

**A REGULAR MEETING  
OF THE TOWN OF LADYSMITH COUNCIL  
AGENDA  
6:00 P.M.**

Tuesday, October 15, 2024  
Ladysmith Seniors Centre  
630 2nd Avenue

---

Pages

**1. CALL TO ORDER**

Call to Order 6:00 p.m. in Open Session, in order to retire immediately into Closed Session.

*Members of the public are welcome to attend all Open Meetings of Council, but may not attend Closed Meetings.*

**2. CLOSED SESSION**

Recommendation

That, in accordance with section 90(1) of the Community Charter, Council retire into closed session in order to consider items related to the following:

(c) labour relations or other employee relations.

**3. OPEN MEETING AND ACKNOWLEDGEMENT (7:00 P.M.)**

The Town of Ladysmith acknowledges with gratitude that this meeting takes place on the unceded territory of the Stz'uminus First Nation.

Members of the public may attend meetings in person at the Ladysmith Seniors Centre or view the livestream on YouTube:

<https://www.youtube.com/channel/UCH3qHAExLiW8YrSuJk5R3uA/featured>.

**4. AGENDA APPROVAL**

Recommendation

That Council approve the agenda for this Regular Meeting of Council for October 15, 2024.

**5. RISE AND REPORT- Items from Closed Session**

**Item from the Closed Meeting of Council held October 1, 2024**

**CE 2024-074**

That Council:

1. Award the Ladysmith Chargers U17B - Kennedy team with the Achievement Award as described in the Town of Ladysmith Civic Recognition Program Policy 01-0290-A, to celebrate their gold medal victory at the recent provincial softball championship;
2. Invite the team to a future meeting of Council; and
3. Rise with report once the team has been notified.

*Motion Carried*

**6. MINUTES**

**6.1 Minutes of the Regular Meeting of Council held October 1, 2024**

7

Recommendation

That Council approve the minutes of the Regular Meeting of Council held October 1, 2024.

**7. PROCLAMATIONS**

**7.1 Medical Radiation Technologist Week - November 3-9, 2024**

12

Acting Mayor McKay has proclaimed November 3-9, 2024 as "Medical Radiation Technologist Week" in the Town of Ladysmith.

**7.2 Color The World Orange Day for Complex Regional Pain Syndrome (CRPS)/Reflex Sympathetic Dystrophy (RSD) Awareness - November 4, 2024**

13

Acting Mayor McKay has proclaimed November 4, 2024 as "Color The World Orange Complex Regional Pain Syndrome (CRPS)/ Reflex Sympathetic Dystrophy (RSD) Awareness Day" in the Town of Ladysmith.

**8. DEVELOPMENT APPLICATIONS**

**8.1 Development Permit Application – 901 Gladden Road**

14

Recommendation

That Council issue Development Permit 3060-24-07 to allow the following:

- a. construction of a pedestrian walkway along the Ladysmith Marina waterfront;
- b. grading the marina parking lot with temporary gravel; and
- c. installation of one temporary portable office building on 901 Gladden Road (Lot B, District Lots 86, 87 And 98, Oyster District, District Lot 2054, Cowichan District, Plan EPP87265, PID: 030-801-478).

**9. COMMITTEE MINUTES**

**9.1 Parks, Recreation & Culture Advisory Committee - September 18, 2024 35**

Recommendation

That Council receive the minutes of the Parks, Recreation & Culture Advisory Committee meeting held September 18, 2024.

**9.2 Accessibility Advisory Committee - September 25, 2024 37**

Recommendation

That Council receive the minutes of the Accessibility Advisory Committee meeting held September 25, 2024.

**10. REPORTS**

**10.1 2nd Avenue Geotechnical Findings 39**

Recommendation

That Council direct staff to monitor the slope on 2<sup>nd</sup> Avenue between Symonds Street and French Street, and document findings until an opportunity arises to combine the required remediation work with utility upgrades and/or development in the area.

**10.2 UBCM – Community Emergency Preparedness Fund Grant Application 102**

Recommendation

That Council:

- 1. Support the Town’s application to the UBCM Community Emergency Preparedness Fund, Volunteer and Composite Fire Department Equipment & Training Grant in the amount of \$ 35,000 for a turnout gear decontamination washer and dryer cabinet;
- 2. Direct staff to include the above funding amount and source in the 2025-2029 Financial Plan; and
- 3. Confirm its willingness to provide overall grant management

subject to receipt of grant funding.

**10.3 Rural Economic Diversification and Infrastructure Program (REDIP) 105**

Recommendation

That Council direct staff to include in the 2025-2029 Financial Plan \$131,250 for the planning of a mountain bike trail network with the funds to come from the Rural Economic Diversification and Infrastructure Program for \$100,000 and the remainder to come from prior year surplus.

**11. BYLAWS**

**11.1 Bylaws for Adoption**

**11.1.1 "Town of Ladysmith Revitalization Tax Exemption Bylaw 2007, No. 1625 Amendment Bylaw 2024, No. 2181" 110**

Recommendation

That Council adopt "Town of Ladysmith Revitalization Tax Exemption Bylaw 2007, No. 1625 Amendment Bylaw 2024, No. 2181".

**11.1.2 "2025 Permissive Tax Exemptions Bylaw 2024, No. 2189" 112**

Recommendation

That Council adopt "2025 Permissive Tax Exemptions Bylaw 2024, No. 2189".

**11.1.3 "Freedom of Information and Protection of Privacy Bylaw 2022, No. 2116, Amendment Bylaw 2024, No. 2193". 122**

Recommendation

That Council adopt "Freedom of Information and Protection of Privacy Bylaw 2022, No. 2116, Amendment Bylaw 2024, No. 2193".

**11.1.4 "Town of Ladysmith Zoning Bylaw 2014, No. 1860 Amendment Bylaw 2024, No. 2194" 123**

Recommendation

That Council:

1. Give first, second and third readings to "Town of Ladysmith Zoning Bylaw 2014, No. 1860 Amendment Bylaw 2024, No. 2194"; and

2. Adopt "Town of Ladysmith Zoning Bylaw 2014, No. 1860 Amendment Bylaw 2024, No. 2194" pursuant to Section 785(1)(b) of the Local Government Act.

- 11.1.5 **"Council Procedure Bylaw 2009, No. 1666, Amendment Bylaw 2024, No. 2195"** 126

Recommendation

That Council adopt "Council Procedure Bylaw 2009, No. 1666, Amendment Bylaw 2024, No. 2195".

- 11.2 **Bylaw Status Sheet** 127

12. **NEW BUSINESS**

- 12.1 **Emergency Management Cowichan 2025 Emergency Management Grants** 129

Recommendation

1. That Council authorize the Cowichan Valley Regional District to apply for, receive, and manage the UBCM Community Emergency Preparedness Fund Emergency Support Services 2025 grant funding up to \$200,000 on behalf of the Town of Ladysmith.

Recommendation

2. That Council authorize the Cowichan Valley Regional District to apply for, receive, and manage the UBCM Community Emergency Preparedness Fund Emergency Operations Centre 2025 grant funding up to \$200,000 on behalf of the Town of Ladysmith.

Recommendation

3. That Council authorize the Cowichan Valley Regional District to apply for, receive, and manage the 2025 UBCM Community Emergency Preparedness Fund for Public Notification and Evacuation Route Planning grant funding up to \$200,000 on behalf of the Town of Ladysmith.

- 12.2 **Ladysmith Dragon Boat Society - 2024 Year in Review** 139

Recommendation

That Council receive the Ladysmith Dragon Boat Society 2024 year end report.

### **13. QUESTION PERIOD**

- A maximum of 15 minutes is allotted for questions.
- Persons wishing to address Council during "Question Period" must be Town of Ladysmith residents, non-resident property owners, or operators of a business.
- Individuals must state their name and address for identification purposes.
- Questions put forth must be related to items on the agenda.
- Questions must be brief and to the point.
- Questions shall be addressed through the Chair and answers given likewise. Debates with or by individual Council members or staff members are not allowed.
- No commitments shall be made by the Chair in replying to a question. Matters which may require action of the Council shall be referred to a future meeting of the Council.

### **14. ADJOURNMENT**



## MINUTES OF A REGULAR MEETING OF COUNCIL

Tuesday, October 1, 2024

6:30 P.M.

Ladysmith Seniors Centre  
630 2nd Avenue

### Council Members Present:

Acting Mayor Tricia McKay  
Councillor Ray Gourlay  
Councillor Amanda Jacobson  
Councillor Duck Paterson

Councillor Marsh Stevens (*joined the meeting via Zoom at 7:55 p.m.*)  
Councillor Jeff Virtanen

### Staff Present:

Allison McCarrick  
Erin Anderson  
Chris Barfoot  
Sue Bouma

Tim Tanton  
Nick Pescod  
Mark Van Vliet  
Hayley Young

---

### 1. CALL TO ORDER

Acting Mayor McKay called this Meeting of Council to order at 6:30 p.m., in order to retire immediately into Closed Session.

### 2. CLOSED SESSION

#### CS 2024-220

That, in accordance with section 90(1) of the *Community Charter*, Council retire into closed session in order to consider items related to the following:

- b) personal information about an identifiable individual who is being considered for a municipal award or honour, or who has offered to provide a gift to the municipality on condition of anonymity;
- e) the acquisition, disposition or expropriation of land or improvements, if the council considers that disclosure could reasonably be expected to harm the interests of the municipality.

*Motion Carried*

**3. OPEN MEETING AND ACKNOWLEDGEMENT (7:00 P.M.)**

Acting Mayor McKay called this Regular Meeting of Council to order at 7:00 p.m., recognizing with gratitude that it was taking place on the unceded territory of the Stz'uminus First Nation.

**4. AGENDA APPROVAL**

**CS 2024-221**

That Council approve the agenda for this Regular Meeting of Council for October 1, 2024, as amended to add a presentation to item 8.2 "Rosalie Sawrie, Project Director, Social Planning Cowichan Transportation Plan Project Outcomes" as circulated to Council and published on the website.

*Motion Carried*

**5. RISE AND REPORT- Items from Closed Session**

Council rose from Closed Session at 6:41 p.m. with report on the following:

**CE 2024-073**

That Council:

1. Appoint Jake Belobaba, Director of Development Services to bid on any of the residential properties included in the 2024 Tax Sale;
2. Rise and report on Recommendation No. 1 immediately.

**6. MINUTES**

**6.1 Minutes of the Regular Meeting of Council held September 24, 2024**

**CS 2024-222**

That Council approve the minutes of the Regular Meeting of Council held September 24, 2024.

*Motion Carried*

**7. COMMITTEE MINUTES**

**7.1 Public Arts Committee - September 23, 2024**

**CS 2024-223**

That Council receive the minutes of the Public Arts Committee meeting held September 23, 2024.

*Motion Carried*



**7.2 Poverty Reduction Task Group - July 17, 2024**

**CS 2024-224**

That Council receive the minutes of the Poverty Reduction Task Group meeting held July 17, 2024.

*Motion Carried*

**7.3 Accessibility Advisory Committee - May 22, 2024**

**CS 2024-225**

That Council receive the minutes of the Accessibility Advisory Committee meeting held May 22, 2024.

*Motion Carried*

**8. DELEGATIONS**

**8.1 Rosalie Sawrie, Project Director, Social Planning Cowichan**

Rosalie Sawrie, Project Director at Social Planning Cowichan, updated the Council on the CommUNITY Together to End Poverty Hw-nuts'-ulwum (As One) Project, covering its themes, goals, and session details. She answered questions from the Council, who thanked her and the volunteers for their community efforts.

**8.2 Rosalie Sawrie, Project Director, Social Planning Cowichan**

Rosalie Sawrie, Project Director at Social Planning Cowichan, updated the Council on the "Exploring Transportation Options for Ladysmith and Surrounding Communities" initiative, including key takeaways from the engagement process. Council expressed their appreciation for the thorough and informative presentation.

Councillor Stevens joined the meeting via Zoom at 7:55 p.m.

## 9. BYLAWS

### 9.1 Bylaws for Introduction

#### 9.1.1 "Freedom of Information and Protection of Privacy Bylaw 2022, No. 2116, Amendment Bylaw 2024, No. 2193"

##### **CS 2024-226**

That Council give first, second and third readings to "Freedom of Information and Protection of Privacy Bylaw 2022, No. 2116, Amendment Bylaw 2024, No. 2193".

*Motion Carried*

OPPOSED: Councillor Virtanen.

#### 9.1.2 "Council Procedure Bylaw 2009, No. 1666, Amendment Bylaw 2024, No. 2195"

##### **CS 2024-227**

That Council give first, second and third readings to "Council Procedure Bylaw 2009, No. 1666, Amendment Bylaw 2024, No. 2195".

*Motion Carried*

### 9.2 Bylaws for Adoption

#### 9.2.1 "Building & Plumbing Bylaw 2024, No. 2174"

##### **CS 2024-228**

That Council adopt "Building & Plumbing Bylaw 2024, No. 2174".

*Motion Carried*

#### 9.2.2 "Town of Ladysmith Fees and Charges Bylaw 2008, No. 1644, Amendment Bylaw 2024, No. 2191"

##### **CS 2024-229**

That Council adopt "Town of Ladysmith Fees and Charges Bylaw 2008, No. 1644, Amendment Bylaw 2024, No. 2191."

