foreshore	Nearshore
Pebble	23%	24%	34%	72%	43%
Fine Gravel	20%	70%	31%	5%	11%
Coarse Sand	17%	5%	32%	5%	12%
Medium Sand to Very Fine Sand	38%	0%	2%	17%	34%
Silt	5%	0%	0%	0%	0%

Recommended Composition

Pebble	45%
Fine Gravel	27%
Coarse Sand	22%
Medium Sand to Very Fine Sand	6%
Silt	0%

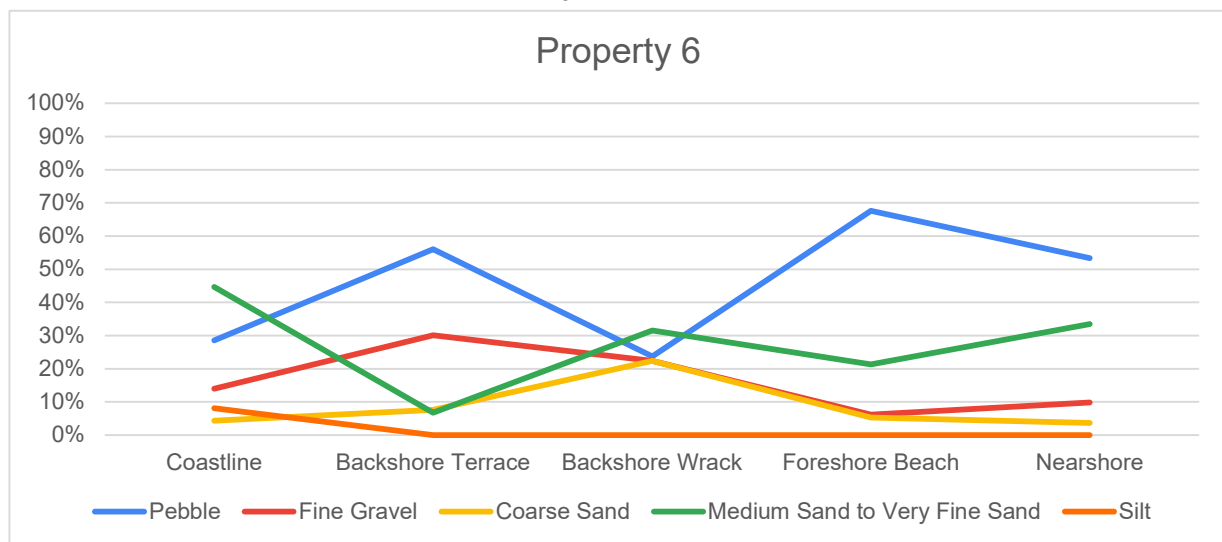


Property 6

	Coastline	Backshore	Backshore	Foreshore	Nearshore
Pebble	28%	56%	24%	68%	53%
Fine Gravel	14%	30%	22%	6%	10%
Coarse Sand	4%	8%	22%	5%	4%
Medium Sand to Very Fine Sand	45%	7%	32%	21%	33%
Silt	8%	0%	0%	0%	0%

Recommended Composition

Pebble	40%
Fine Gravel	18%
Coarse Sand	16%
Medium Sand to Very Fine Sand	26%
Silt	0%



Summary of Baker Beach Shoreline Erosion Mitigation Recommendations

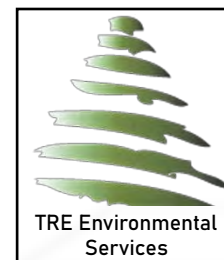
As pertaining to areas seaward of land parcels:

235 Quarry Drive PID 009-555-706
239 Quarry Drive PID 009-555-731
434 Baker Road PID 009-555-781
431 Baker Road PID 000-014-656

SALT SPRING ISLAND

Developed for: Aurora Professional Group
c/o Bradley Fossen P.Eng
338 Lower Ganges Rd UNIT 202
Salt Spring Island, BC V8K 2V3

Developed by: Thomas R Elliot PhD P.Geo P.Ag
TRE Environmental Services
tom@elliot.org



1. Introduction

This summary report and preceding investigations were conducted within the intentions of A Coastal Marine Strategy for British Columbia¹, and we specifically acknowledge that our work spans Halalt and Penelakut Tribe First Nation territories. We are grateful for the knowledge, teachings and holistic worldviews contained within. These holistic worldviews were, and are, foundational to how First Nation Peoples steward the lands, water, seabed, air and resources that sustain them.

This summary report presents climate resilient shoreline erosion mitigation opportunities for Bakers Beach, Salt Spring Island. The existing geohazards, ecologic, and marine characteristics of Bakers Beach and surrounding area have been assessed in previous reporting which is the result of field and desktop investigations. Those investigations have guided the identification of suitable and effective mitigation measures for the area in context of local shoreline processes.

The suitability of mitigation measures was guided by the Stewardship Centre for British Columbia Green Shores for Homes² program, including the assessment approach and our best practices for erosion management. Suitability is based on site characteristics evaluated during assessment of upland geohazards and surface hydrology³; shoreline and coastal sediment dynamics⁴; and Environmental Assessment⁵.

The recommendations within this report are generalized, with Site specific design pending support of concept by participating property owners and local government.

2. Shoreline and Upland Characteristics

There were no significant geohazards identified within upland of the assessed areas, ensuring no overriding natural hazard would affect the recommended mitigation measures. There is both natural and ditched concentration of stormwater flow to pre-existing natural catchments. A consistent upland terrace across the assessed area has sparse areas where stormwater flow concentrates, creating localized soil wetness, fostering wet-soil vegetation

¹ A Coastal Marine Strategy for British Columbia Policy Intentions Paper (December 2022). <https://engage.gov.bc.ca/app/uploads/sites/121/2022/12/Coastal-Marine-Strategy-Intentions-Paper.pdf> Accessed 11/2023

² Stewardship Centre of BC. Green Shores for Homes. 2023. https://stewardshipcentrebc.ca/PDF_docs/greenshores/Resources/GSHCreditsandRatingsGuide.pdf

³ Geohazard Assessment of Lands. Pertaining to upland area from the shoreline of 235, 239 Quarry Drive and 431, 434 Baker Rd. TRE Environmental Services. File: 2023.900_A – D

⁴ Assessment of Marine Shoreline Characteristics: Report for Coastal Erosion Mitigation. TRE Environmental Services. File: 2023.900_E

⁵ Environmental Assessment: 235, 239 QUARRY DRIVE & 434, 431 BAKER ROAD SALT SPRING ISLAND. Corvidae Environmental Consulting Inc.

and affecting downslope coastal bluff erosion. Vegetation of the upland terrace and slopes above are typical of the red-listed Douglas-fir – arbutus ecological community, which is at risk of being lost in BC.

The coastal bluff trends from bedrock-dominant in the northwest, downward (dipping) to the southeast whereby the low gradient backshore and coastline is predominantly fine gravel and sand (respectively). Vegetation along the coastal bluff was characterized by Douglas-fir – arbutus woodland species, with lesser amounts of shore pine and Garry oak. Understory species included pink (hairy) honeysuckle, grasses, weeds, evergreen huckleberry, and numerous invasive species. The shoreline and uplands are habitat for river otter, belted kingfisher, and a variety of yellow listed bird species.

The majority of foreshore area is dominated by a low-tide terrace, which results in retention of the sediment that forms the beach face and backshore sediment terrace. The beach face is predominantly gravel and sands with frequent cobble to boulder coarse fragments. The southeastern foreshore, in front of 431 Baker Road is dominated by the beach face, which trends toward finer sediment with sparse stones and boulders. The backshore has limited grasses, with minor occurrence of landslip depositing sufficient mineral soil on the backshore terrace to foster salt tolerant woody species – although these deposits are at risk of removal under unmitigated storm wave-action.

There are areas of the foreshore mapped as surf smelt and Pacific sand lance spawning habitat. Off-shore, there are mapped eelgrass beds which support herring and forage fish. Additionally, there are known plainfin midshipman rearing grounds off-shore – which draws raptors and sea-birds to the annual food source. Intersecting these off-shore area is a mollusc lease parcel, which has seen intermittent operation in recent history.

Any recommended mitigation options will maintain critical awareness of these habitat to maintain a healthy and productive coast that sustains ecosystems with abundant fisheries and marine wildlife.

3. Summary of Management and Mitigation Options

One of the easiest and most effective management options is monitoring the rate of erosion. A suitable method for monitoring is static-location imagery, with conscious effort to reproduce both location and visibility-conditions to provide comparable results. Timing of monitoring should be once per year at minimum, with updated imagery after significant storm events so as to capture occurrence of punctuated erosion.

3.1. Bioengineering and Revegetation

Bioengineering and selective planting of the backshore, coastline and upland terrace are recommended in the areas indicated in Figure 1 of this document. Each shading colour in Figure 1 indicates differing goals and motivation for planting, as follows:

- Backshore planting: Primarily planting grasses and sedge due to a lack of accumulated mineral soil that would support larger woody species. Planting would intend to create 'clumps' on the backshore terrace to encourage sediment accumulation.
- Coastline planting: Planting is viable in the upper surficial materials which cap the bedrock coastal bluff. The coarse soil texture and south-facing exposure results in an anticipated attrition of planting-stock due to drought conditions, or consistent irrigation during drought season. Where appropriate along the coastal bluff implementing a succession tree-planting program would benefit the relatively even-aged population of existing trees. There is opportunity for pole planting of salt-tolerant woody species along the southeastern coastline fronting 431 Baker Road. Invasive management is recommended for the coastline of 431 Baker Road as part of the revegetation process.
- Upland terrace planting: Planting of wetted soils would increase evapotranspiration, reducing long-term groundwater erosion of the coastal bluff. In these areas, it would be suitable to plant hydrophilic species common to the Douglas-fir – arbutus woodland species understory. Extending additional deeper-rooted plantings from these wetted areas to the coastal bluff would increase soil cohesion of the area likely to fail.

3.2. Wave Deflection

Wave deflection is recommended, in areas shown in Figure 2, to disperse the persistent wake from vessel traffic, which contributes to sediment loss from the foreshore. An effective way to accomplish wave deflection is by sparse placement of boulders along the low-tide terrace so as to provide relatively uniform coverage from the predominant wave direction (west, for vessel wake). These boulders would be submerged at high tide, and as such would assist in disrupting plunging breaker wave action, prompting transition to surging breaker wave which better distributes (i.e. lessen the peak) erosion forces. The shoreline already has sparse coverage of large glacial erratics, weathered nodular boulders emerging from bedrock, and stones to boulders from upland till and bedrock exposures. Placement of boulders would look to mimic and enhance this natural process to accomplish erosion mitigation goals.

3.3. Beach Nourishment

Beach nourishment, as a concept, is an exaggeration of existing natural sediment supply processes which primarily uses coarse sediment due to mobility – and therefore loss – of fine sand and smaller particles. The installation of sediment for beach nourishment also attenuates with natural conditions through localized re-distribution within the backshore, foreshore beach face and low-tide terrace.

The intention of a beach nourishment program for the assessed area is to increase the width and elevation of backshore terrace, as shown in Figure 3, approaching the coastal bluff in most areas. This supplement to the sediment budget is intended to dissipate incoming wave energy by changing the plunging breaker wave type (higher erosion) occurring under storm event conditions to a surging breaker wave type (lower erosion).

The beach nourishment program will supplement long-term sediment deficiency resulting from hard armouring within the drift-cell and coastal bluff erosion mitigation activities. As the preceding assessments have accounted for our changing climate and sea level rise⁶, the recommended beach nourishment meets a number of climate change resilience objectives as explored through the following sections of this document.

4. Applicable Potential Green Shores Credits Scoring

The following evaluates the recommended measures and associated activities under the Green Shores for Homes credit scheme, wherefrom categories which have no applicability have been excluded from the following table.

Green Shore for Homes Credit Categories	Possible Score	Potential Project Score
Shoreline physical processes		
1.2 Setback/Impact Avoidance (110m/600m does not qualify)	9	7
1.5 Nature-Based Erosion and Flood Management	13	13
Shoreline habitat		
2.1 Enhance Bird Habitat Stewardship	8	8
2.2 Riparian and Emergent Vegetation	13	13
2.3 Trees and Snags	5	4
2.4 Invasive Plants	4	2
2.5 Organic Material	6	5
2.6 Overwater Structures	6	4
Water Quality		
3.2 Reduce and Treat Runoff	9	7
3.5 Aesthetic Vegetation Chemical Control	3	3
3.6 On-Site Sewage Treatment	4	3
Shoreline stewardship		

⁶ Natural Resources Canada. James *et al.* 2021. Relative sea-level projections for Canada based on the IPCC Fifth Assessment Report and the NAD83v70VG national crustal velocity model.
https://geoscan.nrcan.gc.ca/text/geoscan/fulltext/of_8764.pdf

4.1 Shoreline Collaboration	8	8
4.2 Public Information and Education	3	3
4.3 Conservation Easement or Covenant	6	2
4.4 Shoreline Stewardship Participation	2	2
Total	99	84

Of note is that Potential Project Score is optimal, and performance should be based on the Project aspiring to secure all 84 credits while recognizing that the Green Shores for Homes Gold rating is a minimum 40 points, of which a minimum 20 points (collectively) are acquired from Shoreline Process and Shoreline Habitat credit categories.

5. BC Marine Strategy Intentions

In this section, the recommended mitigation measures are generally evaluated under the 30 intentions of the BC Marine Strategy – as presented in the table below with the following ranking method:

Intention Met	No Reasonable Affect	Detracts from Intention	
BC Marine Strategy Intention	Bioengineering and Revegetation	Wave Deflection	Beach Nourishment
Healthy and Productive Coast			
A-1 Wild salmon			
A-2 Monitor health			
A-3 Prevent pollution			
A-4 Protect habitat			
A-5 Recover S.A.R.			
Resilience to Climate Change			
B-1 Safe communities			
B-2 Support seafood			
B-3 Nature-based solutions			
B-4 Mitigate acidification			
B-5 Protect carbon sinks			
Trusting, Respectful Relationships			
C-1 Respect FN rights			
C-2 Engage British Columbians			
C-3 Collaborative stewardship			
C-4 Coastal legislation			
Holistic Learning and Knowledge Sharing			
D-1 Weave Traditional and Western			
D-2 Value the Ocean			

D-3 Enhance spatial data			
D-4 Improve data access			
Community Well-Being			
E-1 Create steady employment			
E-2 Diverse workforce			
E-3 Support FN cultural revitalization			
E-4 Improve community resilience			
E-5 Develop marine use plans			
E-6 Improve access to nature			
A Sustainable, Thriving Ocean Economy			
F-1 Invest and Diversify			
F-2 Co-develop FN opportunities			
F-3 Support marine fisheries			
F-4 Advance sustainable aquaculture			
F-5 Support regenerative marine tourism			
F-6 Manage cumulative effects			

Broadly, the recommended erosion mitigation is meeting the intentions of the BC Marine Strategy, with areas of Community Well-Being and Sustainable, Thriving Ocean Economy remaining challenging intentions to meet through the limited size of this project.

6. Conclusion and Next Steps

Due to the low-tide terrace and low gradient foreshore beach-face within the assessed area, there is an opportunity to manage the consequence of sea level rise through a hybrid soft-shores erosion mitigation program that includes upland water management and riparian vegetation enhancement.

The scoped mitigation program includes three distinct options: Bioengineering and revegetation; Wave deflection; and Beach nourishment which can be implemented in the areas indicated in Figures 1 - 3.

The evaluation of the recommended measures was conducted under the Green Shores for Homes credit scheme, wherefrom a score of 84/99 possible credits was determined to be reasonably accomplished. Additionally, the alignment with BC's Marine Strategy Intentions was determined to be meeting most intentions or having no affect. There was no adverse impact to BC Marine Strategy Intentions consequent to the recommended mitigation measures identified through this evaluation.

The next steps in this process are to work under the Shoreline Stewardship credit categories as well as Intentions C – D (as shown above) to secure local government, stewardship, community and First Nation support. With support, permit applications will be required prior

to implementation. Additional technical detail beyond what has been provided in this report, including detailed survey and cross-sections of proposed alterations, will be necessary for permit applications.

7. Closure

The undersigned certifies that the above recommendations are based on best practices, guidance and professional experience to the capacity of the qualified professional of record – under similar constraints. There is reasonable expectation of professional product to be of sufficient quality and accuracy to be acceptable by receiving landowners, agency and governments. However, revision is an acceptable practice – one that I encourage and embrace. Should any requests for changes be made, please contact the undersigned.

Qualified Professional of Record	THOMAS R. ELLIOT PhD P.Geo, P.Ag Name	 Signature

Thomas R Elliot PhD P.Geo. P.Ag.

Digital copy of physical stamps, original available upon request.
Date: <u>January 5 2024</u>

Limitations

The QP signatory to this assessment and report assures accuracy of existing and field observation, and evaluation of technical geohazard according to best practices of the Engineers and Geoscientists of BC. The content of this report are applicable to the subject land parcels, and specifically the Site as defined in this report. Any extension of the evaluation to areas outside of the defined area assessed are not valid.

The report has been conducted according to guidelines and reporting standards of similarly qualified professionals, given similar time and budget. At time of writing, the report meets due diligence and investigatory reporting requirements to provide QP recommendations with declared competency in the subject areas. Therefore, the author of this report does not maintain liability insurance for actions taken based on the reporting, and only accepts error and omission liability up to the value of this report. The receipt, utilization and any planning, further studies or development actions undertaken by the recipient of this report are based on their acceptance of their own liability therein.

Figure 1. Areas recommend to undergo riparian and coastline revegetation

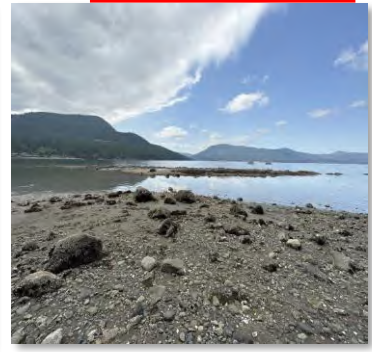


Figure 2. Areas recommended for wave deflection installations



Figure 3. Areas recommended to receive beach nourishment





ENVIRONMENTAL ASSESSMENT

235, 239 QUARRY DRIVE & 434, 431 BAKER ROAD
SALT SPRING ISLAND

PREPARED FOR:
BRADLEY FOSSEN
AURORA PROFESSIONAL GROUP INC.
SALT SPRING ISLAND, BC

AND

ISLANDS TRUST - SALT SPRING ISLAND
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DEPARTMENT OF FISHERIES AND OCEANS CANADA
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CORVIDAE
ENVIRONMENTAL CONSULTING INC

6526 WATER STREET, SOOKE, BC

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	REGULATORY FRAMEWORK.....	4
2	SCOPE OF WORK.....	7
3	METHODS.....	7
3.1	DESKTOP REVIEW.....	7
3.2	FIELD ASSESSMENT	7
4	ENVIRONMENTAL SITE ASSESSMENT	8
4.1	CLIMATE AND BIOGEOCLIMATIC ZONE	8
4.2	TERRAIN AND SOILS	8
4.3	VEGETATION.....	8
4.4	WILDLIFE	10
4.5	MARINE ENVIRONMENT.....	10
4.6	SPECIES AT RISK	12
5	POTENTIAL ENVIRONMENTAL IMPACTS AND RECOMMENDED ENVIRONMENTAL PROTECTION MEASURES	15
6	REFERENCES	16
	APPENDIX A – SITE PHOTOGRAPHS	17

LIST OF TABLES

Table 1.	Site details	1
Table 2.	Plant species observed on site during the field visit on May 30, 2023.	9
Table 3.	Wildlife Species observed on site during the field visit on May 30, 2023.....	10
Table 4.	Species at risk that may occur in the vicinity of the Site.....	12
Table 5.	Aquatic species at risk that may occur in the vicinity of the Site.	13

LIST OF FIGURES

Figure 1.	Site Location	3
Figure 2.	Development Permit Area 3 - Shoreline	6
Figure 3.	Sensitive Shoreline Area in proximity to the Site	11
Figure 4.	Species and ecosystems at risk occurrences in the vicinity of the property	14



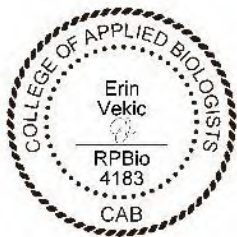
LIST OF PHOTOS

Photo 1. Close-up of foreshore ground, looking southeast. May 30, 2023.....	17
Photo 2. West view of the foreshore environment. May 30, 2023.....	17
Photo 3. Invasive species infestation near 431 Quarry Road, looking north. May 30, 2023.....	18
Photo 4. Northeast view of belted kingfisher nesting burrows. May 30, 2023.	18
Photo 5. North view of upland forested habitat. May 30, 2023.....	19
Photo 6. View of cliff/shoreline bank, looking west. May 30, 2023.....	19
Photo 7. Southwest view of backshore environment at 235 Quarry Road. May 30, 2023.	20
Photo 8. North view of riprap placement at CRD beach access near 431 Baker Road. May 30, 2023.	20

CAVEAT

This Environmental Assessment (EA) has been prepared with the best information available at the time of writing, including the Salt Spring Island Official Community Plan, communications with the client, a site visit, review of site plans and design drawings and other documentation relevant to the project. This EA has been developed to assist the project in remaining in compliance with relevant environmental regulations, acts and laws pertaining to the project and to identify sensitive environmental features that may require mitigation and consideration during future phases of the project.

Report Prepared By:



Erin Vekic, R.P.Bio, M.Sc.,
Environmental Biologist
Corvidae Environmental Consulting Inc.



1 INTRODUCTION

Corvidae Environmental Consulting Inc. (Corvidae) is pleased to provide this Environmental Assessment (EA) for the properties located at 235, 239 Quarry Drive and 434, 431 Baker Road, Salt Spring Island (the Site)(Figure 1)(Table 1). The Site includes four shoreline lots that are zoned as Rural (R). The Site occurs within the Shoreline Development Permit Area (DPA) 3 as outlined in the Salt Spring Island Official Community Plan (OCP) and shown on Map 20. DPA 3 includes upland areas within 10 metres of the natural boundary and the marine environment 300 m seaward of the natural boundary (measured horizontally).

Table 1. Site details

Civic Address	PID	Legal description	Current Zoning
235 Quarry Drive	009-555-706	LOT 1, PLAN VIP46155, SECTION 6, RANGE 1W, COWICHAN LAND DISTRICT, PORTION NORTH SALT SPRING, & SEC 7	R
239 Quarry Drive	009-555-731	LOT 3, PLAN VIP46155, SECTION 6&7, RANGE 1W, COWICHAN LAND DISTRICT, PORTION NORTH SALT SPRING	R
434 Baker Road	009-555-781	LOT 5, PLAN VIP46155, SECTION 6, RANGE 1W, COWICHAN LAND DISTRICT, PORTION NORTH SALT SPRING	R
431 Baker Road	000-014-656	LOT AM2, PLAN VIP7144, SECTION 6, RANGE 1W, COWICHAN LAND DISTRICT, PORTION NORTH SALT SPRING, EXCEPT PLAN 40042, EXC PT IN PL 40042	R

This EA is provided in support of proposed coastal erosion mitigation development activities (the project) at the Site within the shoreline DPA. The project is proposed in response to identified bluff failure that is occurring due to the following mechanisms: 1) upland conveyance of rainwater contributing to pore water pressure in the soils/surficial material wedge sitting atop bedrock coastal bluffs, and 2) wave action creating toe erosion (bedrock) or undercutting (sediments). These issues and mechanisms have been outlined in detail within Geohazard Assessment Reports that were completed for each property listed in Table 1 by a Qualified Professional (QP) (submitted separately).

Design mechanisms are currently being developed; it is planned that a beach nourishment technique will be applied to the Site. This is determined by following the marine shoreline design guidelines decision tree (Johannessen et al. 2014). This technique involves the strategic placement of material (e.g., sand, gravel) to reduce erosion of upper beach and backshore areas. Placement of gravel and limited fines creates porosity and air space to decrease wave energy along the shoreline. Materials sourced for the proposed beach nourishment would be brought in via barge and applied to specific areas at the Site, as directed by a QP.

This EA document, in combination with the Geohazard Assessment Reports, will be utilized to inform future coastal erosion mitigation development activities, as determined by a QP, to target the identified bluff failure at the Site. This EA will be updated to include potential environmental effects of the proposed project and recommended environmental protection measures once formalized project design details have been received. All future proposed coastal erosion mitigation development activities must be



completed in accordance with the Salt Spring Island Official Community Plan (OCP) Bylaw No. 434 as well as relevant provincial and federal legislation.





Site Location

Property Boundary

N

0 25 50 100 150 200 Meters

Project: 235 Quarry Road, 239 Quarry Road, 431 Baker Road & 434 Baker Road

Sources: Capital Regional District

Corvidae Project No.
COR-2023-050

Rev. #	Date
0	October 19, 2023

Figure 1

1.1 REGULATORY FRAMEWORK

This environmental assessment is designed to comply with the provisions set out in the Salt Spring Island Official Community Plan (OCP) Volume 2 Part E for development permit areas (DPAs) and for compliance with the provisions for environmental protection contained in the following relevant legislation:

Municipal

Salt Spring Island OCP, Bylaw No. 434 (Salt Spring Island Local Trust Committee 2008)

DPA 3 - Shoreline

“Development Permit Area 3 is shown on Map 20. It is all that area of land covered by water between the natural boundary of the sea and a line drawn parallel to and 300 m seaward of the natural boundary of the sea. It also encloses the land within 10 m of the natural boundary of the sea (measured horizontally) in areas where the marine environment has been identified as being particularly sensitive to development impacts.

Development Permit Area 3 is designated according to Section 879 (1)(a) of the Municipal Act to identify objectives and guidelines for the form and character of the commercial and general employment development allowed on the water surface. It is also designated according to Section 879 (1)(a) and (b) to protect the natural environment and to protect development from hazardous conditions.”