*Motion Carried*

**9.2.3 “Water Supply Works Temporary Borrowing Bylaw 2024, No. 2192”**

**CS 2024-230**

That Council adopt “Water Supply Works Temporary Borrowing Bylaw 2024, No. 2192”.

*Motion Carried*

**9.3 Bylaw Status Sheet**

**10. NEW BUSINESS**

**10.1 Appointment of Deputy Mayor**

Acting Mayor McKay appointed Councillor Ray Gourlay as Deputy Mayor to November 4, 2024.

**10.2 Appointment of Deputy Approving Officer**

**CS 2024-231**

That Council approve the appointment of Tim Tanton as Deputy Approving Officer.

*Motion Carried*

**11. QUESTION PERIOD**

A member of the public asked whether wheelchair accessibility for buildings is being considered as an initiative of the Accessibility Committee.

**12. ADJOURNMENT**

**CS 2024-232**

That this Regular Meeting of Council be adjourned at 8:12 p.m.

*Motion Carried*

CERTIFIED CORRECT

---

Acting Mayor (T. McKay)

---

Corporate Officer (S. Bouma)



TOWN OF LADYSMITH

## PROCLAMATION

### Medical Radiation Technologist Week

**WHEREAS:** *Medical radiation technologists are an essential link between patients and the sophisticated medical imaging and radiotherapy technologies in British Columbia's health care system; and*

**WHEREAS:** *The Town of Ladysmith recognizes the vital contributions of medical radiation technologists to safe and appropriate health care in this province; and*

**WHEREAS:** *Other healthcare providers depend on the specialized skills and expertise of medical radiation technologists to ensure patients receive timely diagnoses and treatments; and*

**WHEREAS:** *Medical Radiation Technologist Week is an opportunity to recognize and acknowledge the expertise and dedication of medical radiation technologists as well as to encourage others to enter this vital profession;*

**THEREFORE,** *I, Tricia McKay, Acting Mayor of the Town of Ladysmith, do hereby proclaim November 3-9, 2024, as "Medical Radiation Technologist Week" in the Town of Ladysmith.*

---

Acting Mayor T. McKay

October 8, 2024



TOWN OF LADYSMITH

## PROCLAMATION

Color The World Orange Day for Complex Regional Pain Syndrome (CRPS)/Reflex Sympathetic Dystrophy (RSD) Awareness Day

- WHEREAS:** *Complex Regional Pain Syndrome (CRPS), also known as Reflex Sympathetic Dystrophy (RSD) is a nerve disorder that causes chronic pain.*
- WHEREAS:** *The symptoms of CRPS/RSD are often described as burning that is out of proportion to the severity of the initial injury and can include swelling and extreme sensitivity to touch.*
- WHEREAS:** *While CRPS/RSD was first identified during the Civil War, it remains a poorly understood condition. There is no cure.*
- WHEREAS:** *The National Institute of Neurological Disorders and Stroke and other institutes of the National Institutes of Health support research relating to CRPS/RSD.*
- WHEREAS:** *Members of the CRPS/RSD community will spread awareness in November;*
- THEREFORE,** *I, Tricia McKay, Acting Mayor of the Town of Ladysmith, do hereby proclaim November 4, 2024, as “Color the World Orange Day for CRPS/RSD Awareness” in the Town of Ladysmith.*

---

Acting Mayor T. McKay

October 8, 2024

**STAFF REPORT TO COUNCIL**

**Report Prepared By:** Vidhi Kyada, Planning Technician  
**Reviewed By:** Jake Belobaba, RPP, MCIP, Director of Development Services  
**Meeting Date:** October 15, 2024  
**File No:** DP 3060-24-07  
**RE:** Development Permit Application – 901 Gladden Road

**RECOMMENDATION:**

That Council issue Development Permit 3060-24-07 to allow the following:

- a) construction of a pedestrian walkway along the Ladysmith Marina waterfront;
- b) grading the marina parking lot with temporary gravel; and
- c) installation of one temporary portable office building on 901 Gladden Road (Lot B, District Lots 86, 87 And 98, Oyster District, District Lot 2054, Cowichan District, Plan EPP87265, PID: 030-801-478).

**EXECUTIVE SUMMARY:**

The purpose of this report is to introduce a proposal for a Maritime Development Permit (Development Permit Area 1) application for Council’s consideration which would allow the applicant to grade the marina parking lot with temporary gravel, construct a waterfront pedestrian walkway and install a temporary (portable) office building. Staff recommend that DP 24-07 (Attachment B) be approved based on the analysis of the impacts and the application’s consistency with the Marine – Development Permit Area 1 guidelines.

**PREVIOUS COUNCIL DIRECTION:**

| Resolution  | Meeting Date   | Resolution Details  |
|-------------|----------------|---|
| CS 2023-194 | August 1, 2023 | That Council issue Development Variance Permit Number 3090-23-01 for 1251 and 1261 Rocky Creek Road and 901 Gladden Road (Block C, DL 2054, Cowichan District, Plan EPC721; and DL 2061, Cowichan District, Plan 3TU1959; Crown Lease #114642) to vary section 16.2.5(a) of “Town of Ladysmith Zoning Bylaw 2014, No. 1860” to increase the maximum allowable height of boathouses to 12.0 metres in the area specified in the permit.<br><i>Motion Carried</i> |
| CS 2017-136 | May 1, 2017    | 1. That Council issue Development Permit 3060-17-04 to permit the issuance of a building permit for one temporary (portable) office building on Lot A, District Lot 81, 86, 87, 98 Oyster District and District Lot 2054 Cowichan District, Plan  |



| Resolution | Meeting Date | Resolution Details  |
|------------|--------------|---|
|            |              | EPP35537 (901 Gladden Road); and that security of \$10,000 be submitted to guarantee the removal of the temporary structure by December 31, 2020 or when a permanent office building is constructed, whichever is earlier; and<br>2. Authorize the Mayor and Corporate Officer to sign the Development Permit.<br><i>Motion carried.</i>  |
| 2011-245   | June 6, 2011 | It was moved, seconded and carried that Development Variance Permit 3090-11-02 be approved for District Lot 2061, Lease 0114642 (12335 Rocky Creek Road) to vary the height of boat house form nine metres to 11 metres for Dock A and that the Mayor and Corporate Officer be authorized to sign Development Variance Permit 3090-11-02. |
| 2011-246   | June 6, 2011 | It was moved, seconded and carried that Development Permit 3060-11-12 be issued in order to amend the site plan for Ladysmith Marina Development Permit 3060-06-06, and that the Mayor and Corporate Officer be authorized to sign Development Permit.  |

### **INTRODUCTION/BACKGROUND:**

#### Subject property

The subject property is a 2.475 ha parcel (Lot 3) located at 901 Gladden Road. Part of the subject property is Crown land, leased by the Ladysmith Marina, which is operated by Oak Bay Marina Ltd. The property is partially designated as Marine and Industrial under “Official Community Plan Bylaw 2022, No. 2200” (OCP) and falls within the Maritime Development Permit Area (DPA 1). The parcel is split-zoned Tourist Commercial (C-4) and Light Industrial (I-1) in “Town of Ladysmith Zoning Bylaw 2014, No. 1860”. The property currently contains a gravel parking area with one temporary office and two amenity buildings on the site.

Surrounding land-uses include:

- Northeast: Ladysmith Marina docks for boathouses (A to C) and general boat moorage (D to G).
- Northwest: Vacant land zoned for mixed-use residential (CD-7).
- Southeast: Western Forest Products Marine Industrial site.
- South: Various Industrial uses (e.g., automotive servicing and storage facilities).

A map of the subject property is provided in Attachment A.

#### Background

In May 2004, Oak Bay Marina Ltd. entered into a provincial lease agreement dated May 30, 2004, for District Lot 2054. This agreement grants a lease for commercial marina uses, marine service station and boat launching purposes. This lease agreement terminates on the 30th anniversary of the Commencement Date, May 30, 2034. The lease agreement contains a number of limitations, conditions, and other considerations that the Lessee (Oak Bay Marina Ltd.) must abide by.

A Development Permit (DP) was first issued by the Director of Development Services for the subject property in 2006 (3060-06-06) for the development of the Ladysmith Marina that included areas for parking, an administrative building, moorage, boathouses, and paths/walkways. In 2011, a DP amendment (3060-11-12) was issued to amend DP 3060-06-06 to approve a new site plan to permit the layout of boathouse locations and moorage areas. Development Variance Permit 3090-11-02 was also issued in 2011 to vary the boathouse heights at A Dock (DL 2061) from 9.0 metres to 11.0 metres. Development Permit 3060-17-04 was issued in 2017 to permit the issuance of a building permit for one temporary (portable) office building. A variance (DVP 3090-23-01) was granted in 2023 to vary the boathouse heights at the ends of A Dock and B Dock from 9.0 metres to 12.0 metres.

A Preliminary Layout Approval (PLA) was issued on April 5, 2023 by the Approving Officer to subdivide the parent parcel into 3 lots on the condition that the existing sidewalk on Gladden Road would be extended to the Rocky Creek Road frontage. This PLA was renewed on March 15, 2024. The Covenants CA7488210 and CA7488209 on the title of the property require the construction and dedication of a public walkway along the shoreline in a location acceptable to the Town.

## **PROPOSAL**

The applicant is seeking a Development Permit for the part of the property zoned C-4 (Tourist Commercial) to accommodate ongoing improvements to Ladysmith Marina, including the construction of a pedestrian walkway along the waterfront of Ladysmith Marina, grading the marina parking lot with temporary gravel, and installing one temporary (portable) office building and underground services.

The pedestrian walkway will connect Gladden Road with the new development by Rocky Creek Ventures, now under construction, to the northwest, connecting the walkway along the waterfront. The pathway will conform to Town standards, with a 3 m wide statutory right-of-way (SRW) and 2 m wide hard surface walkway. The walkway has been designed by civil engineers to minimize changes in elevation between the water's edge and the top of the bank as it approaches the northerly property line and connects with the Rocky Creek Ventures improvements. Part of the pedestrian walkway is on Crown land, and construction in this area will require Provincial approval. As a condition of subdivision approval, the Approving Officer has required a Statutory Right of Way allowing the Town to redirect the pathway if the Province does not allow the path to be built on the Crown land.



The proposed grading will prepare the site for future paving, and surplus material from grading is intended to be left on site. A temporary parking layout has been designed, providing a significant improvement over the existing parking facilities.

A new temporary marina office is proposed near the main entrance off Gladden Road. The temporary building will include a customer entrance area, front desk, and marina office space for staff and a boat-broker. The colour palette will complement the marina’s theme colours of blue, grey and off-white.

The applicant’s letter of rationale is provided as Attachment C.

Staff have confirmed that the Provincial Crown Lease is valid and in good standing. The conditions of the DP do not conflict with the requirements of the Provincial Lease.

**ANALYSIS:**

For the reasons outlined below, staff are recommending approval of the proposal.

Official Community Plan

Under the OCP, the subject property is currently designated for Marine and Industrial use. The Marine designation is intended to provide for many marine-oriented uses, including recreation and preexisting marinas. The Industrial designation is intended to provide industrial park development and employment centres. The Ladysmith Marina provides boat moorage and shelter, and it contributes to the tourism sector through its marina provisions. The proposal is consistent with the Marine and Industrial designations.

Zoning Bylaw

The subject property is zoned C-4 and I-1 in the Zoning Bylaw. The C-4 zone permits a Marina Office as a principal use and two accessory buildings. The proposal meets all the relevant Zoning Bylaw regulations.

Development Permit Area 1 - Maritime

The proposal is subject to the requirements of Development Permit Area 1 - Maritime. The purpose of DPA 1 is to provide guidelines for form and character of development, to protect development from hazardous conditions, to promote energy and water conservation, and to reduce greenhouse gas emissions. Table 1 provides a summary of the proposed development’s consistency with the applicable DPA 1 guideline.

*Table 1: DPA 1 Guideline Analysis*

| <b>Maritime Development Permit Area Guidelines (DPA 1)</b> |  |
|--|--|
| <b>Guideline</b>   | <b>Comments</b>  |
| Land and Buildings and Piled Structures                    | <ul style="list-style-type: none"> <li>The temporary marina office (modular Britco trailers with exterior enhancements) will be subject to a building permit with tie-down requirements. There will be no piles or strip foundations.</li> </ul> |

|   |   |
|---|---|
|   | <ul style="list-style-type: none"> <li>• The building sits on blocks and is anchored into the ground with spike anchors common for such mobile trailers.</li> <li>• This land-based temporary building reflects a marine character by its colour palette of blue, grey and off-white.</li> </ul>  |
| Heritage and Views                      | <ul style="list-style-type: none"> <li>• The proposed colour palette aligns with the marina’s colours of blue, grey and off-white.</li> <li>• The temporary building is oriented facing towards the Marina to promote the ocean view from the office.</li> <li>• The pedestrian pathway on the waterfront forms a direct connection to the ocean and Ladysmith Marina.</li> </ul> |
| Signs and Lighting                      | <ul style="list-style-type: none"> <li>• The signage reflects the maritime character with blue background and white lettering and does not incorporate back-lighting.</li> <li>• The proposal does not include provision of new lighting for the parking area, which supports dark sky principles.</li> </ul>   |
| Outdoor Patios                          | <ul style="list-style-type: none"> <li>• At the front of the proposed temporary office building, an entrance deck is planned that provides access to the office and is a convenient place for customers to sit outside.</li> <li>• It does not have any weather protection and is in the north direction to achieve maximum sunshine.</li> </ul>                                  |
| Mechanical Equipment & Waste Management | <ul style="list-style-type: none"> <li>• Recycling, organic composting, and solid waste containers are screened with a solid enclosure on all sides.</li> <li>• There is no rooftop or grade level mechanical equipment. However, there is a wall-mounted AC unit which would be screened after the construction.</li> </ul>  |
| Sensitive Ecosystems                    | <ul style="list-style-type: none"> <li>• Conditions for monitoring and reporting are a condition of the DP.</li> </ul>  |
| Accessibility & Connectivity            | <ul style="list-style-type: none"> <li>• A ramp at the front and back of the temporary office provides access to the office and washrooms respectively.</li> <li>• The proposed pathway aims to provide additional connectivity to the existing sidewalk at Gladden Road.</li> </ul>  |
| Hazard Mitigation                       | <ul style="list-style-type: none"> <li>• The proposed building is a temporary marina office and not habitable living space.</li> <li>• The building is located approximately 4.8 m above the highwater mark.</li> </ul>   |
| Safety                                  | <ul style="list-style-type: none"> <li>• The windows on the temporary building provide visual access to all areas of the site.</li> <li>• The seating area outside the office building will provide additional opportunities for gathering and activity.</li> </ul>   |

Staff recommend that the DP be issued since the proposal is generally consistent with the DPA 1 guidelines.