Objectives for DPA 3 include the following:

- “To protect the quality of the tidal waters that surround Salt Spring Island.
- To protect fish and wildlife habitat.
- To prevent erosion and hazardous conditions that could result from interrupting the natural geohydraulic processes along the shoreline.
- To protect development from hazardous conditions. BL488 (07/20)
- To protect the natural beauty of the island's shoreline areas where commercial and general employment developments are allowed.
- To ensure such development is unobtrusive and contributes to the natural, public character of the Crown foreshore.”

The development permit areas are shown in Figure 2. The guiding principle for the use of Development Permits is found within the *Local Government Act*. Development Permit Areas can be designated for purposes such as, but not limited to: protects, enhances and restores the biodiversity and ecological values and functions of environmentally sensitive areas; fosters compatibility between development, existing land uses and environmentally sensitive areas; maintains connectivity between sensitive ecosystems; and protects water quality and quantity.

Provincial

- Wildlife Act (1996)
- Invasive Species Council of BC
- *Weed Control Act* (1996, current as of October 2016)



Federal

- Migratory Birds Convention Act (1994)
- Species at Risk Act (SARA) (2002)
- Fisheries Act (2019)
- Canadian Environmental Protection Act (CEPA) (1999)
- Canadian Navigable Waters Act (1985)

Guidelines

Washington State Aquatic Habitat Guidelines Program: Marine Shoreline Design Guidelines (2014)
<https://wdfw.wa.gov/sites/default/files/publications/01583/wdfw01583.pdf>





Development Permit Area 3 - Shoreline

- Shoreline - Forshore
- Shoreline - On-land portion
- Property Boundary



0 25 50 100 150 200 Meters
 Project: 235 Quarry Road, 239 Quarry Road, 431 Baker Road & 434 Baker Road
 Sources: Capital Regional District

CORVIDAE
 ENVIRONMENTAL CONSULTING INC

Corvidae Project No.
 COR-2023-050

Rev. #	Date
0	October 19, 2023

Figure 2

2 SCOPE OF WORK

Corvidae completed an environmental assessment for the aforementioned properties listed in Table 1. The environmental assessment documented the ecological features on the Site with a focus on the shoreline and foreshore areas. Background information was reviewed, including applicable databases. During the assessment, the following features were documented in this report:

- Areas of sensitivity, including the marine shoreline environment.
- Areas of habitat and biodiversity values.
- Plant communities and plant species on site.
- Potential wildlife presence and wildlife habitat.
- Soil types and terrain.
- Surface water flow patterns.

3 METHODS

3.1 DESKTOP REVIEW

Baseline biophysical conditions were compiled by reviewing the best available data and information including existing reports for the area and conducting searches of online provincial and federal databases:

- BC Conservation Data Centre (BC CDC 2023a and 2023b).
- BC HabitatWizard (Province of BC 2023).
- Aerial photographs of the property (Google Earth 2023).
- CRD mapping system and database (CRD 2021).
- MapIT application (Islands Trust 2023)
- Salt Spring Island Official Community Plan Bylaw No. 434 (Salt Spring Island Local Trust Committee 2008).

3.2 FIELD ASSESSMENT

A field assessment of the property was completed by a Qualified Environmental Professional (QEP) from Corvidae. The assessment included characterization of vegetation and habitat types, wildlife sign and species observations, wildlife habitat, and assessed the current conditions of the Site.

4 ENVIRONMENTAL SITE ASSESSMENT

Corvidae completed a site visit on May 30th, 2023. Site photos are included as Appendix A.

4.1 CLIMATE AND BIOGEOCLIMATIC ZONE

The project is located within the Coastal Douglas-fir (CDF) biogeoclimatic zone, specifically in the Moist Maritime Coastal Douglas-fir Subzone (CDFmm) (BC CDC 2021b). The CDFmm occurs at low elevations (<150 m) along southeast Vancouver Island, the southern Gulf Islands, and part of the Sunshine Coast. The CDFmm has the mildest climate in Canada. This subzone has a long growing season with warm, dry summers and mild, wet winters.

4.2 TERRAIN AND SOILS

Soils in the CDF biogeoclimatic zone, generally derived from morainal, colluvial, and marine deposits, are typically Brunisols, grading with increased precipitation to Humo-Ferric Podzols (Nuszdorfer et al. 1991). Soils on the Site are generally comprised of loam, well-draining, Orthic Dystric Brunisol soils. (GALIANO soil association) (BC SIFT 2018). The Site slopes moderately to steeply from northeast to southwest in the direction of the shoreline.

4.3 VEGETATION

South-facing, dry banks along the shoreline and immediate backshore area were forested and characterized by a Douglas-fir – arbutus woodland with lesser amounts of shore pine and Garry oak. The structural stage was observed to be young forest with larger (mid-seral) trees occurring intermittently. Species observed are consistent with the red-listed Douglas-fir – arbutus ecological community, which is an ecological community that is at risk of being lost (extirpated, endangered or threatened) in BC. Understory species in the immediate backshore included predominantly low growth of salal and dull Oregon-grape. Banks along the shoreline were characterized by pink (hairy) honeysuckle, grasses, weeds, evergreen huckleberry, and invasive species. The moss layer was very poorly developed near the shoreline.

All vegetation species detected during the site assessment are listed in Table 2. Six invasive species were observed, including English ivy, scotch broom, Himalayan blackberry, bull thistle, oxeye daisy, and spurge-laurel. All are listed as Control Species according to the Capital Regional District, whereby established infestations of these species are common and widespread throughout the Capital Region. Control should be focused in high value conservation areas¹.

¹ Capital Regional District. 2019. Status List for Priority Invasive Plants in the Capital Region. Available at: https://www.crd.bc.ca/docs/default-source/default-document-library/2019-03--regional-priority-invasive-species-list.pdf?sfvrsn=836aceca_0.



Table 2. Plant species observed on site during the field visit on May 30, 2023.

Common Name	Scientific Name	BC Provincial Status ¹	SARA Schedule 1 Status ²
Arbutus	<i>Arbutus menziesii</i>	Yellow	--
Baldhip rose	<i>Rosa gymnocarpa</i>	Yellow	--
Balsam poplar	<i>Populus balsamifera</i>	Unknown	--
Bigleaf maple	<i>Acer macrophyllum</i>	Yellow	--
Blue wildrye	<i>Elymus glaucus</i>	Yellow	--
Bracken fern	<i>Pteridium aquilinum</i>	Yellow	--
Broadleaf stonecrop	<i>Sedum spathulifolium</i>	Yellow	--
Bull thistle	<i>Cirsium vulgare</i>	Invasive ; Exotic	--
Common lamb's-quarters	<i>Chenopodium album</i>	Exotic	--
Common snowberry	<i>Symphoricarpos albus</i>	Yellow	--
Common sow-thistle	<i>Sonchus oleraceus</i>	Exotic	--
Douglas-fir	<i>Pseudotsuga menziesii</i>	Yellow	--
Dull Oregon-grape	<i>Mahonia nervosa</i>	Yellow	--
Evergreen huckleberry	<i>Vaccinium ovatum</i>	Yellow	--
English ivy	<i>Ilex aquifolium</i>	Invasive ; Exotic	--
Field elm	<i>Ulmus minor</i>	Exotic	--
Garry oak	<i>Quercus garryana</i> var. <i>garryana</i>	Yellow	--
Himalayan blackberry	<i>Rubus armeniacus</i>	Invasive ; Exotic	--
Oceanspray	<i>Holodiscus discolor</i> var. <i>discolor</i>	Yellow	--
Oxeye daisy	<i>Leucanthemum vulgare</i>	Invasive ; Exotic	--
Pacific crab apple	<i>Malus fusca</i>	Yellow	--
Perennial sow-thistle	<i>Sonchus arvensis</i>	Exotic	--
Pink honeysuckle	<i>Lonicera hispidula</i>	Yellow	--
Red alder	<i>Alnus rubra</i>	Yellow	--
Salal	<i>Gaultheria shallon</i>	Yellow	--
Scotch broom	<i>Cytisus scoparius</i>	Invasive ; Exotic	--
Scouler's willow	<i>Salix scouleriana</i>	Yellow	--
Slough sedge	<i>Carex obnupta</i>	Yellow	--
Spurge laurel	<i>Daphne laureola</i>	Invasive ; Exotic	--
Trailing blackberry	<i>Rubus ursinus</i>	Yellow	--
Tufted hairgrass	<i>Deschampsia cespitosa</i>	Yellow	--
Western redcedar	<i>Thuja plicata</i>	Yellow	--
Willow dock	<i>Rumex transitorius</i>	Yellow	--

¹ BC CDC 2023a² Government of Canada 2023a

4.4 WILDLIFE

The trees on the Site and within surrounding areas provide nesting and roosting habitat for birds, including migratory songbirds, year-round resident species, raptors, and owls. Understory shrubs, although lacking in density overall, may provide nesting habitat for birds and small mammals. One bald eagle nest is mapped by the Wildlife Stewardship Atlas (WiTS) approximately 400-500 m northwest of the Site (Nest ID BAEA-101-433), however, there are no trees shown at this mapped location based on available aerial imagery. No nests were observed during the site assessment.

South-facing slopes may provide suitable habitat for reptiles and forested areas are likely frequented by both large and small mammals. The marine environment is also anticipated to support many species (e.g., river otter, plainfin midshipman, shorebirds, waterfowl, marine mammals, etc.) given the presence of eel grass beds and surf smelt and Pacific sandlance spawning habitat that are mapped in proximity to the proposed project area (MapIT 2023). Belted kingfisher nesting burrows were observed in several locations along the proposed project area (Photo 4). The species listed in Table 3 were observed on or near the Site during the assessment.

Table 3. Wildlife Species observed on site during the field visit on May 30, 2023.

Common Name	Scientific Name	BC Provincial Status ¹	SARA Schedule 1 Status ²
American robin	<i>Turdus migratorius</i>	Yellow	--
Bald eagle	<i>Haliaeetus leucocephalus</i>	Yellow	--
Brown creeper	<i>Certhia americana</i>	Yellow	--
Chestnut-backed chickadee	<i>Poecile rufescens</i>	Yellow	--
Dark-eyed junco	<i>Junco hyemalis</i>	Yellow	--
Orange-crowned warbler	<i>Vermivora celata</i>	Yellow	--
Red breasted nuthatch	<i>Sitta canadensis</i>	Yellow	--
Spotted towhee	<i>Pipilo maculatus</i>	Yellow	--

¹ BC CDC 2023a

² Government of Canada 2023a

4.5 MARINE ENVIRONMENT

The shoreline type within the proposed project area is classified as low rock/boulder (Islands Trust n.d.). As per Map 11 of the Salt Spring Island OCP, a portion of the shoreline near 431 and 434 Baker Road is classified as an 'Environmentally Sensitive Shoreline Area' (Figure 3). Suitable forage fish spawning habitat is mapped in this area for surf smelt and Pacific sand lance. These species are an important food source for marine predators. Other notable marine environmental features include the presence of mapped eelgrass beds (flat, continuous) and patches just offshore in proximity to the Site that provide habitat for herring and forage fish (Map 13b, Galiano Conservancy 2014).





Capital Regional District

Sensitive Shoreline Area

- Sensitive Shoreline Area
- Property Boundary

Forage Fish Spawning Habitat

- Surf Smelt
- Surf Smelt/Pacific Sandlance

Eelgrass Meadow (2022)

- Dense
- Moderate
- Undetermined



0 100 200 400 600 Meters
Project: 235 Quarry Road, 239 Quarry Road, 431 Baker Road & 434 Baker Road
Sources: Capital Regional District

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Corvidae Project No.
COR-2023-050

Rev. #	Date
0	October 19, 2023
1	October 23, 2023

Figure 3

4.6 SPECIES AT RISK

A query of the BC CDC iMap tool yielded occurrences of 5 species and 5 ecological communities at risk within a two-kilometer radius of the property, including one (1) masked occurrence (BC CDC 2023b). Species are listed in Table 3 and the location of occurrences in relation to the property is provided in Figure 4.

One ecosystem at risk overlaps the Site boundary: the Garry oak / California brome (*Quercus garryana* / *Bromus carinatus*) ecological community (red-listed). This occurrence is based on Terrestrial Ecosystem Mapping (TEM) and has not been confirmed on the ground (Province of BC 2023). This ecological community was not detected during the site assessment. Species observed near the shoreline within the Site most closely characterize the Douglas-fir / arbutus ecological community (coniferous woodland habitat) which is also red-listed but is not mapped in this area by the CDC. This community has been impacted through disturbance associated with residential development along the shoreline.

No other species or ecosystems listed in Table 4 were detected on the Site during the assessment. Suitable habitat was not identified on the Site for the species listed in Table 4.

Table 4. Species at risk that may occur in the vicinity of the Site.

Common Name	Scientific Name	BC Provincial Status ¹	SARA Schedule 1 Status ²
Species			
Threaded vertigo	<i>Vertigo rowellii</i>	Blue	Special Concern
Painted Turtle - Pacific Coast Population	<i>Chrysemys picta</i> pop. 1	Red	Threatened
Macrae's clover	<i>Trifolium dichotomum</i>	Red	n/a
Leafless wintergreen	<i>Pyrola aphylla</i>	Blue	n/a
Western screech-owl, <i>kennicottii</i> subspecies	<i>Megascops kennicottii kennicottii</i>	Blue	Threatened
Ecological Community			
Garry oak / oceanspray	<i>Quercus garryana</i> / <i>Holodiscus discolor</i>	Red	n/a
Garry oak / California brome	<i>Quercus garryana</i> / <i>Bromus carinatus</i>	Red	n/a
Grand fir / dull Oregon-grape	<i>Abies grandis</i> / <i>Mahonia nervosa</i>	Red	n/a
Douglas-fir / dull Oregon-grape	<i>Pseudotsuga menziesii</i> / <i>Mahonia nervosa</i>	Red	n/a
Trembling aspen / Pacific crab apple / slough sedge	<i>Populus tremuloides</i> / <i>Malus fusca</i> / <i>Carex obnupta</i>	Red	n/a

¹ BC CDC 2023a

² Government of Canada 2023a



A query of the Fisheries and Oceans Canada Species at Risk Distribution Map (Government of Canada 2023b) yielded the following marine species at risk that have the potential to occur in proximity to the project:

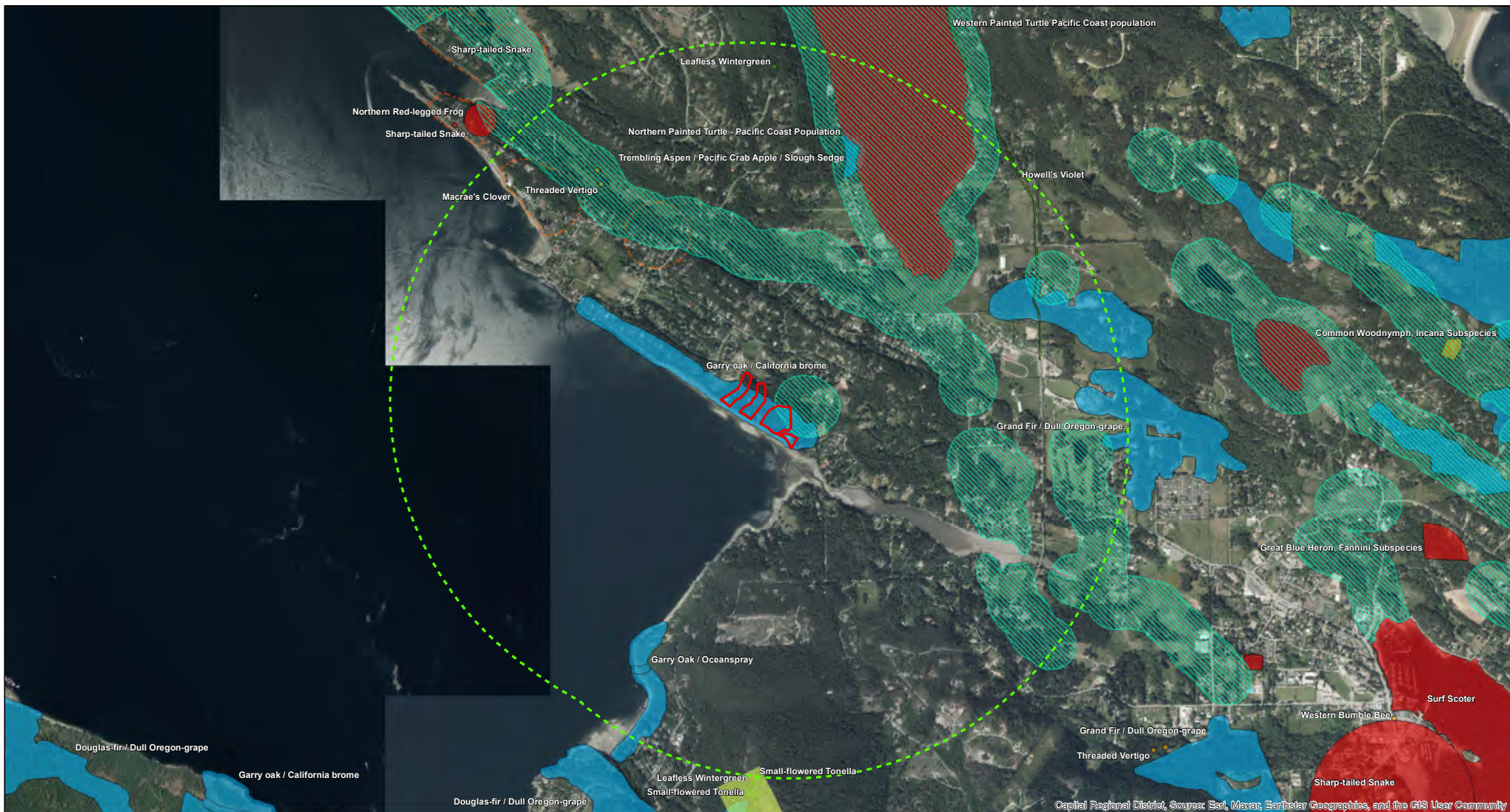
Table 5. Aquatic species at risk that may occur in the vicinity of the Site.

Common Name	Scientific Name	SARA Schedule 1 Status ¹
Steller Sea Lion	<i>Eumetopias jubatus</i>	Special Concern
Killer Whale (Northeast Pacific southern resident population)	<i>Orcinus orca</i>	Endangered
Killer Whale (Northeast Pacific transient population)	<i>Orcinus orca</i>	Threatened
Humpback Whale	<i>Megaptera novaeangliae</i>	Special Concern
Harbour Porpoise	<i>Phocoena phocoena</i>	Special Concern
Grey Whale (Eastern North Pacific population)	<i>Eschrichtius robustus</i>	Special Concern
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	Endangered
Northern Abalone	<i>Haliotis kamtschatkana</i>	Endangered
Yelloweye Rockfish	<i>Sebastes ruberrimus</i>	Threatened
Tope	<i>Galeorhinus galeus</i>	Special Concern

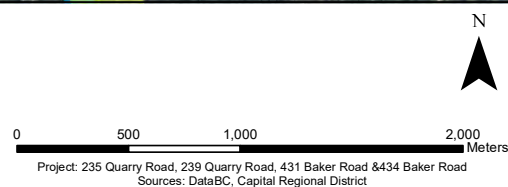
¹ Government of Canada 2023a

CRITICAL HABITAT

A mapped western painted turtle critical habitat polygon overlaps the northeastern corner of 434 Quarry Road (Province of BC 2023b; Figure 4). Critical habitat mapping is based on known occurrences and potential occurrences of suitable aquatic habitat features. Critical habitat may include lakes, ponds, marshes, river channels, roadside or drainage ditches, sluggish streams, and sloughs, and up to 150m of terrestrial habitat surrounding the aquatic feature, as most Western painted turtles in B.C. are typically found within 150m from water (Environment and Climate Change Canada 2018). The critical habitat polygon is associated with an unnamed lake that is located upslope of the project area. The project area includes only the immediate shoreline area which is not considered suitable habitat for western painted turtle.



SAR and critical habitat within 2 km of the site



CORVIDAE ENVIRONMENTAL CONSULTING INC	Rev. #	Date
	0	October 19, 2023
Corvidae Project No. COR-2023-050		Figure 4

5 POTENTIAL ENVIRONMENTAL IMPACTS AND RECOMMENDED ENVIRONMENTAL PROTECTION MEASURES

A list of environmental considerations is provided below based on current project design. This list may be updated in future should the design plans change.

- Impacts on sensitive terrestrial ecosystem areas, such as upland woodland habitat.
- Impacts on sensitive marine features, such as mapped suitable forage fish spawning habitat.
- Impacts on existing shoreline sediment delivery systems.
- Impacts on benthic organisms.
- Impacts that could compromise archaeological, First Nations cultural, historical, heritage sites or significant or outstanding landscape features.
- Spread of invasive plant species.
- Changes in wildlife habitat availability and wildlife mortality risk.
- Sediment movement in the project area.

Preliminary mitigation measures for the proposed beach nourishment works includes the following:

- Construction will be completed during periods of low tide (work in the dry).
- Ensure that works are overseen by an Environmental Monitor (EM)
- Enhancement of backshore vegetation through planting of native species, particularly overhanging species such as Oceanspray. This is included in the detailed design plan with specific plant species, locations, spacing, methods of planting and maintenance.
- Apply suitable substrate for forage fish spawning in the upper reaches of the beach profile where feasible.
- Match borrowed substrate with native sediments within the project area (mimic natural conditions).
- Maintain the current natural beach slope to the extent possible.
- Execute beach nourishment activities when birds or other mobile organisms are the least active.
- Avoid mapped suitable spawning forage fish habitat and ensure that the timing of project works does not interfere with forage fish spawning.
- Install belted kingfisher nest boxes.
- Remove invasive species along the backshore and re-plant with native species.



6 REFERENCES

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APPENDIX A – SITE PHOTOGRAPHS

Photo 1. Close-up of foreshore ground, looking southeast. May 30, 2023.



Photo 2. West view of the foreshore environment. May 30, 2023



Photo 3. Invasive species infestation near 431 Quarry Road, looking north. May 30, 2023.



Photo 4. Northeast view of belted kingfisher nesting burrows. May 30, 2023.



Photo 5. North view of upland forested habitat. May 30, 2023.



Photo 6. View of cliff/shoreline bank, looking west. May 30, 2023.



Photo 7. Southwest view of backshore environment at 235 Quarry Road. May 30, 2023.



Photo 8. North view of riprap placement at CRD beach access near 431 Baker Road. May 30, 2023.





REQUEST FOR DECISION

To: Local Trust Committees **For the Meeting of:** July 10, 2025
From: David Marlor, Director,
Legislative and Information
Services **Date Prepared:** June 23, 2025
SUBJECT: Trust Council Bylaw No. 197 - Local Trust Committee Meeting Procedures
Bylaw

RECOMMENDATION:

1. That the Salt Spring Island Local Trust Committee give Bylaw 547, cited as “Salt Spring Island Local Trust Committee Meeting Procedures Repeal Bylaw No. 547, 2025”, First Reading.
2. That the Salt Spring Island Local Trust Committee give Bylaw 547, cited as “Salt Spring Island Local Trust Committee Meeting Procedures Repeal Bylaw No. 547, 2025”, Second Reading.
3. That the Salt Spring Island Local Trust Committee give Bylaw 547, cited as “Salt Spring Island Local Trust Committee Meeting Procedures Repeal Bylaw No. 547, 2025”, Third Reading.
4. That the Salt Spring Island Local Trust Committee forward Bylaw 547, cited as “Salt Spring Island Local Trust Committee Meeting Procedures Repeal Bylaw No. 547, 2025” to the Islands Trust Executive Committee for consideration of approval.

DIRECTOR COMMENTS:

1 PURPOSE:

To rescind the Salt Spring Local Trust Committee Meeting Procedures Bylaw No. 529.

2 BACKGROUND:

At its regular meeting in June 2025, Trust Council adopted the Local Trust Committees' Meeting Procedures Bylaw by a 2/3 majority vote. This bylaw is authorized under s.11 of the *Islands Trust Act*

Staff based the draft LTC meeting procedures bylaw on the local trust committee meeting procedures model bylaw that Trust Council adopted in December 5, 2003 and updated in early 2020s, and which was used by local trust committees to develop their own meeting procedures bylaws.

The Trust Council bylaw 197 'LTC Meeting Procedures' does not add anything new beyond what local trust committees were recommended to have in their bylaws under Trust Council's previously adopted model meeting procedures bylaw, with the exception of:

- adding the release of an agenda outline two-days before the agenda deadline as indicated in the Trust Council resolution;
- changing the period for notification of meetings from calendar year to fiscal year (April 1 to March 31) to align with proposed changes to Trust Council's meeting procedures bylaw;
- adding an allowance for the minimum of two required annual meetings of the Executive Committee Acting as a local Trust Committee to be in-person or electronically; and
- making other minor changes to address wording amendments and clarity.

Gabriola, Galiano, Gambier, Mayne, North Pender, Saturna, South Pender local trust committees do not currently have procedures regarding "delegations", "order and decorum", "Invited Presentations", and "public participation" in their bylaws (sections 23 to 45 in the draft Trust Council Local Trust Committees Meeting Procedure Bylaw).

The Trust Council bylaw 197 has the same meeting procedure requirements for all 12 local trust areas and the Executive Committee Acting as a Local Trust Committee. This will streamline administration of meetings and reduce costs and resources.

Most local trust committee bylaws contain a clause authorizing the LTC Chair as signatory to documents on behalf of the local trust committee. As this is not a meeting procedure it is omitted from the Trust Council bylaw 197 for local trust committee meeting procedures. Local trust committees authorize Chair signatory through other means, such as a standing resolution or policy of the local trust committee.

Under s.11 of the *Islands Trust Act*, a Trust Council meeting procedures bylaw for local trust committees would over-ride any local trust committee meeting procedures bylaws in the event of a conflict. As Trust Council's Local Trust Committee Meeting Procedure Bylaw contains all the procedures that are in the local trust committee's meeting procedure bylaws, the local trust committee meeting procedures bylaws are redundant. To avoid confusion, Staff recommend that the local trust committee rescind their meeting procedure bylaws.