**ALTERNATIVES:**

Council can choose to:

1. Not issue DP 3060-24-07 and specify the reasons for refusal citing specific development permit guidelines.
2. Defer consideration of the application and refer the proposal to a subsequent meeting of Council.
3. Amend the conditions of DP 24-07 and approve the issuance of the permit as amended.
4. Refer the application back to staff for further review, as specified by Council.

**FINANCIAL IMPLICATIONS:**

N/A

**LEGAL IMPLICATIONS:**

Standard requirements for Council consideration and referrals under provincial legislation have been accounted for in staff’s recommendations of this report.

If DP 24-07 is refused, reasons must be given based on the DPA 1 guidelines, as the issuance of a DP is not a completely discretionary decision of Council.

**CITIZEN/PUBLIC RELATIONS IMPLICATIONS:**

No public hearing or public notification is required for the proposed development permit application.

**INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS:**

The application was circulated amongst Town departments for review. Their comments are summarized below:

*Table 3: Department Comments*

| <b>Referred (Yes/No)</b> | <b>Department</b>       | <b>Comments</b>   |
|--------------------------|-------------------------|---|
| Yes                      | Infrastructure Services | The installation of water service for the temporary building should be from Gladden Road and alignment of the trail should be adjusted with the adjacent lot. A detailed Erosion and Sediment Control Plan to be submitted prior to construction.   |
| Yes                      | Building Inspection     | The temporary building should comply with the <i>Building &amp; Plumbing Bylaw No. 2174</i> . The condition of receiving occupancy permit must be the full removal of the existing temporary office to the satisfaction of the Senior Building Inspector. A bearing report would be required during construction. |





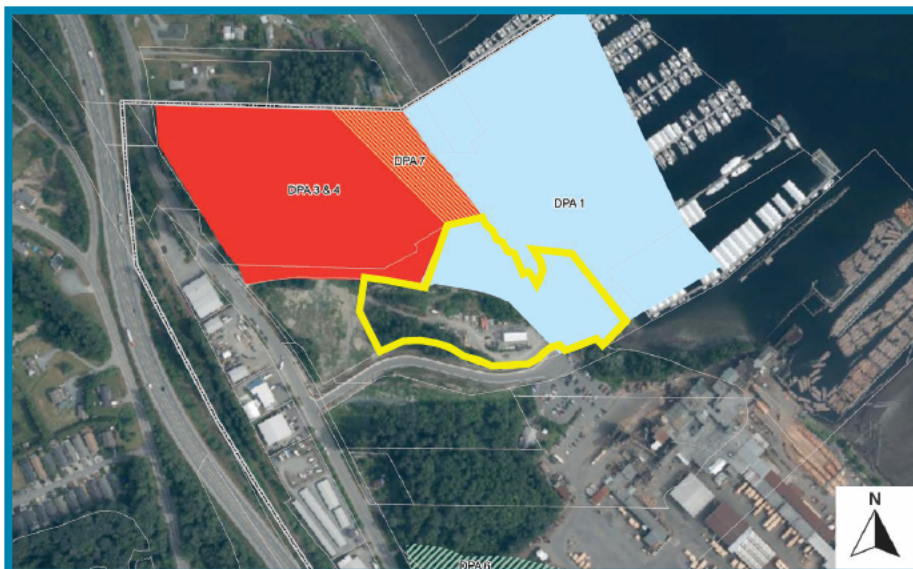
 Subject Property

# LOCATION MAP



 Subject Property

# ZONING MAP



 Subject Property

# DPA MAP

# ATTACHMENT - B



## TOWN OF LADYSMITH DEVELOPMENT PERMIT (Section 489 Local Government Act)

FILE NO: 3060-24-07

DATE: October 16, 2024

---

Name of Owner(s) of Land (Permittee): Oak Bay Marina Ltd., Inc. No. BC778751

Applicant: Deane Strongitharm

Subject Property (Civic Address): 901 Gladden Road

---

1. This Development Permit is subject to compliance with all of the bylaws of the Town of Ladysmith applicable thereto, except as specifically varied by this Permit.
2. This Permit applies to and only to those lands within the Town of Ladysmith described below, and any and all buildings structures and other development thereon:  
  

Lot B, District Lots 86, 87 and 98, Oyster District, and District Lot 2054  
Cowichan District, Plan EPP87265  
PID: 030-801-478  
(901 Gladden Road)  
(referred to as the "Land")
3. This Permit has the effect of authorizing:
  - (a) the alteration of land designated in the Official Community Plan under section 488 of the *Local Government Act*.
  - (b) the issuance of a building permit for the construction of a temporary building on the Land in accordance with the plans and specifications attached to this Permit.
  - (c) removal and replanting of vegetation for the construction of public pathway on the waterfront in accordance with the plans and specifications attached to this Permit.

Page 1 of 3

The proposed alteration of land, construction, and landscaping on the Land is subject to the conditions, requirements and standards imposed and agreed to in section 5 of this Permit.

4. This Permit does not have the effect of:
  - (a) Varying the use or density of the Land specified in Town of Ladysmith Zoning Bylaw 2014, No. 1860.
  - (b) Authorizing the construction of permanent buildings, paved parking and/or any additional land alteration, vegetation removal or replanting not otherwise specified within this Permit.
5. The Permittee, as a condition of the issuance of this Permit, agrees to:
  - (a) Construct a pedestrian walkway along the waterfront of Ladysmith Marina and grade the marina parking lot with temporary gravel as shown in **Schedule A – Grading Plan**.
  - (b) Construct a temporary office building on the Land as shown in **Schedule B – Landscape Plan** and **Schedule C – Office Elevations**.
  - (c) Remove the existing temporary office building.
  - (d) Develop the Provincial Crown Lands only with the explicit approval from the Province.
  - (e) Retain a registered professional Biologist for the onsite monitoring of the trail installation and any other works along the foreshore and intertidal zone.
6. If the Permittee does not substantially start any construction permitted by this Permit within **two years** of the date of this Permit as established by the authorizing resolution date, this Permit shall lapse.
7. For certainty, any retaining walls or vegetation clearing outside of the immediate development area are subject to an additional Development Permit.
8. The plans and specifications attached to this Permit are an integral part of this Permit.
9. This Permit prevails over the provisions of the Bylaw in the event of conflict.
10. Notice of this Permit shall be filed in the Land Title Office at Victoria under s.503 of the *Local Government Act*, and upon such filing, the terms of this

Permit (3060-24-07) or any amendment hereto shall be binding upon all persons who acquire an interest in the land affected by this Permit.

11. Despite issuance of this permit, construction may not start without a Building Permit or other necessary permits.
12. The issuance of this Permit does not relieve the Permittee from complying with the Heritage Conservation Act.

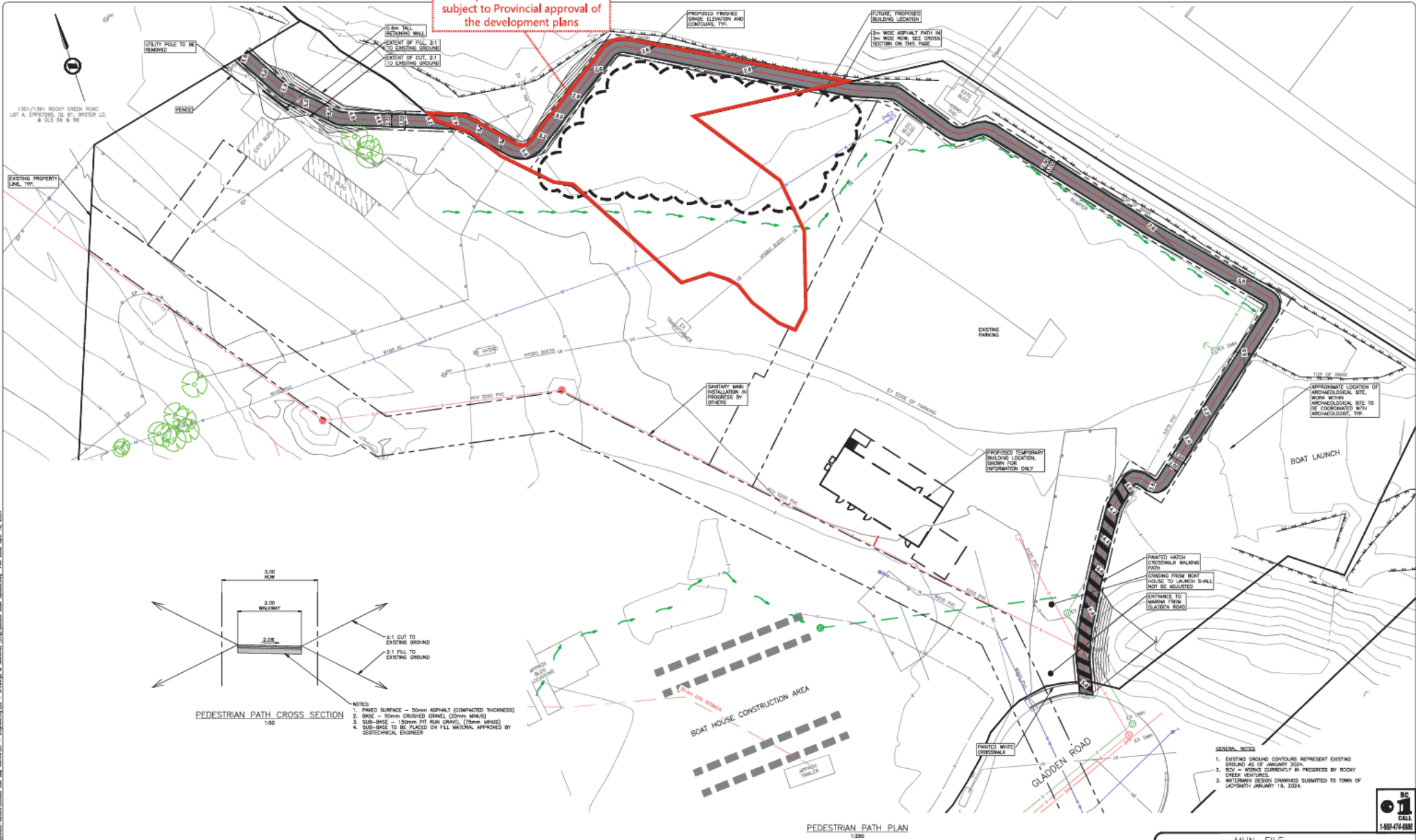
AUTHORIZED BY RESOLUTION NO. \_\_\_\_\_ PASSED BY THE COUNCIL OF THE TOWN OF LADYSMITH ON THE \_\_\_\_ DAY OF \_\_\_\_\_, 2024.