3 IMPLICATIONS OF RECOMMENDATION

ORGANIZATIONAL:

Rescinding the local trust committee meeting procedure bylaws will avoid confusion, as the Trust Council bylaw prevails, and there are no additional procedures in the local trust committee bylaws.

FINANCIAL:

There is no direct financial implication.

POLICY:

There are no policy implications

IMPLEMENTATION/COMMUNICATIONS:

Islands Trust website has been updated to link the Trust Council Local Trust Committee Meeting Procedures Bylaw to each local trust committee's list of administrative bylaws.

FIRST NATIONS RELATIONS:

There are no implications for First Nations relations.

OTHER:

There are no other implications.

4 RELEVANT POLICY(S):

- [Islands Trust Act, Section 11](#)
- [Policy 2.1.7 Trust-wide Administrative Procedures \(Section 11\)](#)
- [Trust Council Bylaw No. 197, 2024 Local Trust Committees' Meeting Procedures Bylaw](#)
- [SALT SPRING ISLAND LOCAL TRUST COMMITTEE BYLAW NO. 529, 2021](#)

5 ATTACHMENT(S):

- Draft Bylaw 547 "Salt Spring Island Local Trust Committee Meeting Procedures Repeal Bylaw No. 547, 2025"

RESPONSE OPTIONS

Recommendation:

1. That the Salt Spring Island Local Trust Committee give Bylaw 547, cited as "Salt Spring Island Local Trust Committee Meeting Procedures Repeal Bylaw No. 547, 2025", First Reading.
2. That the Salt Spring Island Local Trust Committee give Bylaw 547, cited as "Salt Spring Island Local Trust Committee Meeting Procedures Repeal Bylaw No. 547, 2025", Second Reading.
3. That the Salt Spring Island Local Trust Committee give Bylaw 547, cited as "Salt Spring Island Local Trust Committee Meeting Procedures Repeal Bylaw No. 547, 2025", Third Reading.
4. That the Salt Spring Island Local Trust Committee forward Bylaw 547, cited as "Salt Spring Island Local Trust Committee Meeting Procedures Repeal Bylaw No. 547, 2025" to the Islands Trust Executive Committee for consideration of approval.

Alternative:

As requested by the Salt Spring Local Trust Committee

Prepared By: David Marlor, Director, Legislative and Information Services

Reviewed By/Date: Chris Hutton, Salt Spring Regional Planning Manager / July 2, 2025

PROPOSED

SALT SPRING ISLAND LOCAL TRUST COMMITTEE MEETING PROCEDURES REPEAL BYLAW BYLAW NO. 547

A Bylaw to repeal the "Salt Spring Island Local Trust Committee Meeting Procedure Bylaw No. 529, 2021".

WHEREAS Trust Council by a 2/3 vote of the members present adopted the Local Trust Committee Meeting Procedures Bylaw No. 197 at its regular meeting in June 2025;

AND WHEREAS, under s.11 of the Islands Trust Act, a Trust Council meeting procedures bylaw for local trust committees would over-ride any local trust committee meeting procedures bylaws in the event of a conflict; as Trust Council's Local Trust Committee Meeting Procedure Bylaw contains all the procedures that are in the local trust committee's meeting procedure bylaws, the local trust committee meeting procedures bylaws are redundant,

NOW THEREFORE, the Salt Spring Island Local Trust Committee in open meeting assembled, enacts as follows:

1. This bylaw may be cited as "Salt Spring Island Local Trust Committee Meeting Procedures Repeal Bylaw No. 547, 2025".
2. "Salt Spring Island Local Trust Committee Meeting Procedure Bylaw No. 529, 2021", is hereby repealed.

READ A FIRST TIME THIS _____ DAY OF _____, 202_

READ A SECOND TIME THIS _____ DAY OF _____, 202_

READ A THIRD TIME THIS _____ DAY OF _____, 202_

APPROVED BY THE EXECUTIVE COMMITTEE OF THE ISLANDS TRUST THIS _____ DAY OF _____, 202_

RECONSIDERED AND FINALLY ADOPTED THIS _____ DAY OF _____, 202_

Chairperson

Secretary



REQUEST FOR DECISION

To: Local Trust Committees

For the Meeting of: July 10, 2025

From: David Marlor, Director,
Legislative and
Information Services

Date Prepared: June 23, 2025

SUBJECT: Public Notification Bylaw

RECOMMENDATION:

1. That the Salt Spring Island Local Trust Committee give Bylaw 548, cited as “Salt Spring Island Local Trust Committee Public Notification Bylaw No. 548, 2025”, First Reading.
2. That the Salt Spring Island Local Trust Committee give Bylaw 548, cited as “Salt Spring Island Local Trust Committee Public Notification Bylaw No. 548, 2025”, Second Reading.
3. That the Salt Spring Island Local Trust Committee give Bylaw 548, cited as “Salt Spring Island Local Trust Committee Public Notification Bylaw No. 548, 2025”, Third Reading.
4. That the Salt Spring Island Local Trust Committee forward Bylaw 548, cited as “Salt Spring Island Local Trust Committee Public Notification Bylaw No. 548, 2025” to the Islands Trust Executive Committee for consideration of approval.

DIRECTOR COMMENTS:

The recommendations are consistent with the model public notice bylaw policy adopted by Trust Council in June 2025.

1 PURPOSE:

The purpose of this Request for Decision is to provide the local trust committees with a draft bylaw for Public Notification that is based on the model approved by Trust Council.

2 BACKGROUND:

The Community Charter establishes the requirements for publishing public notice where public notices are required by the *Local Government Act*. The Community Charter includes a default requirement, and an option to adopt an alternative means by bylaw.

The default public notification is by publication in two editions of a newspaper once each week for two consecutive weeks, unless another provision for a specific type of notice states otherwise. The newspaper has to circulate local area.

Section 94.2 of the *Community Charter* gives local governments, including local trust committees, the authority to adopt public notice bylaws. If a local trust committee adopts a

Public Notice Bylaw, the local trust committee is required to publish notices by all the methods specified in that bylaw. Local trust committees that do not adopt a Public Notice Bylaw are required to continue to follow the default publication rules under Section 94.1 of the *Community Charter*.

When adopting a Public Notice Bylaw, the local trust committees are required to consider the principles of effective public notice (reliable, suitable, and accessible) described by the [Public Notice Regulation](#).

Principles of Effective Public Notice

The Public Notice Regulation establishes the principles that must be considered before a public notice bylaw is adopted; these are:

- Reliable – the publication methods are dependable and trustworthy;
- Suitable – the publication methods work for the purpose for which the public notice is intended; and
- Accessible – the publication methods are easy to access and have broad reach.

In considering the adoption of a Public Notice Bylaw, local trust committees must consider and record, either by a resolution recorded in the minutes, or by preamble whereas clauses in the bylaw, that these principles have been considered.

Considering the three principles (reliable, suitable and accessible) possible methods to publish public notices that are available to local trust committees include:

- Online or print newspaper;
- Islands Trust website;
- Community website or newsletter;
- Islands Trust social media page, such as Facebook; and
- Direct email or mail out.

Each of the above meet the principles set out in the Public Notice Regulation. On-line print newspaper still has the problem of being published infrequently, or not circulated through the entire local trust area. Use of a community website or newsletter is outside the control of Islands Trust and each could be shut-down or modified without Islands Trust input; this could compromise the accessibility and reliability principles. Direct mail or a mail-out would reach all owners and residents; however, it could be expensive and time consuming to undertake.

The two best options with the lowest costs and that meet the principles outlined in the Public Notice Regulation are publishing on the Islands Trust website and publishing on an Islands Trust social media page. These are recommended, however, Trust Council recognizes that there may be other conditions on the islands that may warrant a different method.

At its September 2025 meeting, Trust Council adopted Policy 4.1.16 Model Public Notice Bylaw. This contains the format for such a bylaw and recommends the use of the Islands Trust website and a social media account to post the notices. As these are recommendations, and each local trust committee must consider the reliability, suitability and accessibility of the form of notice for their islands, variation on the recommendation may be considered.

3 IMPLICATIONS OF RECOMMENDATION

ORGANIZATIONAL:

In addition to the default requirement of newspaper advertising, local trust committees are already posting notices on our website and email notification service. Adoption by local trust committees of a bylaw similar to the model would simplify our administrative processes and reduce costs.

FINANCIAL:

Adoption by local trust committees of a Public Notice Bylaw similar to the model will result in a reduction in costs generally as it will remove the need to advertise in print newspapers.

POLICY:

There are no policy implications

IMPLEMENTATION/COMMUNICATIONS:

Staff post the new bylaw on the Islands Trust website, and staff would be made aware of the new public notification process.

FIRST NATIONS RELATIONS:

There are no First Nations relations implications.

OTHER:

There are no other implications.

4 RELEVANT POLICY(S):

- [Section 94 and Section 94.2 of the Community Charter](#)
- [Community Charter Public Notice Regulation](#)
- Trust Council Policy 4.1.16 Model Public Notice Bylaw

5 ATTACHMENT(S):

- Draft Bylaw 548 "Salt Spring Island Local Trust Committee Public Notification Bylaw No. 548, 2025".

RESPONSE OPTIONS**Recommendation:**

1. That the Salt Spring Island Local Trust Committee give Bylaw 548, cited as "Salt Spring Island Local Trust Committee Public Notification Bylaw No. 548, 2025", First Reading.
2. That the Salt Spring Island Local Trust Committee give Bylaw 548, cited as "Salt Spring Island Local Trust Committee Public Notification Bylaw No. 548, 2025", Second Reading.
3. That the Salt Spring Island Local Trust Committee give Bylaw 548, cited as "Salt Spring Island Local Trust Committee Public Notification Bylaw No. 548, 2025", Third Reading.
4. That the Salt Spring Island Local Trust Committee forward Bylaw 548, cited as "Salt Spring Island Local Trust Committee Public Notification Bylaw No. 548, 2025" to the Islands Trust Executive Committee for consideration of approval.

Alternative:

As directed by the Salt Spring Island Local Trust Committee.

Prepared By: David Marlor, Director, Legislative and Information Services

Reviewed By/Date: Chris Hutton, Salt Spring Regional Planning Manager / July 2, 2025

PROPOSED

SALT SPRING ISLAND LOCAL TRUST COMMITTEE PUBLIC NOTIFICATION BYLAW BYLAW NO. 548

A Bylaw to provide for an alternative means of publishing a public notice.

WHEREAS pursuant to section 94.2 of the Community Charter, the Salt Spring Island Local Trust Committee may adopt a Bylaw to provide an alternative means of publishing a public notice;

AND WHEREAS, pursuant to section 94.2(3) of the Community Charter and section 2 of the Public Notice Regulation, B.C. Reg. 52/2022, the Salt Spring Island Local Trust Committee considers the means of publication set by this Bylaw to be reliable, suitable for providing notices, and accessible;

NOW THEREFORE, the Salt Spring Island Local Trust Committee in open meeting assembled, enacts as follows:

1. This bylaw may be cited as "Salt Spring Island Local Trust Committee Public Notification Bylaw No. 548, 2025".
2. The means of publication for public notice requirements under the Community Charter, Local Government Act, or any other enactment may be given by the following methods:
 - (i) electronically by posting the notice on the Islands Trust website; and
 - (ii) electronically by posting the notice on Islands Trust's social media platform.