DRAFT





Development on Crown Lands is subject to Provincial approval of the development plans



|                   |  |
|-------------------|--|
| LEGAL DESCRIPTION | LOT B, PLAN EPP87265, DISTRICT LOT 66, OYSTER LAND DISTRICT, & D.'S 67 & 98, & D. 2054 COMICHAN DISTRICT |
| PROJECT DATUM     | ELEVATIONS ARE GEODETIC AND TO NAD83   |

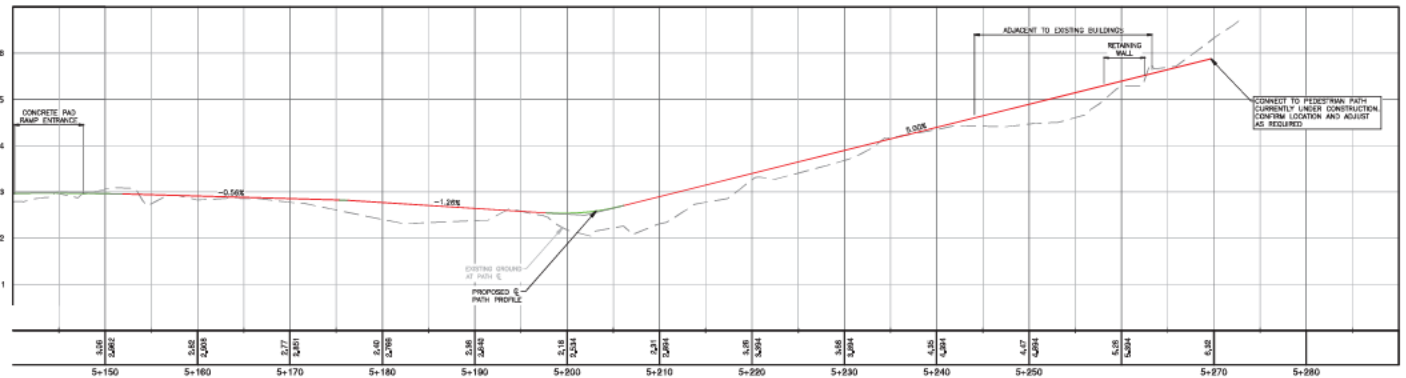
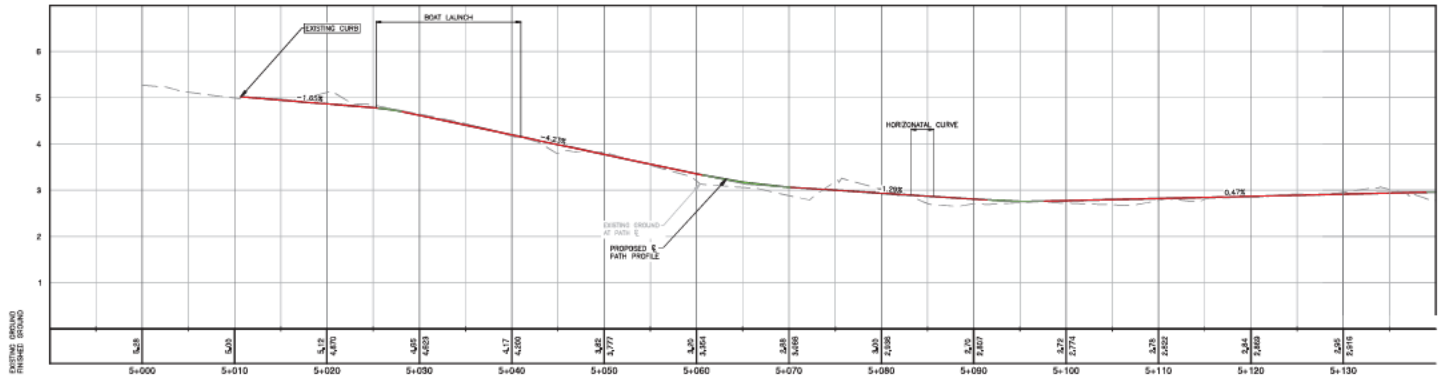
| ISSUED |                               | NO. | DESCRIPTION | YYYY MM DD | DE | DA | CK |
|--------|-------------------------------|-----|-------------|------------|----|----|----|
| 4      | ISSUED FOR DEVELOPMENT PERMIT |     |             | 2024 04 15 |    |    |    |
| 1      | ISSUED FOR DEVELOPMENT PERMIT |     |             | 2024 03 06 |    |    |    |

**J.E. ANDERSON & ASSOCIATES**  
SURVEYORS - ENGINEERS

VICTORIA NANAIMO PARKVILLE CAMPBELL RIVER  
#140411 SHENTON ROAD NANAIMO, BC V9T 2H1  
PHONE: 250-754-8311 EMAIL: ronan@jeanderson.ca WEB: www.jeanderson.ca

|                |  |
|----------------|--|
| JURISDICTION   | TOWN OF LADYSMITH  |
| CLIENT         | OAK BAY MARINE GROUP                                       |
| PROJECT        | LADYSMITH MARINE GROUP SHORELINE PEDESTRIAN PATH PLAN VIEW |
| ENGINEERS SEAL | MUN. ENG NUM   |

|                |              |
|----------------|--------------|
| MUN. FILE      | ---          |
| PROJECT        | 89596 02 SK2 |
| ENGINEERS SEAL | MUN. ENG NUM |
| SHEET          | 2 OF 3       |



PEDESTRIAN PATH PROFILE  
H 1:250  
V 1:50

- GENERAL NOTES**
1. PROFILE REPRESENTS PRELIMINARY DESIGN.
  2. EXISTING GROUND PROFILE REPRESENTS EXISTING GROUND AS OF JANUARY 2024.



|                   |  |
|-------------------|--|
| LEGAL DESCRIPTION | LOT B, PLAN EPP87265, DISTRICT LOT 66, OYSTER LAND DISTRICT, & D.L.'S 67 & 98, & D.L. 2054 COMICHAN DISTRICT |
| PROJECT DATUM     | ELEVATIONS ARE GEODETIC AND TO NAD83   |

| ISSUED |                               |            |          |
|--------|-------------------------------|------------|----------|
| NO.    | DESCRIPTION                   | DATE       | BY       |
| 4      | ISSUED FOR DEVELOPMENT PERMIT | 2024 04 15 |          |
| 1      | ISSUED FOR DEVELOPMENT PERMIT | 2024 03 06 |          |
| NO.    | DESCRIPTION                   | YYYY MM DD | DE DA CK |

| LEGEND             |      |
|--------------------|------|
| LAMP STANDARD      | W-LS |
| POLLE (hydr. Tel.) | W-PT |
| U/G WIRING         | W-UT |
| GAS                | W-G  |
| WATER              | W-W  |
| SEWER              | W-S  |
| DRAIN              | W-D  |
| CLEANOUT           | W-CO |
| CATCHBAG           | W-CB |
| MANHOLE            | W-MH |
| SERVICE RISER      | W-SR |
| MOUNTABLE CURB     | W-MC |
| NON-MOUNT. CURB    | W-NM |
| EDGE ASPHALT       | W-EA |
| DITCH              | W-DI |
| METER              | W-ME |
| FLUSH VALVE        | W-FV |
| VALVE              | W-VL |
| REDUCER            | W-RE |
| HYDRANT            | W-HY |
| AIR VALVE          | W-AV |

**JEA** J.E. ANDERSON & ASSOCIATES SURVEYORS - ENGINEERS

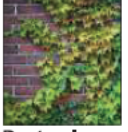
VICTORIA NANAIMO PARKINLE CAMPBELL RIVER

#140411 SHENTON ROAD NANAIMO, B.C. V9T 2H1

PHONE: 250-754-4831 EMAIL: nanaimo@jeaengineers.com WEB: www.jeaengineers.com

|                |   |
|----------------|---|
| JURISDICTION   | TOWN OF LADYSMITH   |
| CLIENT         | OAK BAY MARINE GROUP  |
| PROJECT        | LADYSMITH MARINE GROUP SHORELINE PEDESTRIAN PATH PROFILE VIEW |
| ENGINEERS SEAL | MUN. DNG NUM --- SK3 SHEET 3 OF 3                             |

**PLANTS FOR WALKWAY (AREA #1)**



Boston Ivy on Electrical Building



Snowberry



Maiden Grass



Blue Oat Grass

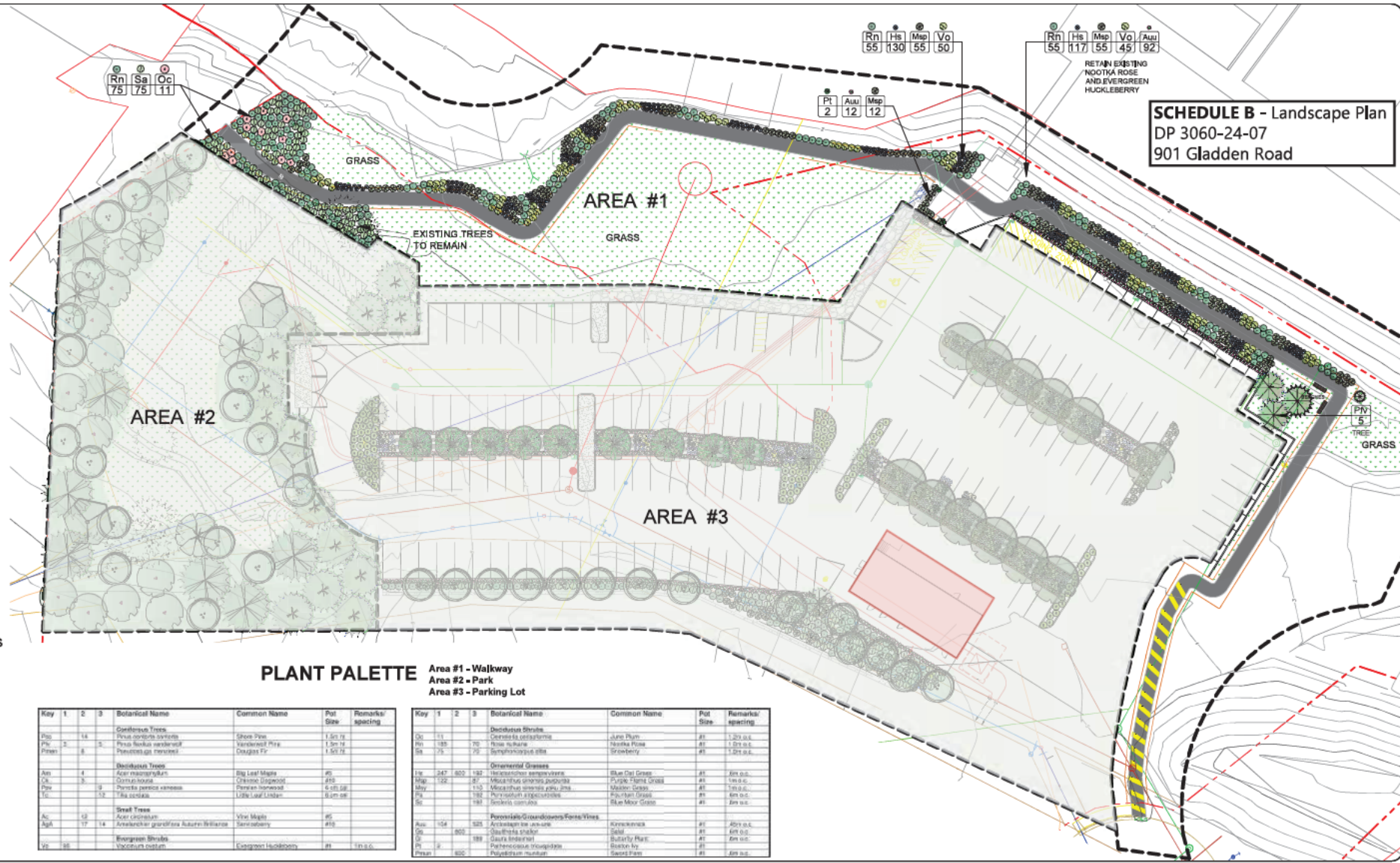


Nootka Rose



Kinnikinnick

**SCHEDULE B - Landscape Plan**  
 DP 3060-24-07  
 901 Gladden Road



**PLANT PALETTE**  
 Area #1 - Walkway  
 Area #2 - Park  
 Area #3 - Parking Lot

| Key                    | 1  | 2  | 3 | Botanical Name                  | Common Name      | Pot Size    | Remarks/spacing |
|------------------------|----|----|---|---------------------------------|------------------|-------------|-----------------|
| Shr                    | 14 |    |   | <i>Sparganium angustifolium</i> | Shore Pine       | 1.5m x 1.5m |                 |
| Plt                    | 3  | 5  |   | <i>Prunella americana</i>       | Wildflower Pring | 1.5m x 1.5m |                 |
| Shr                    | 6  |    |   | <i>Salix caprea</i>             | Cowslip Tree     | 1.5m x 1.5m |                 |
| <b>Deciduous Trees</b> |    |    |   |                                 |                  |             |                 |
| Am                     | 4  |    |   | <i>Acer macrocarpum</i>         | Big Leaf Maple   | #1          | 4m o.c.         |
| Tr                     | 3  |    |   | <i>Quercus laevis</i>           | Chickory Logwood | #1          | 4m o.c.         |
| Plt                    | 2  |    |   | <i>Prunella americana</i>       | Prunella         | 4.5m x 4.5m |                 |
| Tr                     | 12 |    |   | <i>Liriodendron tulipifera</i>  | Loblolly Linden  | 6.0m x 6.0m |                 |
| <b>Small Trees</b>     |    |    |   |                                 |                  |             |                 |
| Am                     | 13 |    |   | <i>Acer circinnatum</i>         | Wing Maple       | #1          | 4m o.c.         |
| Shr                    | 17 | 14 |   | <i>Amelanchier canadensis</i>   | Shadbush         | #1          | 4m o.c.         |
| Plt                    | 20 |    |   | <i>Evonymus alatum</i>          | Spicebush        | #1          | 4m o.c.         |

| Key                                  | 1   | 2   | 3   | Botanical Name                 | Common Name       | Pot Size | Remarks/spacing |
|--------------------------------------|-----|-----|-----|--------------------------------|-------------------|----------|-----------------|
| Shr                                  | 11  |     |     | <i>Desmodium illinoense</i>    | June Plant        | #1       | 1.2m o.c.       |
| Plt                                  | 185 | 70  |     | <i>Rosa rugosa</i>             | Norfolk Rose      | #1       | 1.5m o.c.       |
| Shr                                  | 25  | 20  |     | <i>Spiraea alba</i>            | Spirea            | #1       | 1.5m o.c.       |
| <b>Ornamental Grasses</b>            |     |     |     |                                |                   |          |                 |
| Tr                                   | 247 | 600 | 180 | <i>Hieracium angustifolium</i> | Blue Oat Grass    | #1       | 4m o.c.         |
| Plt                                  | 152 | 80  |     | <i>Miscanthus sinensis</i>     | Purple Stem Grass | #1       | 4m o.c.         |
| Shr                                  | 150 | 150 |     | <i>Miscanthus sinensis</i>     | Miscanthus Grass  | #1       | 4m o.c.         |
| Plt                                  | 180 |     |     | <i>Parthenocissus vitacea</i>  | Parthenocissus    | #1       | 4m o.c.         |
| Shr                                  | 180 |     |     | <i>Sedum spectabile</i>        | Red Brick         | #1       | 4m o.c.         |
| <b>Perennials/Ornamental Grasses</b> |     |     |     |                                |                   |          |                 |
| Shr                                  | 104 | 600 | 600 | <i>Asplenium platyneuron</i>   | Kinnikinnick      | #1       | 4m o.c.         |
| Shr                                  | 800 |     |     | <i>Salix alba</i>              | Salix             | #1       | 4m o.c.         |
| Plt                                  | 2   | 180 |     | <i>Quercus laevis</i>          | Chickory Logwood  | #1       | 4m o.c.         |
| Plt                                  | 2   |     |     | <i>Prunella americana</i>      | Prunella          | #1       | 4m o.c.         |
| Plt                                  | 600 |     |     | <i>Parthenocissus vitacea</i>  | Parthenocissus    | #1       | 4m o.c.         |

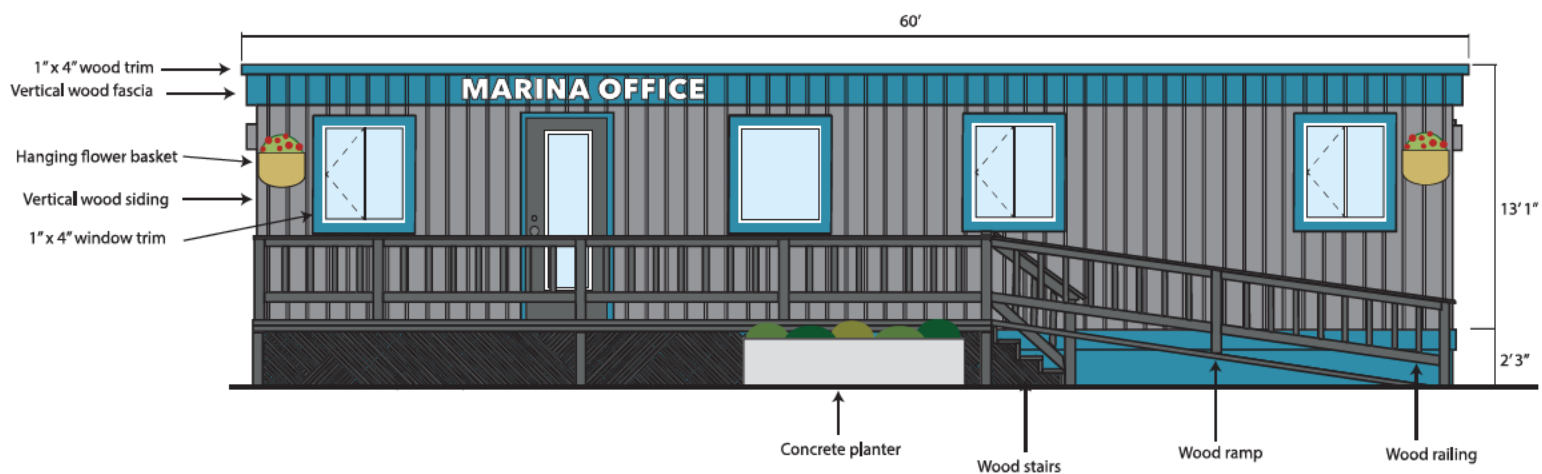
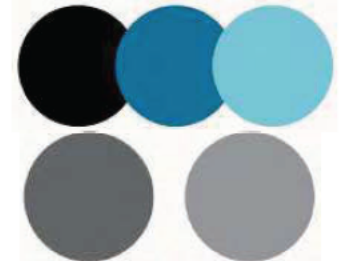
**NOTES:**  
 ALL GRADES APPROXIMATE;  
 TO BE COORDINATED WITH  
 CIVIL.



| CONSULTANT: | REVISIONS:                      |
|-------------|---------------------------------|
|             | Issued for DIP Review-2024Mar11 |
|             |                                 |
|             |                                 |
|             |                                 |
|             |                                 |

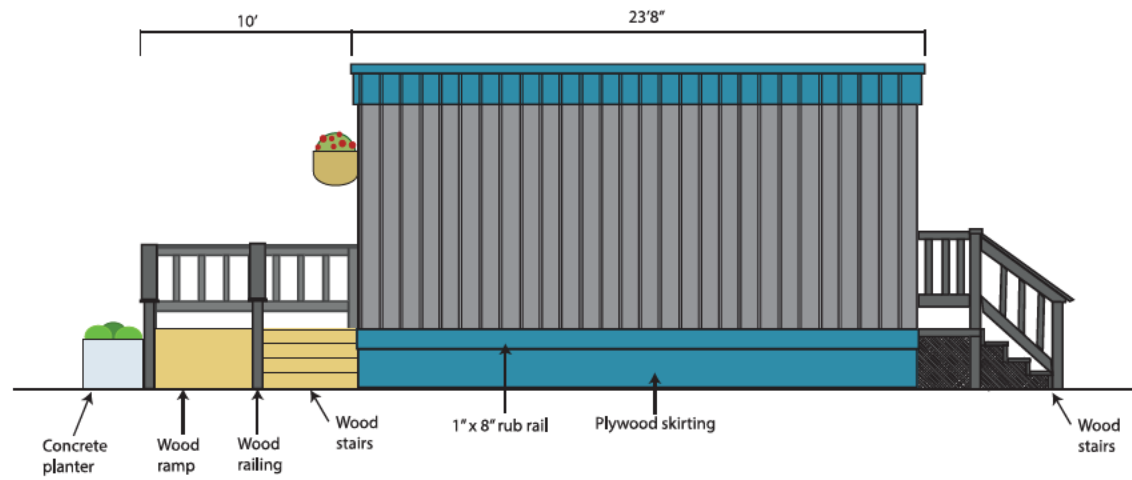
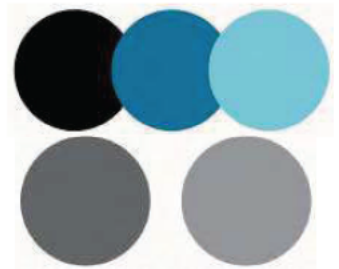
|  |   |  |   |                             |
|--|---|--|---|-----------------------------|
| <b>SITE LEGAL DESCRIPTION:</b><br>LOT B, PLAN EPP87265, DISTRICT LOT 86, OYSTER LAND DISTRICT, & DL'S 87 & 98, & DL 2054 COWICHAN DISTRICT | <b>PROJECT:</b><br>LADYSMITH MARINA PARKING LOT EXPANSION | <b>SHEET TITLE:</b><br>LANDSCAPE PLANTING PLAN AREA #1 | <b>SCALE:</b><br>1:250                          | <b>DATE:</b><br>Mar, 9 2024 |
|  |   |  | <b>DRAWN:</b><br>DP                             | <b>CHECKED:</b><br>VJD      |
|  |   |  | <b>PROJECT NUMBER:</b><br>LADYSMITH MARINA 2024 |                             |
|  |   |  | <b>DRAWING NUMBER:</b><br>L1.1/DP               |                             |
|  |   |  | <b>MUN. DWG#:</b>                               |                             |

**SCHEDULE C - Office Elevations**  
 DP 3060-24-07  
 901 Gladden Road  
 3 Pages



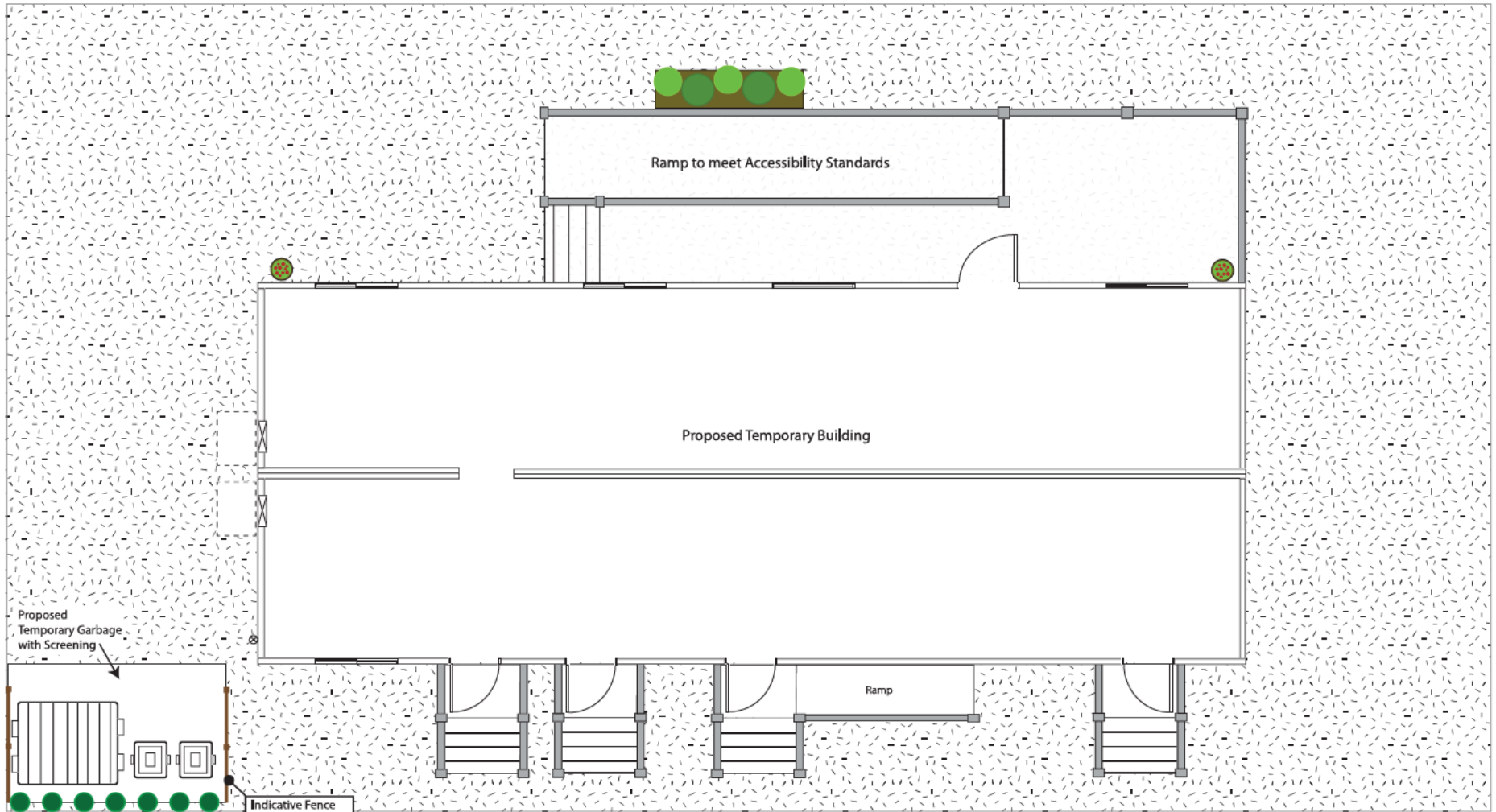
Front Elevation  
 Scale: 1:75





Side Elevation  
Scale: 1:75





**Site Plan**  
**Scale: 1:75**



STRONGITHARM CONSULTING LTD.

April 22, 2024

Mayor Aaron Stone and Council  
Town of Ladysmith  
410 Esplanade  
Ladysmith, BC V9G 1A2

Sent via email

**RE: Ladysmith Marina Development Permit Application (901 Gladden Road)**

Dear Mayor Stone:

We are pleased to submit a Development Permit application to accommodate ongoing improvements to Ladysmith Marina. This is an interim permit that will allow for:

- Construction of a pedestrian walkway along the waterfront of Ladysmith Marina,
- Grading to the marina parking lot with temporary gravel; and,
- Installation of a new temporary marina office with washrooms and showers.

An application is currently before the Town to create 2 additional service-industrial lots along Rocky Creek Road. A Preliminary Layout Approval (PLA) has been issued for the subdivision and the waterfront pedestrian walkway is a condition of the PLA.

Submitted with this letter are: (1) a grading plan and construction drawings including cross sections from the marina's civil engineers, (2) a landscape plan for the pedestrian walkway, and (3) floor plans and elevations for a new temporary marina office.

**Application Overview**

A final plan will be submitted to the Town that includes a new permanent marina office, located near the marina's dock entrance, and a paved parking lot complete with landscaping, new ornamental parking lot lighting, stormwater catch-basins and oil interceptors.

The permanent marina office will be located on what is now Crown Land that is leased to Oak Bay Marina Ltd. It will take some time to complete the approvals and tenure process needed for construction. This interim application allows for the parking lot grading to be completed and installation of underground services and the pedestrian walkway.