READ A FIRST TIME THIS _____ DAY OF _____, 202_

READ A SECOND TIME THIS _____ DAY OF _____, 202_

READ A THIRD TIME THIS _____ DAY OF _____, 202_

APPROVED BY THE EXECUTIVE COMMITTEE OF THE ISLANDS TRUST THIS _____ DAY OF _____, 202_

RECONSIDERED AND FINALLY ADOPTED THIS _____ DAY OF _____, 202_

Chairperson

Secretary

PROPOSED



SALT SPRING ISLAND LOCAL TRUST COMMITTEE POLICY & STANDING RESOLUTIONS LIST

Date	Resolution Number	Topic	Resolution
2010-02-04	SSI-11-10	Bylaw Enforcement Reports	It was MOVED and SECONDED , that the Salt Spring Island Local Trust Committee directs staff to provide quarterly in-camera and public reports on on-going and current bylaw enforcement investigations and actions in the Salt Spring Local Trust Area. CARRIED
2013-01-10	SSI-09-13	North Salt Spring Waterworks District Reporting	It was MOVED and SECONDED , that the Salt Spring Island Local Trust Committee request the North Salt Spring Waterworks District to report back to the Local Trust Committee every two years from the date of adoption of Proposed Bylaw 461 on: a) Changes in water demand by the North Salt Spring Waterworks District customers with new secondary suites within the pilot area; b) total withdrawal from its system in relation to its licensed capacity; c) impacts on the Maxwell Lake, St. Mary Lake, and the district's water supply in general that can be attributed to the introduction of secondary suites within the pilot area. CARRIED *Bylaw 461 was adopted May 2, 2013

SALT SPRING ISLAND LOCAL TRUST COMMITTEE POLICY & STANDING RESOLUTIONS LIST

Date	Resolution Number	Topic	Resolution
2016-06-02	SS-2016-114	Grantville Neighbourhood lawful non-conforming sewage disposal field repair or replacement	It was MOVED and SECONDED, that the Salt Spring Island Local Trust Committee adopt “Standing Resolution 2” as specified in Appendix 2 of the staff report dated May 25, 2016. (shown below): That the Salt Spring Island Local Trust Committee direct staff to administer and enforce Bylaw 484 according to the following policies: 1. Where a sewage disposal field or septage pit is awfully non-conforming with respect to Bylaw 484, and pursuant to Local Government Act Section 529, the Salt Spring Island Local Trust Committee considers that the following actions do not constitute maintenance, alteration, or extension, and therefore require a development variance permit application to the Salt Spring Island Local Trust Committee: a) Removal and replacement of the dispersal system in its entirety. 2. Where a sewage disposal field or septage pit is lawfully non-conforming with respect to Bylaw 484, and where a health hazard exists as defined under the B.C. Public Health Act, an Authorized Person may carry out immediate, temporary repairs of the system that result in a further contravention to Bylaw 484 than that existing at the time the repair or alteration was started to prevent or contain the hazard. Permanent repairs or alterations that result in a further contravention of Bylaw 484 than that existing at the time the repair or alteration was started, or 1(a) above, should be supervised by a Professional and will require a development variance permit application to the Salt Spring Island Local Trust Committee following resolution of the emergency. 3. “Authorized Person” and “Professional” have the same meaning as in the Sewerage System Regulation. <u>CARRIED</u>
2017-03-02	SS-2017-16	Quarterly Application Summary Staff Reports	It was MOVED and SECONDED, that the Salt Spring Island Local Trust Committee direct staff to provide a quarterly summary of application tracking. <u>CARRIED</u>

SALT SPRING ISLAND LOCAL TRUST COMMITTEE POLICY & STANDING RESOLUTIONS LIST

Date	Resolution Number	Topic	Resolution
2018-08-16	SS-2018-177	Cannabis Regulation	It was MOVED and SECONDED, that the Salt Spring 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. • 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; ○ How public comments may be submitted to the Local Trust Committee. <u>CARRIED</u>
2018-12-06	SS-2018-278	Cannabis – Processing of Notice to Local Authorities	It was MOVED and SECONDED, That the Salt Spring Island Local Trust Committee adopt the following standing resolution: that the Salt Spring Island Local Trust Committee request that Notices of Intention to apply for a Federal Cannabis License be included in the Local Trust Committee Regular Meeting agenda package. <u>CARRIED</u>



SALT SPRING ISLAND LOCAL TRUST COMMITTEE POLICY & STANDING RESOLUTIONS LIST

Date	Resolution Number	Topic	Resolution
2019-04-30	SS-2019-88	Families as Stakeholders	It was MOVED and SECONDED, That the Salt Spring Island Local Committee direct staff to include families as stakeholders in Project Charters and to propose family oriented engagement techniques, or to explain why such inclusion is not appropriate. <u>CARRIED</u>

SALT SPRING ISLAND LOCAL TRUST COMMITTEE POLICY & STANDING RESOLUTIONS LIST

Date	Resolution Number	Topic	Resolution
2019-11-26	SS-2019-253	Reconciliation	It was MOVED and SECONDED, that the Salt Spring Island Local Trust Committee adopt the following standing resolution with respect to First Nations in the Local Trust Area: 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 (TRC) Calls to Action, United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), 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; 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. <u>CARRIED</u>



SALT SPRING ISLAND LOCAL TRUST COMMITTEE POLICY & STANDING RESOLUTIONS LIST

Date	Resolution Number	Topic	Resolution
2019-12-17	SS-2019-275	Referral of Items to the Agricultural Advisory Planning Commission	It was MOVED and SECONDED, that the Salt Spring Island Local Trust Committee refer Agricultural Land Commission applications directly to the Agricultural Advisory Planning Commission, prior to consideration by the Salt Spring Island Local Trust Committee when: a) Applications demonstrate either that local farming or the greater community would benefit and conditions of Official Community Plan policy B.6.2.2.16 apply, or b) Applications are for public recreation use and are consistent with the Official Community Plan. <u>CARRIED</u>
2020-04-28	SS-2020-045	Policy Options for Bylaw Enforcement Compliance on Unlawful Uses	It was MOVED and SECONDED, that the Salt Spring Island Local Trust Committee adopt the following policy on unlawful land uses and planning applications: a) Where an application is received and a use is continuing in contravention of a land use bylaw, staff are directed to request that the applicant cease the use prior to processing the application, and that staff are directed to continue with enforcement until the use is ceased. b) The applicant may request that the Local Trust Committee proceed with consideration of the application while the use is continuing; and, where the Local Trust Committee considers there is a community need to process the application while the prohibited use is continuing, the Local Trust Committee may direct that bylaw enforcement actions, including the issuing of notices, temporarily cease. c) Where the Local Trust Committee does not consider that there is a community need, or the applicant has not made such a request of the Local Trust Committee; bylaw enforcement actions, including the issuing of notices, will continue. d) In deciding whether to grant land use approval for a use that was commenced in contravention of a land use bylaw, the Local Trust Committee may consider whether the applicant has suspended the prohibited land use pending a decision on the application. <u>CARRIED</u>

SALT SPRING ISLAND LOCAL TRUST COMMITTEE POLICY & STANDING RESOLUTIONS LIST

Date	Resolution Number	Topic	Resolution
2021-06-29 Amended 2021-11-09 Amended 2022-02-15	SS-2021-109 SS-2021-214 SS-2022-017	Unlawful Dwellings	It was MOVED and SECONDED, that the Salt Spring Island Local Trust Committee endorse the Housing Action Program Task Force's recommendation to amend standing resolution SS-2021-109 to state that enforcement activities will be deferred for all existing unlawful dwellings being used for residential purposes until there are safe, secure appropriate housing options that are affordable for all demographics and household types in perpetuity, except in the following circumstances: a) there are concerns regarding health and safety; b) there are concerns that sewage is not being disposed of in an approved septic or sewage disposal system; c) there are concerns that septic or sewage disposal systems are being used in excess of capacity or ability as a result of unlawful dwellings; d) there are concerns of possible contamination of wells or other drinking water sources; e) unlawful dwellings are in environmentally sensitive areas; f) there are non-permitted campgrounds; and, g) that the Salt Spring Island Local Trust Committee may give direction to resume enforcement activities on any property that poses risk to the health and safety of the neighbouring residents and the residents on the property in question. <u>CARRIED</u>
2021-06-29	SS-2021-111	Bylaw Enforcement Policy on Portable Sawmills	It was MOVED and SECONDED, that the Salt Spring Island Local Trust Committee adopt the following enforcement policy: Enforcement on portable sawmills will be deferred while the Local Trust Committee considers amendments to the Land Use Bylaw. <u>CARRIED</u>
2021-11-09	SS-2021-213	Residential Use in Commercial Accommodations	It was MOVED and SECONDED, That the Salt Spring Island Local Trust Committee endorse the Housing Action Program Task Force's recommendation to defer enforcement of residential use in commercial accommodations, such as cabins, hotels, guest houses, and motels that provide long-term (more than 30 days) residency in order to offer an interim solution to the housing needs on Salt Spring Island. <u>CARRIED</u>

SALT SPRING ISLAND LOCAL TRUST COMMITTEE POLICY & STANDING RESOLUTIONS LIST

Date	Resolution Number	Topic	Resolution
2021-12-14	SS-2021-237	First Nations Consultation for Proposed Antenna Systems	It was MOVED and SECONDED, That the Salt Spring Island Local Trust Committee adopt the following standing resolution with respect to First Nations consultation in accordance with the “Strategy for Antenna Systems” in the Local Trust Area: a) The proponent will consult with the Local Trust Area representative during the pre-consultation phase to determine proximity of the proposed antenna system to known archaeological sites and/or areas of archaeological potential and obtain a list of First Nations rights and title holders; b) The proponent is recommended to undertake consultation during the pre-consultation phase with the Islands Trust and a First Nations cultural knowledge holder for the siting of the proposed antenna system as it relates to cultural and sacred sites; c) The proponent will obtain and provide a BC Archaeological Information request response from the BC Archaeology Branch to confirm proximity of the proposed antenna system to known archaeological sites and/or areas of archaeological potential including permit requirements under the Heritage Conservation Act; d) The proponent will obtain and provide an Archeological Impact Assessment for antenna systems proposed to be sited on or within 100 metres of a known archaeological site or cultural/sacred site identified by a First Nations cultural knowledge holder; and e) The proponent will provide written notice – including, if applicable, the Archeological Impact Assessment – sent by regular mail or hand delivered to all First Nations rights and title holders identified during the pre-consultation phase. <u>CARRIED</u>
2024-09-12	SS-2024-099	Travel costs for inter-agency meetings	It was MOVED and SECONDED, That the Salt Spring Island Local Trust Committee approve a standing resolution to fund travel expenses for Trustees to attend joint meetings with the LCC, the CRD and First Nations relationship building meetings that have been approved by the LTC. <u>CARRIED</u>



Salt Spring Local Trust Committee

Open Applications

Report

Print Date: July 2, 2025

Agricultural Land Reserve

Application Number	Applicant Name	Date Received	Address	Purpose
PLALR20250198		5/13/2025	820 MOUNT MAXWELL RD, SALT S	Application for non-farm use or non-adhering residential use in the Agricultural Land Reserve
Planner		Status	Most Recent Completed Activity	
Oluwashogo Garuba		Under Review	Generate Complete Application Letter	

Board of Variance

Application Number	Applicant Name	Date Received	Address	Purpose
PLBOV20250248	STUART A BLACK	6/18/2025	365 ISABELLA POINT RD, SALT SP	Appeal to Board of Variance for Multiple structures in the setback
Planner		Status	Most Recent Completed Activity	
Rob Pingle		Board of Variance	Planning Review	

Salt Spring

Development Permit

Application Number	Applicant Name	Date Received	Address	Purpose
PLDP20250028	Dennis G Miller	1/17/2025	2101 FULFORD-GANGES RD, SALT	Delegated Development Permit Area 7 (Riparian Areas) Subdivision separating ALR lands from non-ALR lands and creating a 2 bare lot strata upon the non-ALR lands, one of the strata lots containing an existing residence (circa 2009).
Planner		Status	Most Recent Completed Activity	
Oluwashogo Garuba		Waiting for Revisions	Verify Final Review Status	

Application Number	Applicant Name	Date Received	Address	Purpose
PLDP20250040	Robert Kelly Beattie	1/23/2025	0 WALKER'S HOOK RD	Delegated Development Permit Area 6 (Slope Stability and Soil Erosion Hazards)
Planner		Status	Most Recent Completed Activity	
Oluwashogo Garuba		Waiting for Revisions	Generate Notice of Revisions	

Salt Spring

Application Number	Applicant Name	Date Received	Address	Purpose
SS-DP-2021.4	Erin Rommel	3/15/2021	270 FURNESS RD, SALT SPRING I	DPA2 - NEW TASTING ROOM, WASHROOM/ACCESSORY BUILDING, CARETAKER'S COTTAGE, 4-PLEX - 270 Furness Road SS-2024-084 It was MOVED and SECONDED That the Salt Spring Island Local Trust Committee approves issuance of Development Permit SS-DP-2021.4 (270 Furness Road) subject to the collection of a landscaping security deposit of \$89,662.50 (150% of pre-tax estimate). CARRIED
Planner		Status	Most Recent Completed Activity	
Chris Buchan		Waiting for Conditions	Record LTC Decision/Update FUAL	

Application Number	Applicant Name	Date Received	Address	Purpose
PLDP20250165	BRADLEY J FOSSE	4/14/2025	265 OLD SCOTT RD, SALT SPRING	Repair/ Reconstruction of Septic Field in DPA - 5
Planner		Status	Most Recent Completed Activity	
Milad Panahifar		Under Review	Generate Complete Application Letter	

Application Number	Applicant Name	Date Received	Address	Purpose
PLDP20240333	Brandon Strickland	12/5/2024	231 ARMAND WAY, SALT SPRING	Delegated Development Permit Area 6 (Slope Stability and Soil Erosion Hazards)
Planner		Status	Most Recent Completed Activity	
Oluwashogo Garuba		Under Review	Generate Complete Application Letter	

Salt Spring

Application Number	Applicant Name	Date Received	Address	Purpose
PLDP20250189	Leigh Large	5/8/2025	378 LOWER GANGES RD, SALT S	A Development Permit Amendment application for development in a form and character DPA (xref SS-DP-2020.2).
Planner		Status	Most Recent Completed Activity	
Milad Panahifar		Under Review	Add Optional Referrals	

Application Number	Applicant Name	Date Received	Address	Purpose
PLDP20240357	Dave McKerrell	12/17/2024	[028-253-396]CP(2)] 126 WEST ISLA	Delegated Development Permit Area 3 (Marine Shorelines) - Dock - Being reviewed by RPM
Planner		Status	Most Recent Completed Activity	
Milad Panahifar		Under Review	Add Optional Referrals	

Application Number	Applicant Name	Date Received	Address	Purpose
SS-DP-2023.7	Holly Kerr	8/22/2023	687 BEAVER POINT RD, SALT SPR	Delegated DPA 7 Driveway Extension - 687 Beaver Point RD, SSI Asked to provide restoration estimation from a landscape professional for the purpose of security deposit. (December 6th 2024)
Planner		Status	Most Recent Completed Activity	
Milad Panahifar		Open	Planning Review	