**Pedestrian Walkway**

The pedestrian walkway will connect Gladden Road with the new development by Rocky Creek Ventures, now under construction, to the north, connecting along the waterfront.



The pathway will conform to Town standards, with a 3 m wide statutory right-of-way (SRW) and 2 m wide hard surface walkway. The walkway has been designed by the marina's civil engineers to minimize changes in elevation from the water's edge to the top of the bank as it approaches the northerly property line and connection with Rocky Creek Ventures improvements.

The landscaping of the walkway has been designed by Victoria Drakeford Landscape Architect and will provide a continuous planting ribbon that extends along the walkway. To the east, the path threads through planting areas which softens the riprap edge on the water side and provides separation from the parking lot to the south. To the west, the planting provides an edge to the path where adjacent slopes are steeper. The planting palette is mostly comprised of native plants, providing continuity with the surrounding landscapes. The landscape plan is attached in Appendix A.

In addition to providing everchanging seasonal interest along the walkway, the plants will provide habitat for birds and insects. The selected plants, noted on the walkway landscape plan, are drought resistant and once established will need little water and relatively little maintenance.

### **Civil Engineering Plans**

JE Anderson Civil Engineers have prepared a grading and servicing plan that is sequenced with the long-term strategy for a future marina building with ancillary services, a landscaped, paved parking lot and a new recycle/refuge containment area. The current grading plans will prepare the site for future paving and surplus material from the grading will be left on site. A temporary parking layout has been designed, providing significant improvement over the existing conditions. The civil engineering plans are attached in Appendix B.

### **Temporary Marina Office Plans**

A new temporary marina office will be located near the main entrance into the marina on Gladden Road. The temporary building will accommodate a customer entrance area, front desk, and marina office space for staff and a boat-broker. Washroom and laundry facilities will be available at the rear of the building. At the front, an entrance deck is planned that provides access to the office and is a convenient place for customers to sit outside. The exterior cladding is vertical wood paneling with a strong horizontal fascia and wood trim around the windows. The colour-palette will match the marina's theme colours of blue, grey and off-white. Brackets for hanging flowers are featured at the ends of the building. The temporary building plans are attached in Appendix C.

### **Environmental Impact Assessment**

This Development Permit application does not contain any environmental impacts. All work is being applied to previously disturbed areas and proposed landscaping measures will in fact improve the environmental characteristics of the site. None of the site area qualifies as a "hazardous area".

**Closing**

We respectfully ask for Council's favourable consideration to this request for Development Permit that will allow Ladysmith Marina to continue to improve its upland facilities and to prepare for a final future phase that will include a new permanent marina office and paved parking area with landscaping for customers and guests.

Yours truly,

A handwritten signature in black ink, appearing to read "Deane Strongitharm". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Deane Strongitharm, MCIP, RPP

cc. Brook Castelsky, Oak Bay Marina Ltd.  
Jeff McKay, Oak Bay Marina Ltd.  
Geoff Dean, J. E. Anderson  
Victoria Drakeford, Victoria Drakeford Landscape Architect

attach.  
Development Application Forms  
Title  
Landscape Plans  
Civil Engineering Plans  
Temporary Building Plans

**Minutes of the Parks, Recreation & Culture Advisory Committee  
Wednesday, September 18, 2024 at 7:00pm  
Frank Jameson Community Centre**

---

**COMMITTEE MEMBERS PRESENT:**

Colleen Butcher  
Gordon Filewych  
Mitchel Lowe  
Bruce Mason

Kim Nakahara  
Councillor Duck Paterson  
Terri Merritt-Worden

**STAFF PRESENT:**

Chris Barfoot, Lead  
Kim Cheang, Minute Taker

**REGRETS:**

Jacqueline Huard  
Jane Nettleton  
Pamela Walker

---

**CALL TO ORDER AND  
ACKNOWLEDGEMENT**

C. Barfoot called the meeting to order at 7:00pm and acknowledged with gratitude that the meeting was taking place on the unceded territory of the Stz'uminus First Nation.

**AGENDA**

2024-15:  
That the Parks, Recreation & Culture Advisory Committee approve the agenda for the meeting as presented.  
*Motion Carried.*

**MINUTES**

2024-16:  
That the Parks, Recreation & Culture Advisory Committee approve the minutes of the May 15, 2024 meeting as presented.  
*Motion Carried*

**NEW BUSINESS**

New Members Welcome  
Introductions of new members and returning members.

Election of Chair

2024-17:  
That the Parks Recreation & Culture Advisory Committee appoint K. Nakahara as Chair.  
*Motion Carried*

**OLD BUSINESS**

Rutti Park Plan Open House Survey Update

- The Committee reviewed and discussed the survey results.
- Next meeting, staff will provide a map, key park elements, a summary of emerging themes and priority phases of the park plan.

**PRC DEPARTMENT  
UPDATE**

PRC Department Update

C. Barfoot provided updates on Recreation, Facilities, Administration, and Projects (current & upcoming).

**NEXT MEETING**

7:00pm on Wednesday, October 16, 2024 at FJCC

**ADJOURNMENT**

2024-18:

That the Parks, Recreation & Culture Advisory Committee adjourn this meeting at 8:25pm.

*Motion Carried*

DRAFT

**MINUTES OF THE ACCESSIBILITY ADVISORY COMMITTEE  
WEDNESDAY, SEPTEMBER 25, 2024  
COUNCIL CHAMBERS, CITY HALL**

---

**MEMBERS PRESENT**

Diane Hobelaid, Chair  
Councillor Amanda Jacobson  
Joel Helland (*via Zoom*)  
Jordan Herbison (*via Zoom*)

Andy Hobelaid  
Shaun McKenzie (*via Zoom*)  
Christina Stephen

**STAFF PRESENT**

Sue Bouma (Manager of Corporate Services)  
Richard Frost (Manager of Facility Operations)

Nick Pescod (Communications & Engagement Specialist)

---

**CALL TO ORDER AND  
ACKNOWLEDGEMENT**

Ms. Hobelaid, Chair, called the Accessibility Advisory Committee meeting to order at 7:08 p.m., recognizing with gratitude that it was taking place on the unceded territory of the Stz'uminus First Nation.

**AGENDA APPROVAL**

*Moved and seconded:*  
That the agenda for the September 25, 2024 meeting of the Accessibility Advisory Committee be approved as presented.  
*Motion carried.*

**MINUTES APPROVAL**

*Moved and seconded:*  
That the minutes of the May 22, 2024 Accessibility Advisory Committee meeting be approved.  
*Motion carried.*

**UNIVERSAL DESIGN  
PRINCIPLES**

Diane Hobelaid, Chair, provided background information and a link to the Universal Design Principles from the Centre for Excellence and asked that the document be added as an addendum to the Accessibility Plan.

**ACCESSIBILITY PLAN  
FRAMEWORK FOR  
REVIEW**

The Committee agreed to bring suggestions regarding the Accessibility Plan framework to the next meeting, including recommendations to add, delete, rename or reorganize anything within the document.

**MANAGER OF  
FACILITY  
OPERATIONS**

Richard Frost, Manager of Facility Operations, reviewed recently completed accessibility upgrades, such as the installation of an automatic door opener from the everyone change room to the pool deck and the replacement of push buttons on other automatic door openers with more accessible push plates. Moveable signage was

also incorporated at FJCC during peak times to ensure maximum adaptable parking spaces are available. He noted that the application of contrasting paint colours to improve visibility on stair treads and nosings is ongoing. Future upgrades will include some braille signage and flashing lights at exits.

**GRANT  
OPPORTUNITY**

Councillor Jacobson brought forward an accessibility grant opportunity from Sparc BC. Some suggestions for potential projects included improving sidewalk entry points, adding automatic door openers to the downtown washrooms, creating a pathway to the Kinsmen Shelter at Transfer Beach, improving the lower parking lot at FJCC to increase accessibility, adding more braille and tactile signage to key areas in the Town and adding grab bars and folding down chairs in the changerooms at FJCC. The Committee was asked to send additional project suggestions to Richard Frost.

**NEXT MEETING**

The Committee agreed to meet electronically for its next meeting on October 30, 2024.

**ADJOURNMENT**

*Moved and seconded:*  
That this Accessibility Advisory Committee Meeting be adjourned at 8:10 p.m.  
*Motion carried.*

RECEIVED:

---

Diane Hobelaid  
Chair

---

Sue Bouma  
Corporate Officer

## STAFF REPORT TO COUNCIL

**Report Prepared By:** Ryan Bouma, P. Eng.  
**Reviewed By:** Allison McCarrick, CAO  
**Meeting Date:** October 1, 2024  
**File No:**  
**Re:** 2nd Avenue Geotechnical Findings

---

**RECOMMENDATION:**

That Council direct staff to monitor the slope on 2<sup>nd</sup> Avenue between Symonds Street and French Street, and document findings until an opportunity arises to combine the required remediation work with utility upgrades and/or development in the area.

**EXECUTIVE SUMMARY:**

Following a competitive Request for Proposal process, staff hired McElhanney Ltd. to carry out a subsurface assessment of 2<sup>nd</sup> Avenue, between Symonds Street and French Street, and provide findings and recommendations for remediation. The report is attached. In general, the cost of the recommended work is not justified by the risk reduction relative to other capital needs within the Town.

**PREVIOUS COUNCIL DIRECTION:**

N/A

**INTRODUCTION/BACKGROUND:**

The pavement surface along 2<sup>nd</sup> Avenue has been deteriorating and a geotechnical assessment has been on the capital plan for several years. Following heavy precipitation last winter, a small area of the slope below the road slid, including some retaining structure. Upon discovery of the slide, staff initiated the assessment and issued an RFP to find a geotechnical engineer to complete the work.

As part of the geotechnical assessment the Geotechnical Engineer:

- reviewed the area;
- reviewed background information;
- documented four boreholes and three test pits in the area;
- tested soil samples;
- developed a slope stability model;
- analyzed various remediation options; and
- provided recommendations and cost estimates related to the remediation options.

Staff agree with the primary Geotechnical Assessment report recommendation, that a mechanically stabilized earth retaining wall in the lower portion of the road between Symonds and Warren is the best method to stabilize the slope and mitigate further settlement and distortion of pavement on 2<sup>nd</sup> Avenue. In the provided Class C estimate, the cost of full remediation is over \$2.2 million due to the additional costs of replacing utilities in the area.

When staff reviewed various capital plans, such as water, wastewater, stormwater, and pavement priorities (capital needs outside of Infrastructure Services were not reviewed), this project did not meet the required threshold to continue developing a design and eventual construction. As an alternative, staff recommend completing regular reviews of the surface conditions and documenting changes while waiting for an opportunity to combine the required work with utility upgrades and/or development in the area.

The report also provided relatively low-cost methods of monitoring the slope stability such as using inclinometers. Although this work would allow staff and the Geotechnical Engineer to review the stability at a very detailed level, staff don't believe this level of detail is required for 2<sup>nd</sup> Avenue. Regular documented inspections completed by staff, with notes and photographs, should be sufficient.

Staff note that in the event of an earthquake or further slope failure, the northwest-bound lane may slide, and staff may need to limit travel along this portion of 2<sup>nd</sup> Avenue to one-way only. The direction of travel would likely be northwest-bound in order to allow drivers to use the relatively angled driveway accesses in the area. One-way travel would not be ideal but would give staff time to find solutions and make repairs.

**ALTERNATIVES:**

Council can choose to:

1. Direct staff to proceed with further design and cost estimation for a mechanically stabilized earth retaining wall;
2. Direct staff to proceed with installation of testing equipment including inclinometers; or
3. Request further information.

**FINANCIAL IMPLICATIONS:**

Assessment and remediation of 2<sup>nd</sup> Avenue would come from general revenue. A \$2.25 million remediation program would cause other capital projects to be delayed.

**LEGAL IMPLICATIONS:**

N/A

**CITIZEN/PUBLIC RELATIONS IMPLICATIONS:**

Although the pavement condition along 2<sup>nd</sup> Avenue is poor, driving speeds and usage is low. Complaints from the public have not been received.



**INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS:**

N/A

**ALIGNMENT WITH STRATEGIC PRIORITIES:**

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Core Infrastructure         | <input type="checkbox"/> Economy        |
| <input type="checkbox"/> Official Community Plan Implementation | <input type="checkbox"/> Leadership     |
| <input type="checkbox"/> Waterfront Area Plan                   | <input type="checkbox"/> Not Applicable |

*I approve the report and recommendation.*

**Allison McCarrick, Chief Administrative Officer**

**ATTACHMENT:**

- A. 2<sup>nd</sup> Avenue Slope Stability – Geotechnical Assessment Report



**McElhanney**



Platinum member



**Town of Ladysmith**

August 28, 2024 | Revision 0

**2<sup>nd</sup> Avenue Slope Stability**

---

Submitted to: Town of Ladysmith  
Prepared by McElhanney

**Geotechnical Assessment  
Report**

**Contact**

Christopher Fernandez, P.Eng., M.Sc.  
Geotechnical Engineer  
[cfernandez@mcelhanney.com](mailto:cfernandez@mcelhanney.com)

**Address**

1 – 1351 Estevan Road,  
Nanaimo BC Canada  
V9S 3Y3

# Your Challenge. Our Passion.

Our File: 2231-38903-01

August 28, 2024

Town of Ladysmith  
330 6<sup>th</sup> Avenue  
Ladysmith, BC V9G 1A2

Attention: Ryan Bouma, P.Eng.  
Director of Infrastructure Services

## 2<sup>nd</sup> Avenue Slope Stability – Geotechnical Assessment Report

### Symonds Street to Buller Street

In accordance with our proposal for the 2<sup>nd</sup> Avenue Slope Stability – Geotechnical Proposal, dated April 4, 2024, we are please to submit our geotechnical assessment report for your use. This report focuses on the geotechnical recommendations for the slope on the downhill side of 2<sup>nd</sup> Avenue between Symonds Street and Buller Street in Ladysmith, BC.

We trust that this information is sufficient to your present needs. Should you have any questions or require additional information, please contact us at your convenience.

Sincerely,

Prepared by:



Christopher Fernandez, M.Sc, P.Eng.

[CFernandez@mcelhanney.com](mailto:CFernandez@mcelhanney.com)

250 716 3336

## Contents

|                   |   |           |
|-------------------|---|-----------|
| <b>1.</b>         | <b>Introduction .....</b>                   | <b>1</b>  |
| <b>2.</b>         | <b>Background .....</b>                     | <b>1</b>  |
| <b>3.</b>         | <b>Methodology .....</b>                    | <b>2</b>  |
| 3.1.              | Scope of work .....                         | 2         |
| 3.2.              | Desktop Study .....                         | 3         |
| 3.3.              | Field Investigation .....                   | 3         |
| 3.4.              | Laboratory Testing .....                    | 4         |
| <b>4.</b>         | <b>Site Conditions .....</b>                | <b>4</b>  |
| 4.1.              | Surface Conditions .....                    | 4         |
| 4.2.              | Geological Setting .....                    | 6         |
| 4.3.              | SubSurface Conditions .....                 | 6         |
| 4.4.              | Groundwater conditions .....                | 8         |
| 4.5.              | Seismic Setting .....                       | 8         |
| <b>5.</b>         | <b>Slope Stability Assessment .....</b>     | <b>9</b>  |
| 5.1.              | Causes of Instability .....                 | 9         |
| 5.2.              | Slope Stability Models .....                | 12        |
| <b>6.</b>         | <b>Discussion and Recommendations .....</b> | <b>14</b> |
| <b>7.</b>         | <b>Closure .....</b>                        | <b>19</b> |
| <b>Appendix A</b> |   |           |
| <b>Appendix B</b> |   |           |
| <b>Appendix C</b> |   |           |
| <b>Appendix D</b> |   |           |
| <b>Appendix E</b> |   |           |
| <b>Appendix F</b> |   |           |
| <b>Appendix G</b> |   |           |



## 1. Introduction

McElhanney Ltd. (McElhanney) was retained by the Town of Ladysmith (the Client) to conduct a geotechnical investigation and prepare this report to provide a summary of the geotechnical assessment and recommendations for the slope below and to the northeast of 2<sup>nd</sup> Avenue in Ladysmith, BC. The site location is shown approximately below on **Figure 1**.

*Figure 1: Site Location – (Image taken from RFP Addendum #1)*



The results of the geotechnical assessment, analysis, as well as recommendations on geotechnical aspects of remediation of the slope are provided in this report.

The work has been conducted in accordance with McElhanney's proposal dated April 4, 2024, that was prepared in response to the Town of Ladysmith's RFP 32024-IS-01 dated March 4, 2024. Authorization to proceed was provided by Ryan Bouma via signed Client agreement on April 19, 2024.

## 2. Background

The 2<sup>nd</sup> Avenue slope that is the subject of this study is located on the northeast side of 2<sup>nd</sup> Avenue between Symonds Street and Buller Street.

During Winter 2023-2024, some tumbling and sloughing of a stacked rock retaining wall near the low side of the slope in the vicinity of Warren Street occurred, which prompted the Town of Ladysmith to investigate the slopes and consider options for remediation of the slope. When considering this

assessment, the Town of Ladysmith indicated that the road does not need to remain functional after a seismic event.

The northern end of the study area suggests other historic sloughing may have occurred and indicates there has been some movement over time. The downslope traffic lane of 2<sup>nd</sup> Avenue roadway has experienced considerable settlement (approximately 100 mm) over time and appears at times to have been repaired. E.g. by crack sealing.

The southern end of the study area has not experienced any observable slope movement; however, the downslope side of the road does appear to be supported by timbers, which are prone to deteriorate with time and may be at varied states of deterioration.

### 3. Methodology

The proposed scope of work was aimed at improving understanding of the ground conditions at the top and bottom of the slope as well as the groundwater conditions within the slope. From there, drivers of instability in the slope can be assessed and options provided for remediation of the slope.

#### 3.1. SCOPE OF WORK

To prepare this geotechnical assessment, McElhanney;

- Completed a preliminary site walkover on March 15, 2024 to aid in preparation of a proposal.
- Undertook a geotechnical desktop study to review available information.
- Completed a geotechnical investigation including utility clearance, one day of borehole drilling and one day of test pitting.
- Collected samples for index laboratory testing.
- Reviewed the geotechnical information collected during the field program and desktop study.
- Undertook slope stability analysis using limit equilibrium methods in Geostudio Slope W software to review the performance of the existing slope.
- Developed options for remediation of the slope to meet the Town of Ladysmith's desired performance criteria.

Following these steps this geotechnical assessment report was prepared to include the following:

- Site geology.
- Site investigation location plan.



- Borehole and test pit logs with soil stratigraphy and groundwater observations.
- Laboratory test results.
- Characterisation of subsurface soil and groundwater conditions, including a section through the slope.
- Slope stability assessment of existing slope/stacked rock walls. Survey data was not provided for the slope, so geometry was interpreted from field measurements with a clinometer, publicly available lidar and other available information.
- Recommendations for remediation of the slope including conceptual sections of proposed solutions and a, Class “C” level cost estimates.

### 3.2. DESKTOP STUDY

In completing this geotechnical assessment, the following documents were reviewed:

- Aerial photos from UBC Archives for the years; 1942, 1952, 1958, 1962, 1968, 1972, 1976, 1980, 1984, 1988, 1993, 1998, 2005 and 2007.
- BCGov Air Photo Viewer photos for years; 1969, 1974, 1975, 1979, 1981, 1986, 1987, 1989 and 2014.
- Blyth, H.E., and Rutter, N.W., 1993. Surficial geology of the Duncan area (NTS 92B/13). British Columbia Ministry of Energy, Mines and Petroleum Resources, British Columbia Geological Survey Open File 1993-27, scale 1:50,000.
- Halstead, E.C., 1966. Surficial geology, Duncan, British Columbia. Geological Survey of Canada, Map 14-1965, scale 1:63,360.
- BC Well Records viewed July 4, 2024, <<https://apps.nrs.gov.bc.ca/gwells/>>, for nearby well tags:
  - [96062](#)
- Lidar BC digital elevation model for Map Grid 92B.091 downloaded July 11, 2024 <<https://lidar.gov.bc.ca/>>. Lidar data was acquired in 2019.

### 3.3. FIELD INVESTIGATION

The geotechnical investigation was undertaken on June 13 and June 14, 2024. Prior to advancing any test holes, the site was scanned for underground utilities and the test hole locations cleared using Ground Penetrating Radar (GPR) operated by Kelly's 1<sup>st</sup> Call Locating on May 28, 2024.





Four boreholes (4) and three (3) test pits were advanced during the geotechnical investigation. The boreholes were drilled on June 13, 2024 at various locations on 2<sup>nd</sup> Avenue using a Boart Longyear LS250 Sonic Drill Rig operated by Terratech Drilling Ltd.

The test pits were excavated on June 14, 2024, at the toe of the slope on the edge of the laneways, or in open space near the dead end on Warren Street, using a Cat 430 Backhoe operated by the Town of Ladysmith.

The test pit and borehole locations can be found on the location plan, **Sketch 1** included **Appendix A**, and detailed borehole and test pit logs are included in **Appendix B**.

The subsurface conditions encountered in each borehole were observed and recorded by a McElhanney representative. The soils observed in the field were classified in accordance with the Modified Unified Soil Classification System (MUSCS).

Following drilling of BH24-01, BH24-02 and BH24-04 a standpipe monitoring well was installed in each borehole with a 5 ft screen and sand filter pack backfilled to the surface where a bentonite plug was installed.

Following completion of the BH24-03 it was backfilled with drill cuttings. The test pits were backfilled with the excavated materials by the Town of Ladysmith.

### 3.4. LABORATORY TESTING

Upon completion of the field program, select soil samples were sent to McElhanney's material testing laboratory for index testing including moisture contents, Atterberg Limits and particle size distribution. The laboratory testing results are summarised on the borehole and test pit logs in **Appendix B** and the laboratory test reports are provided in **Appendix C**.

## 4. Site Conditions

### 4.1. SURFACE CONDITIONS

The 2<sup>nd</sup> Avenue site represents the steeper portion of a larger slope down from 4<sup>th</sup> Avenue to 1<sup>st</sup> Avenue in Ladysmith. As shown on the lidar images included in **Figure 2** and **Figure 3**. The slope is not parallel to the alignment of the Avenues, but slopes in multiple directions down from a crest identified in **Figure 3**.

The elevation change from 4<sup>th</sup> Avenue to 1<sup>st</sup> Avenue is approximately 43 m and the average slope gradient is 35% with slopes locally as steep as 170%.

The 2<sup>nd</sup> Avenue slope that is the target of this study is up to 9 m high and has a grade between 30% and 170% across in lengths. Some of the upper portions of this slope comprise near vertical sections with stacked logs and some of the lower portions are near vertical with a stacked rock retaining wall and these sections were measured at 150-170% grade from the available lidar data. Near BH24-02 and BH24-03 the slope is at an approximately 60 to 75% grade.



The slope is predominantly covered in vegetation with some larger trees in the slope towards its southern end. Aerial photography suggests that these trees may not have been on the slope prior to 1980.

There is a laneway/pathway access that runs along the toe of the slope, connecting Warren Street with 2nd Avenue for pedestrians. This laneway is a distinct black colour in the 1968 aerial photograph, which suggests that it was paved around that time.

It is difficult to determine from the aerial photography, but it appears that 2<sup>nd</sup> Avenue was first paved in the 1960's or 1970's. There are distinct cracks and steps in the current 2<sup>nd</sup> Avenue pavement as noted on **Sketch 1 in Appendix A**. These steps were observed to be up to 100 mm in magnitude. BH24-02 and BH24-03 drilled on either side of one of these cracks.

*Figure 2: Hillshade of BC Lidar Portal with annotations.*

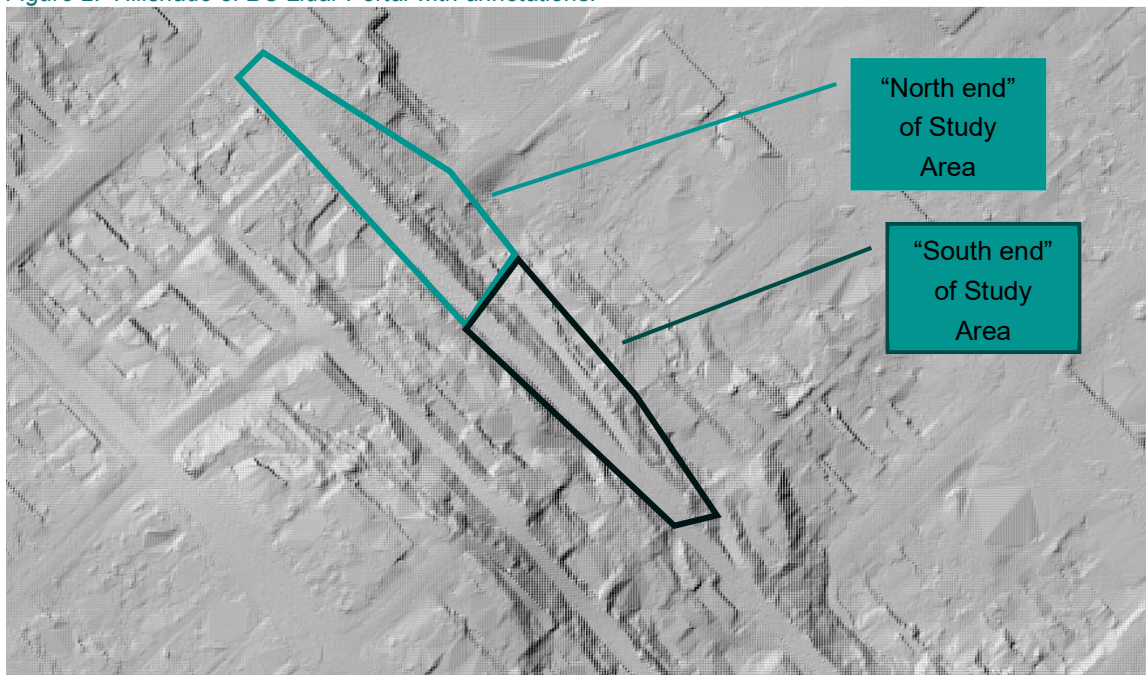
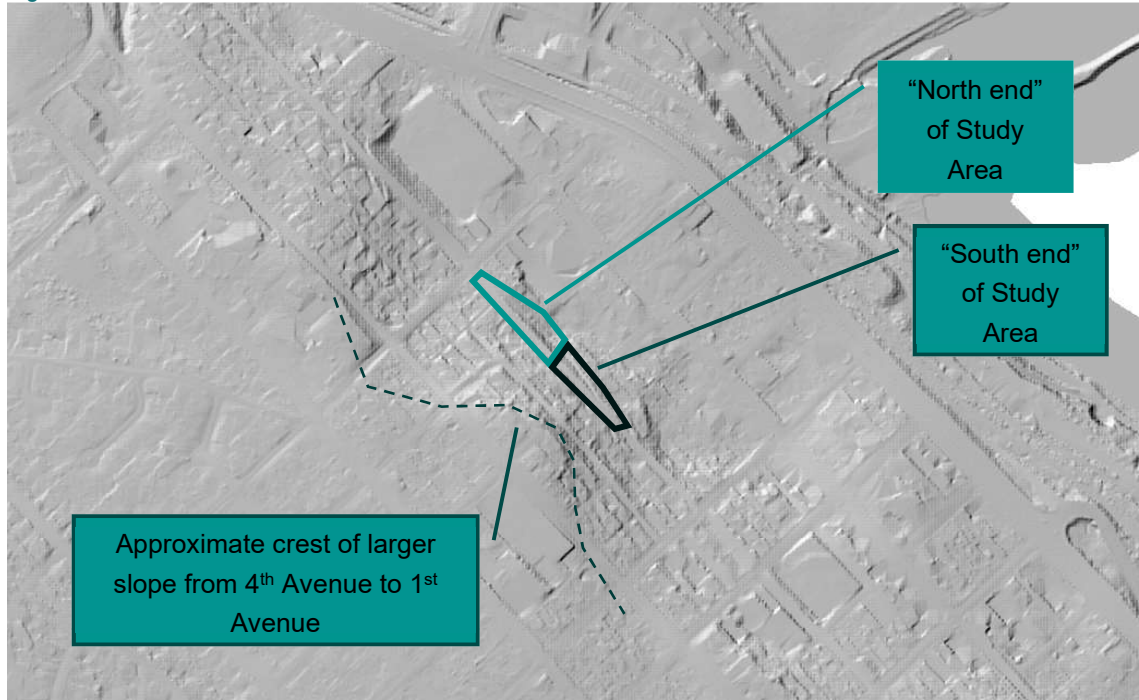