Salt Spring

Application Number	Applicant Name	Date Received	Address	Purpose
PLDP20250223	Leigh Large	6/2/2025	378 LOWER GANGES RD, SALT S	A Development Permit Amendment application for development in a form and character DPA (xref SS-DP-2020.2).
Planner		Status	Most Recent Completed Activity	
Milad Panahifar		Application Received	Determine Approval Workflow for Development Permit	

Application Number	Applicant Name	Date Received	Address	Purpose
PLDP20250035	Celeste Cavaliere	1/20/2025	126 UPPER GANGES RD, SALT SP	Delegated DP for development of Commercial shed in DPA 3 (Marine Shorelines) (Waiting for Professional Reports)
Planner		Status	Most Recent Completed Activity	
Milad Panahifar		Application Received	Verify Submittal / Fees	

Application Number	Applicant Name	Date Received	Address	Purpose
PLDP20240059	BRADLEY J FOSSE	5/30/2024	434 BAKER RD, SALT SPRING ISL	Delegated Development Permit Area 3 (Marine Shorelines) - Shore Stabilization (Green Shoring)
Planner		Status	Most Recent Completed Activity	
Oluwashogo Garuba		Appeal Period	Assign to Appeal Hearing	

Salt Spring

Application Number	Applicant Name	Date Received	Address	Purpose
PLDP20240057	BRADLEY J FOSSE	5/30/2024	239 QUARRY DR	Delegated Development Permit Area 3 (Marine Shorelines) - Shore Stabilization (Green Shoring)

Planner	Status	Most Recent Completed Activity
Oluwashogo Garuba	Appeal Period	Assign to Appeal Hearing

Application Number	Applicant Name	Date Received	Address	Purpose
PLDP20240056	BRADLEY J FOSSE	5/30/2024	235 QUARRY DR, SALT SPRING IS	Delegated Development Permit Area 3 (Marine Shorelines) - Shore Stabilization (Green Shoring)

Planner	Status	Most Recent Completed Activity
Oluwashogo Garuba	Appeal Period	Assign to Appeal Hearing

Application Number	Applicant Name	Date Received	Address	Purpose
SS-DP-2022.9		9/16/2022	161 FULFORD-GANGES RD	DPA 1, 3 & 4 to permit a cafe with indoor seating

Planner	Status	Most Recent Completed Activity
Oluwashogo Garuba	Administrative Review	Generate Notice of Revisions

Application Number	Applicant Name	Date Received	Address	Purpose
SS-DP-2022.5	Jordan Litke	5/4/2022	536 BEAVER POINT RD, SALT SPR	Delegated Development Permit Area 7 (Riparian Areas) to allow subdivision

Planner	Status	Most Recent Completed Activity
Oluwashogo Garuba	Administrative Review	Generate Staff Report and Draft Permit

Salt Spring

Application Number	Applicant Name	Date Received	Address	Purpose
SS-DP-2022.7	Brent Taylor	8/10/2022	250 COLLINS RD, SALT SPRING IS	Development Permit Area 3 (Marine Shorelines) - Dock Delegated DP Staff report submitted to Director
Planner	Status	Most Recent Completed Activity		
Milad Panahifar	Administrative Review	Generate Staff Report and Draft Permit		

Application Number	Applicant Name	Date Received	Address	Purpose
PLDP20240343	Jonathon Mishrigi	12/9/2024	237 ISABELLA POINT RD	Delegated Development Permit Area 6 (Slope Stability and Soil Erosion Hazards) - Being reviewed by Director
Planner	Status	Most Recent Completed Activity		
Milad Panahifar	Administrative Review	Generate Staff Report and Draft Permit		

Application Number	Applicant Name	Date Received	Address	Purpose
SS-DP-2021.10	Uta Nagel	9/14/2021	770 BEAVER POINT RD, SALT SPR	Delegated DPA 4, 6 & 7 - Carport and Shed - 770 Beaver Point Road We need a geotechnical assessment for DPA 6 – Unstable Slopes and Soil Erosion. As well as an assessment that adheres to the provincial Riparian Areas Protection Act methodology for DPA 7 – Riparian Areas.
Planner	Status	Most Recent Completed Activity		
Milad Panahifar	Administrative Review	Verify Final Review Status		

Salt Spring

Development Variance Permit

Application Number	Applicant Name	Date Received	Address	Purpose
SS-DVP-2024.2	Leigh Large	2/13/2024	127 VALHALLA RD	To construct a retaining wall

Planner	Status	Most Recent Completed Activity
Milad Panahifar	Waiting for Revisions	Generate Notice of Revisions

Application Number	Applicant Name	Date Received	Address	Purpose
SS-DVP-2021.17	Uta Nagel	9/13/2021	770 BEAVER POINT RD, SALT SPR	See related application SS-DP-2021.10

Planner	Status	Most Recent Completed Activity
Milad Panahifar	Waiting for Revisions	Verify Final Review Status

Application Number	Applicant Name	Date Received	Address	Purpose
PLDVDP20250066	Nancy Farran	2/9/2025	171 SCOTT POINT DR, SALT SPRIN	A DP for vegetation removal on DPA 3 is required.

Planner	Status	Most Recent Completed Activity
Milad Panahifar	Under Review	Add Optional Referrals

Salt Spring

Application Number	Applicant Name	Date Received	Address	Purpose
PLDVP20250082	COLIN A CRYSTAL	2/19/2025	198 SALT SPRING WAY, SALT SPR	Application for a variance for setback of the Roof

Planner	Status	Most Recent Completed Activity
Milad Panahifar	Under Review	Add Optional Referrals

Application Number	Applicant Name	Date Received	Address	Purpose
PLDVP20240255	Dennis G Miller	10/4/2024	2101 FULFORD-GANGES RD, SALT	Application for a variance for a subdivision regulation - Storm Water Mgmt Variance

Planner	Status	Most Recent Completed Activity
Milad Panahifar	Under Review	Add Optional Referrals

Application Number	Applicant Name	Date Received	Address	Purpose
SS-DVP-2021.7	Brian Craig	2/26/2021	344 REGINALD HILL RD, SALT SPR	Variance for Gate House and Beach Stairs

Recommended to apply for a Development Permit (DPA 3, DPA 4). Additionally, it was advised to submit an updated survey showing the location of all structures and watercourses, along with the setbacks of these structures from lot lines and watercourses. A setback permit application should also be submitted to the Ministry of Transportation and Infrastructure for any structures located within 4.5 meters of the MOTI right-of-way.

Planner	Status	Most Recent Completed Activity
Milad Panahifar	Open	Planning Review

Salt Spring

Application Number	Applicant Name	Date Received	Address	Purpose
SS-DVP-2023.14	Bryce Chapman	8/14/2023	361 SUNSET DR, SALT SPRING IS	Variance to allow subdivision with on-site water source
Planner		Status	Most Recent Completed Activity	
Chris Hutton		Open	Verify Submittal / Fees	

Salt Spring

Rezoning

Application Number	Applicant Name	Date Received	Address	Purpose
SS-RZ-2021.1	Dale Rivers	1/28/2021	114 SWANSON RD, Unit:1, SALT S	Rezoning from existing R6 to R2 to permit the construction of a 20 unit Strata Development
Planner		Status	Most Recent Completed Activity	
Milad Panahifar		Waiting for Submittals	Planning Review	

Application Number	Applicant Name	Date Received	Address	Purpose
PLRZ20250001	Nancy Mullins	1/1/2025	120 MANSELL RD, SALT SPRING I	Rezoning to address a seasonal cottage that is over 56 Square meters
Planner		Status	Most Recent Completed Activity	
Oluwashogo Garuba		Waiting for Revisions	Generate Notice of Revisions	

Application Number	Applicant Name	Date Received	Address	Purpose
PLRZ20250173	Marius Scurtescu	4/27/2025	360 WILKIE WAY, SALT SPRING IS	Basement space turned into a craft studio, this rezoning application is for the craft studio to be turned into a legal secondary suite. Please see Project Narrative file for details.
Planner		Status	Most Recent Completed Activity	
Alan Cavin		Under Review	Generate Complete Application Letter	

Salt Spring

Application Number	Applicant Name	Date Received	Address	Purpose
PLRZ20250177	Patrick Wheeler	4/28/2025	121 UPPER GANGES RD, SALT SP	CA1(F) Zoning Amendment: Proposed Expansion from 55 to 75 Commercial Units
Planner		Status	Most Recent Completed Activity	
Oluwashogo Garuba		Under Review	Generate Complete Application Letter	

Application Number	Applicant Name	Date Received	Address	Purpose
PLRZ20250220	Janis Gauthier	5/29/2025	154 KINGS LANE, SALT SPRING IS	Rezoning application reflects relatively minor revisions to the existing zoning Bylaw no. 517 which was adopted in February 2020 (Zone Variation – R12(a)). Associated housing agreement changes Bylaw no. 515.
Planner		Status	Most Recent Completed Activity	
Oluwashogo Garuba		Under Review	Generate Complete Application Letter	

Application Number	Applicant Name	Date Received	Address	Purpose
SS-RZ-2023.1	Chris Schmah	9/27/2023	104 ATKINS RD, SALT SPRING ISL	Rezoning to retire Land Use Contract
Planner		Status	Most Recent Completed Activity	
Chris Buchan		Under Review	Add Optional Referrals	

Salt Spring

Application Number	Applicant Name	Date Received	Address	Purpose
SS-RZ-2017.2	Fernando Dos Santo	2/15/2017	221 DRAKE RD	Proposal to permit 30 affordable housing dwelling units and common building

Planner	Status	Most Recent Completed Activity
Chris Buchan	Under Review	Add Optional Referrals

Application Number	Applicant Name	Date Received	Address	Purpose
SS-RZ-2019.1	Nick Williams	2/22/2019	248 UPPER GANGES RD, SALT SP	Proposal to change current zoning from R7 to C6 Variance for Industrial Use

Planner	Status	Most Recent Completed Activity
Oluwashogo Garuba	Under Review	Add Optional Referrals

Application Number	Applicant Name	Date Received	Address	Purpose
SS-RZ-2022.2	Chris Leier	11/29/2022	151 LOWER GANGES RD, Unit:101	To address issues arising from the Temporary Use Permit

Planner	Status	Most Recent Completed Activity
Chris Buchan	Open	Determine Next Steps - PL

Application Number	Applicant Name	Date Received	Address	Purpose
SS-RZ-2017.3	Jamie Colligan	4/5/2017	2188 NORTH END RD, SALT SPRIN	Proposal to Rezone to Rural Zone Variation to Allow Existing Cottage to be Designated as Affordable Housing

Planner	Status	Most Recent Completed Activity
Chris Buchan	Open	Determine Next Steps - PL

Salt Spring

Application Number	Applicant Name	Date Received	Address	Purpose
PLRZ20240145	Jordan Litke	7/23/2024	200 COLLINS RD, SALT SPRING IS	Application to rezone to R(f) variant

Planner	Status	Most Recent Completed Activity
Oluwashogo Garuba	Local Trust Committee	Send to Minister (If OCP Bylaw)

Application Number	Applicant Name	Date Received	Address	Purpose
PLRZ20240021	Kristin Peebles	5/17/2024	355 BLACKBURN RD, SALT SPRIN	Rezoning to retire Land Use Contract

Planner	Status	Most Recent Completed Activity
Oluwashogo Garuba	Local Trust Committee	Create Draft Bylaw(s)

Application Number	Applicant Name	Date Received	Address	Purpose
PLRZ20240188	Daniel Ovington; Sa	8/20/2024	210 KANAKA RD, SALT SPRING IS	Application for rezoning to amend the LUB to permit public works facility on subject property. (SSI CRD Park Maintenance and Bus Storage)

Planner	Status	Most Recent Completed Activity
Oluwashogo Garuba	Local Trust Committee	Create Draft Bylaw(s)

Salt Spring

Application Number	Applicant Name	Date Received	Address	Purpose
SS-RZ-2013.9	Don Elliot	9/6/2013		Proposal to Rezone for CRD Multi-Family Affordable Housing
Planner		Status	Most Recent Completed Activity	
Milad Panahifar		Local Trust Committee	Assign to LTC Meeting	

Application Number	Applicant Name	Date Received	Address	Purpose
SS-RZ-2024.1	Floridor Oprea	1/8/2024	0 VESUVIUS BAY RD	RZ - To amend the OCP and Land Use Bylaws to permit the redevelopment of the existing ferry terminal area and wharf.
Planner		Status	Most Recent Completed Activity	
Chris Buchan		Local Trust Committee	Record LTC Decision/Update FUAL	

Salt Spring

Soil Deposit and Removal Permit

Application Number	Applicant Name	Date Received	Address	Purpose
SS-SDP-2022.3	Kris Plambeck	7/15/2022	131 KNOTT PL	Leveling property for development
Planner		Status	Most Recent Completed Activity	
Oluwashogo Garuba		Waiting for Revisions	Generate Notice of Revisions	

Application Number	Applicant Name	Date Received	Address	Purpose
SS-SDP-2022.2	Neil Kerrigan	6/27/2022	155 ALEXANDER BLVD, SALT SPR	Pond construction
Planner		Status	Most Recent Completed Activity	
Chris Buchan		Open	Planning Review	

Application Number	Applicant Name	Date Received	Address	Purpose
PLSDP20240344	BRADLEY J FOSSE	12/9/2024	116 CYPRESS VIEW RD, SALT SP	A soil permit and DVP have been requested by Islands Trust Compliance and Enforcement, relating to culvert installation works. The report was sent to RPM.
Planner		Status	Most Recent Completed Activity	
Milad Panahifar		Administrative Review	Verify Final Review Status	

Salt Spring

Subdivision

Application Number	Applicant Name	Date Received	Address	Purpose
SS-SUB-2023.5	Padra Ahmadi	11/7/2023	0 TRUSTEES TRAIL; 261 TRUSTEE	Proposed 2 lot boundary adjustment

Planner	Status	Most Recent Completed Activity
Oluwashogo Garuba	Waiting for Conditions	Generate and Send Referral Response Form

Application Number	Applicant Name	Date Received	Address	Purpose
SS-SUB-2024.4	Kerry Michael Akerm	3/28/2024	292 JASPER RD	Proposed 5 Lot Conventional Subdivision

Planner	Status	Most Recent Completed Activity
Oluwashogo Garuba	Waiting for Conditions	Generate and Send Referral Response Form

Application Number	Applicant Name	Date Received	Address	Purpose
PLSUB20250104		3/4/2025	0 MUSGRAVE RD	Application for 3 Lot Subdivision - Waiting for RPM Concurrence.

Planner	Status	Most Recent Completed Activity
Milad Panahifar	Under Review	Add Optional Referrals

Salt Spring

Application Number	Applicant Name	Date Received	Address	Purpose
SS-SUB-2024.3	Polaris Land Survey	3/20/2024	601 RAINBOW RD, SALT SPRING I	Subdivision of property for residential purposes - 2 lot subdivision Planner to confirm if proposed road width will meet from CL requirements for any active transportation infrastructure indicated in OCP in response.
Planner		Status	Most Recent Completed Activity	
Milad Panahifar		Pending	Record and File PLR	

Application Number	Applicant Name	Date Received	Address	Purpose
PLSUB20240317	DANIEL FRASER	11/27/2024	120 TAHOUNEY RD, SALT SPRING	Referral of a subdivision application for 2 lots
Planner		Status	Most Recent Completed Activity	
Oluwashogo Garuba		Administrative Review	Generate and Send Referral Response Form	

Application Number	Applicant Name	Date Received	Address	Purpose
PLSUB20250034	Jordan Litke	1/20/2025	166 BECKY WAY, SALT SPRING IS	Referral of a Boundary Adjustment Subdivision Application RRF was Sent to RPM for review.
Planner		Status	Most Recent Completed Activity	
Milad Panahifar		Administrative Review	Verify Final Review Status	

Salt Spring

Application Number	Applicant Name	Date Received	Address	Purpose
SS-SUB-2022.4	Jordan Litke	11/14/2022	373 WRIGHT RD, SALT SPRING ISL	Proposed 2 lot conventional Subdivision

Planner	Status	Most Recent Completed Activity
Milad Panahifar	Administrative Review	Record and File PLR

Application Number	Applicant Name	Date Received	Address	Purpose
SS-SUB-2023.2	Denis Miller	2/15/2023	2101 FULFORD-GANGES RD, SALT	Proposed 3 Lot Bare Land Strata Updated the applicant for the DPA 7 requirement (Jan 3rd, 2025)

Planner	Status	Most Recent Completed Activity
Milad Panahifar	Administrative Review	Generate and Send Referral Response Form

Application Number	Applicant Name	Date Received	Address	Purpose
SS-SUB-2023.4	Jordan Litke	9/6/2023	0 CHURCHILL RD; 291 LONG HARB	Proposed 4 Lot Conventional Subdivision Waiting for PLR

Planner	Status	Most Recent Completed Activity
Milad Panahifar	Administrative Review	Generate and Send Referral Response Form

Salt Spring

Application Number	Applicant Name	Date Received	Address	Purpose
SS-SUB-2021.3	Sina Shalbaf	3/31/2021	150 MARGOLIN DR, SALT SPRING	2 lot subdivision - Waiting for the covenant to be registered on title as final condition.
Planner		Status	Most Recent Completed Activity	
Milad Panahifar		Administrative Review	Record and File PLR	

Islands Trust
LTC EXP SUMMARY REPORT F2025
Invoices posted to Month ending March 2025

655 Salt Spring	Invoices posted to Month ending March 2025	<u>Budget</u>	<u>Spent</u>	<u>Balance</u>
65000-655	LTC "Trustee Expenses"	<u>2,000.00</u>	<u>3,237.13</u>	<u>-1,237.13</u>
		<u>2,000.00</u>	<u>3,237.13</u>	<u>-1,237.13</u>
LTC Local				
65200-655	LTC - Local Exp - LTC Meeting Expenses	14,700.00	10,273.12	4,426.88
65210-655	LTC - Local Exp - APC Meeting Expenses	1,000.00	1,154.87	-154.87
65220-655	LTC - Local Exp - Communications	<u>1,500.00</u>	<u>0.00</u>	<u>1,500.00</u>
TOTAL LTC Local Expense		<u>17,200.00</u>	<u>11,427.99</u>	<u>5,772.01</u>
Projects				
73001-655-2007	Salt Spring OCP/LUB	222,000.00	134,083.71	87,916.29
73001-655-4020	Salt Spring Ganges Village Area Planning	86,500.00	0.00	86,500.00
73001-655-4131	Salt Spring Housing Action Program	5,000.00	0.00	5,000.00
73001-655-4139	SSIWPA Plan Coordination	55,000.00	0.00	55,000.00
73001-655-4140	Salt Spring Groundwater Sustainability Strategy	16,500.00	0.00	16,500.00
73001-655-4141	Salt Spring Proof of Water - Subdivision	<u>1,500.00</u>	<u>0.00</u>	<u>1,500.00</u>
TOTAL Project Expenses		<u>386,500.00</u>	<u>134,083.71</u>	<u>252,416.29</u>

Islands Trust
LTC EXP SUMMARY REPORT F2026
Invoices posted to Month ending April 2025

655 Salt Spring	Invoices posted to Month ending April 2025	<u>Budget</u>	<u>Spent</u>	<u>Balance</u>
65000-655	LTC "Trustee Expenses"	5,790.00	0.00	5,790.00
		<u>5,790.00</u>	<u>0.00</u>	<u>5,790.00</u>
LTC Local				
65200-655	LTC - Local Exp - LTC Meeting Expenses	11,290.00	0.00	11,290.00
65210-655	LTC - Local Exp - APC Meeting Expenses	580.00	0.00	580.00
TOTAL LTC Local Expense		<u>11,870.00</u>	<u>0.00</u>	<u>11,870.00</u>
Projects				
73001-655-2007	Salt Spring OCP/LUB	204,000.00	0.00	204,000.00
73001-655-4131	Salt Spring Housing Action Program	5,000.00	0.00	5,000.00
73001-655-4139	SSIWPA Plan Coordination	55,000.00	0.00	55,000.00
73001-655-4140	Salt Spring Groundwater Sustainability Strategy	16,500.00	0.00	16,500.00
TOTAL Project Expenses		<u>280,500.00</u>	<u>0.00</u>	<u>280,500.00</u>

Islands Trust
LTC EXP SUMMARY REPORT F2026
Invoices posted to Month ending May 2025

655 Salt Spring	Invoices posted to Month ending May 2025	<u>Budget</u>	<u>Spent</u>	<u>Balance</u>
65000-655	LTC "Trustee Expenses"	5,790.00	0.00	5,790.00
		<u>5,790.00</u>	<u>0.00</u>	<u>5,790.00</u>
LTC Local				
65200-655	LTC - Local Exp - LTC Meeting Expenses	11,290.00	209.30	11,080.70
65210-655	LTC - Local Exp - APC Meeting Expenses	580.00	105.00	475.00
TOTAL LTC Local Expense		<u>11,870.00</u>	<u>314.30</u>	<u>11,555.70</u>
Projects				
73001-655-2007	Salt Spring OCP/LUB	204,000.00	0.00	204,000.00
73001-655-4131	Salt Spring Housing Action Program	5,000.00	0.00	5,000.00
73001-655-4139	SSIWPA Plan Coordination	55,000.00	0.00	55,000.00
73001-655-4140	Salt Spring Groundwater Sustainability Strategy	16,500.00	0.00	16,500.00
TOTAL Project Expenses		<u>280,500.00</u>	<u>0.00</u>	<u>280,500.00</u>



ISLANDS TRUST CONSERVANCY REPORT TO LOCAL TRUST COMMITTEES AND BOWEN ISLAND MUNICIPALITY

HIGHLIGHTS OF ISLANDS TRUST CONSERVANCY MAY 27TH, 2025 BOARD MEETING

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

1. ORGANIZATION UPDATES/TEAM

- The ITC A/Manager provided a verbal staffing update and identified the various staffing changes at Islands Trust Conservancy.

2. STRATEGIC PLANNING/ADMINISTRATION

- The ITC Board approved the Audited Financial Statements for the 2024/25 fiscal year, and referred the statements to Islands Trust Council for information.
- The ITC Board approved text for inclusion in the 2024/25 Annual Report for approval by Trust Council and submission to the Minister of Housing and Municipal Affairs.
- The ITC Board requested staff to notify the Salt Spring Island Local Trust Committee that Islands Trust Conservancy's interests are unaffected by Development Variance Permit Application PLDVP20250029. The ITC Board recommended that the Salt Spring Island Local Trust Committee ensure that affected First Nations have been asked to comment on this proposed dock expansion.
- The ITC Board requested staff to notify the Galiano Island Local Trust Committee that Islands Trust Conservancy's interests are unaffected by Bylaw 291.
- The ITC Board requested staff to prepare an Islands Trust Conservancy 2026/27 budget request.
- Chair Gauvreau provided an update from the joint Executive Committee – Islands Trust Conservancy Board meeting.
- The ITC Strategic Fund Development Specialist provided a briefing on the Victoria Foundation's notification of an administration fee increase, relevant to the Ruby Alton Property Endowment Fund held with the Victoria Foundation.
- The ITC Board received a copy of the letter regarding the MOU between Islands Trust Council and the W̱SÁNEĆ Leadership Council Society for information. The ITC Board requested staff to cooperate with Tsartlip First Nation and Tseycum First Nation, via the W̱SÁNEĆ Leadership Council Society, to develop an agreement for Islands Trust Conservancy Board's consideration.
- Trustee Elliott provided a verbal Executive Committee update and highlighted that direction was given to proceed with two professional development workshops on addressing Indigenous-specific racism, and that the Policy Statement Amendment Project is ongoing with a town hall and final revisions expected in late July.
- Trustee Yates provided a verbal Trust Council update and highlighted that the next Trust Council is scheduled from June 17-19th, 2025 on Salt Spring Island and will include an ITC 35th anniversary celebration.



ISLANDS TRUST CONSERVANCY REPORT TO LOCAL TRUST COMMITTEES AND BOWEN ISLAND MUNICIPALITY

- Trustee Yates provided a verbal Financial Planning Committee update and highlighted that there was no report from the last meeting and that she will support the proposed ITC budget items going to the committee.
- Chair Gauvreau provided a verbal Governance Committee update and advised that the next meeting is August 10th, 2025.
- Chair Gauvreau provided a verbal update on the proposed Conservation Fund Working Group. Discussion ensued on appointing an ITC Board member to the working group.
- Trustee Elliott provided a verbal update on the Bowen Island Municipality – Executive Committee meeting on April 30th, 2025 and highlighted topics of note including the 2025 Strategic Plan, an update on the Official Community Plan, and improvements to BC Ferries service to island communities.

3. COVENANT AND PROPERTY MANAGEMENT

- The ITC Board approved the request from the Ministry of Water, Lands, and Resource Stewardship to upgrade Provincial Groundwater Observation Well 197, in S’ul-hween X’pey (Elder Cedar) Nature Reserve, with a new well box and the addition of equipment for satellite telemetry.
- The ITC Board requested staff to begin negotiations for a Well Access Agreement with the Ministry of Water, Lands, and Resource Stewardship and the two covenant holders Gabriola Land & Trails Trust and Nanaimo & Area Land Trust.

4. COMMUNICATIONS AND OUTREACH

- The ITC Board discussed the letter from Minister Kahlon to Trust Council Chair Patrick regarding the Islands Trust review.
- The ITC Board received the ITC Board Chair letter to Minister Kahlon regarding the ITC Five-Year Plan requirement for information.
- The ITC Communications Specialist provided a verbal update on Islands Trust Conservancy’s 35th anniversary and highlighted the newly launched Islands Trust Conservancy blog, *the Journal*.

Learn more about Islands Trust Conservancy: <https://islandstrust.bc.ca/conservancy/>

Visit the Islands Trust Conservancy Journal: <https://islandstrust.bc.ca/conservancy/the-journal/>

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