Figure 3: Hillshade of BC Lidar Portal with annotations.



## 4.2. GEOLOGICAL SETTING

Geological mapping of the site suggest that it is underlain by marine deposits (including glacio-marine) comprising varied stony, loamy and clayey veneer material commonly less than 5ft thick overlying ground moraine deposits comprising till with lenses of gravel, sand and silt.

This is consistent with the nearest well record for well tag number 96062 located approximately 300 m northwest of the site, which indicated cemented gravels and sand were encountered in the well.

## 4.3. SUBSURFACE CONDITIONS

The subsurface conditions encountered in the test holes were consistent with the geological mapping. Some fill materials were observed in the boreholes at the top of the slope and in the test pits near the bottom of the slope. The encountered subsurface conditions are summarized in **Table 4-1**. Detailed logs of the test holes are included in **Appendix B**.

**Table 4-1: Summary of Subsurface Conditions**

| Unit                      | Observed thicknesses (m) | Description  |
|---------------------------|--------------------------|--|
| <b>Pavement – Asphalt</b> | 0.05 to 0.1              | Asphalt.<br><br>100 mm observed at BH24-01, BH24-03, BH24-04.<br><br>50 mm at all other locations. |



| Unit                           | Observed thicknesses (m) | Description  |
|--------------------------------|--------------------------|--|
| <b>Pavement – Roadbase</b>     | 0.15 to 0.3              | Sand and gravel, trace fines, well graded, fine gravel (19 mm minus), angular, compact, grey. 150 mm thick in laneway. 250 mm to 300 mm thick on 2 <sup>nd</sup> Avenue.   |
| <b>Existing Fill</b>           | 0.3 to 2.6               | <p>SAND, Gravelly, silty, occasional cobbles rounded loose to compact, brown, grey, black.</p> <p>AND/OR</p> <p>SILT some sand, rootlets, poorly graded, soft, black.</p> <p>Upper portions of this may be subbase layer of existing pavement. Poor recovery of this soil during investigation.</p> <p>Not observed in BH24-04, although fill closer to slope crest supported by logs in slope is expected at this location.</p> |
| <b>Natural Sand and Gravel</b> | 0.5 to 2.4               | <p>Layers occur above and below Natural Silt.</p> <p>SAND silty, some gravel, poorly graded, coarse sand, rounded gravel, loose to compact, grey, mottled yellow, blue grey.</p> <p>GRAVEL, sandy, silty, poorly graded, rounded coarse gravel to 75 mm, loose to compact, yellow brown</p>  |
| <b>Natural Silt</b>            | 1.0 to 2.9               | <p>SILT, sandy, trace gravel, poorly graded, coarse to fine sand, coarse gravel, low plasticity.</p> <p>This is a possible weak layer. One Atterberg limit test completed suggest that this soil is at or near its liquid limit, however sonic drilling may have introduced more moisture to the sample.</p>   |
| <b>Till</b>                    | >0.2 to >7.65            | SAND, some silt, trace gravel, poorly graded, medium to coarse sand, very dense, mottled yellow to grey.   |



#### 4.4. GROUNDWATER CONDITIONS

Seepage was observed in all test pits. Seepage was not directly observed during drilling of the sonic boreholes because the drilling method introduces water into the borehole. Monitoring wells were installed in BH24-01, BH24-02 and BH24-04 and groundwater measurements were made the day after drilling on June 14, 2024 and on July 4, 2024. The groundwater level in the three monitoring wells and the test pits varied substantially and BH24-04 was notably dry on both measurement occasions. The groundwater observations are summarised in **Table 4-2**

In all site visits to date on March 15, 2024, May 28, 2024, June 13 and 14 2024, and July 5, 2024 seepage out of the slope and audible flow of water into drains along the laneway has been readily observed. Groundwater may fluctuate seasonally and with cycles of precipitation, particularly in the wetter months of the year in Ladysmith from September to April.

**Table 4-2: Subsurface Conditions**

| Location                       | Observation Date | Groundwater Depth (m) | Groundwater Level (m CGVD) |
|--------------------------------|------------------|-----------------------|----------------------------|
| <b>BH24-01 monitoring well</b> | June 14, 2024    | 6.37                  | 44.6                       |
|                                | July 4, 2024     | 6.59                  | 44.4                       |
| <b>BH24-02 monitoring well</b> | June 14, 2024    | 2.33                  | 47.6                       |
|                                | July 4, 2024     | 1.18                  | 48.7                       |
| <b>BH24-04 monitoring well</b> | June 14, 2024    | Not observed          |                            |
|                                | July 4, 2024     | Not observed          |                            |
| <b>TP24-01</b>                 | June 14, 2024    | 2.6                   | 42.6                       |
| <b>TP24-02</b>                 | June 14, 2024    | 2.5                   | 41.5                       |
| <b>TP24-03</b>                 | June 14, 2024    | 1.5                   | 44.2                       |

#### 4.5. SEISMIC SETTING

The site is in an area considered to be of high seismicity that can be impacted by earthquakes occurring along the Cascadia Subduction Zone (CSZ) to the west and crustal earthquakes closer to the site.

The design earthquakes for the 1 in 475 year or 10% in 50-year event considered in this assessment has a PGA of 0.328g. This peak ground acceleration is adopted for a Class C site from the 2020 National Building Code Seismic Hazard Calculation, attached in **Appendix D**.



## 5. Slope Stability Assessment

### 5.1. CAUSES OF INSTABILITY

The slopes on 2<sup>nd</sup> Avenue have shown signs of instability presented most clearly in the pronounced cracking along 2<sup>nd</sup> Avenue and also the recent failure of a portion of stacked rock wall near the base of the slope shown in **Figure 4** and **Figure 5** respectively.

*Figure 4: Crack in pavement*



*Figure 5: Failed Stacked Rock Retaining Wall*



The slope appears to have been constructed of variable undocumented fill materials, possibly at different times, with variable slope geometry and support methods (timbers, boulders, etc.). As such the cause of instability likely varies within the project area, which would require variable remediation plans. Abrupt changes in materials can occur in undocumented fill materials that may be missed with the relatively widely spaced boreholes of this assessment.

McElhanney hypothesise that the slope instability may be the result of any of several mechanisms, including:

- Groundwater pressure fluctuations and preferential subsurface flow patterns within weak and variable soils.
- Potentially weak silt layer.
- Undocumented fill.
- Over steepened existing conditions, e.g. steep stacked rock wall and steep undocumented fill slopes.
- Deteriorating organic components.

After reviewing the slope in the field and reviewing the available lidar data of the slope conditions in 2019, it appears that there are three distinctly different slope geometries and we have separated the slope into these three different zones, that roughly correspond the locations of BH24-01, BH24-02 and BH24-03 and BH24-04. These zones are summarised in **Table 5-1**.

A control line with stationing 0+000 to 0+390.23 has been set up running midblock between property boundaries on 2<sup>nd</sup> Avenue from the southeast side of Symonds Street to Buller Street, i.e. station 0+000 on the southeast side of Symonds Street as shown on **Sketch 1 in Appendix A**.

Table 5-1: Slope Zones

| ZONE | Sta. START | Sta. END | Test Locations | Slope Angles   | Slope Height (m) | Comments  |
|------|------------|----------|----------------|--|------------------|---|
| 1    | 0+060      | 0+095    | BH24-02        | Regular Slope at 30° to 37° from toe to crest.                         | 3.5 to 5         | Crack in road with pronounced step in this area.<br>Variable undocumented fills<br>Potentially weak silt layer present and below water level in well. Moisture content noted to be close to the liquid limit.<br>Seepage out of slope observed.<br>Vegetated with shrubs and bushes.  |
|      |            |          | BH24-03        |  |                  |   |
|      |            |          | TP24-03        |  |                  |   |
| 2    | 0+095      | 0+120    | BH24-01        | 55° to 60° lower portion with stacked rock wall.<br>45° upper portion. | 9                | Crack in road with minor step.<br>Failed stacked rock wall near toe of slope.<br>Variable undocumented fills<br>Potentially weak silt layer present.<br>Vegetation transitions from shrubs to bushes to some established trees.   |
|      |            |          | TP24-02        |  |                  |   |
| 3    | 0+120      | 0+210    | BH24-04        | 37° lower portion.<br>Upper 3 m 50° in lidar                           | 7.5              | Slope not showing signs of distress seen in Zones 1 and 2. Although some cracking in the pavement towards the Zone 2 end.<br>Steeper upper slope than lower slope.<br>Established trees.<br>BH24-04 profile suggests minimal filling and shallow glacial till at this location. Some fill may be present near slope crest where logs are supporting steep upper portion of slope. |
|      |            |          | TP24-01        |  |                  |   |



## 5.2. SLOPE STABILITY MODELS

### 5.2.1. Approach and Methodology

Analysis of the existing slope within Zones 1 and 2 identified in **Table 5-1** was completed to demonstrate the existing performance in a slope stability model.

Preliminary analysis of a 1H to 1V MSE slope option and a slope drainage option within Zone 1 and a 2H to 1V embankment option and a 1H to 1V MSE slope option within Zone 2 was also completed to explore the potential of these remediation options.

The overall static and seismic global stability of the embankment, and retaining wall options, relative to the encountered soil conditions were analyzed using the Slope/W component of GeoStudio 2023 by Geo-Slope International, Ltd. (1991, software version 23.1.2.11).

The geometry of the models has been adopted from representative sections for each zone. A surface of the site was prepared from limited survey of borehole locations and the publicly available lidar data. Sections of this surface were cut at 5 m intervals through the study area and appropriate sections were selected and modelled. The sections were compared with field measurements of the slope geometry to confirm accuracy of the geological model.

The analysis completed is preliminary in nature only, to provide an indication of the existing performance and determine the feasibility of the proposed options. A more detailed analysis should be completed of the preferred remediation option.

The ground conditions within the model were developed from the boreholes and test pits within each zone, and our understanding of the geological setting. The model that was assessed is shown in **Appendix E**.

### 5.2.2. Preliminary Design Criteria

To determine a suitable design criterion for the slope performance and potential slope widening options, McElhanney reviewed the Engineers and Geoscientists BC, (EGBC) "*Landslide assessments in British Columbia*", version 4.1, dated March 1, 2023.

The Town of Ladysmith does not consider the roadway to be a lifeline piece of infrastructure as alternative routes are readily available for the roadway (i.e. road lanes, bicycle lanes and sidewalks) and no habitable structures are on or immediately at the base of existing slope or proposed embankment / retaining wall options. McElhanney considers that some slope deformation within the 1 in 475 year seismic event is a suitable design criteria for global slope stability when considering the embankment slopes, their affects on the roadway, and downslope consequences. The design basis criteria are summarised in **Table 5-2**.

**Table 5-2: Design Basis Criteria Minimum Factor of Safety**

| REMEDIATION OPTION                                 | Design Condition             | Static Factor of Safety | Pseudo Static Analysis<br>1 in 475 year event |
|--|------------------------------|-------------------------|---|
| <b>2H to 1V embankment<br/>1H to 1V MSE Slopes</b> | Global Stability – Long Term | 1.5                     | 1.0*  |

Notes: \* Seismic slope displacements should be checked against limits provided in guidelines if Factor of Safety is lower than numbers provided in Table 5-2.

### 5.2.3. Material Parameters

The material parameters adopted for the analysis were estimated based on collected drilling information, experience with similar soils, and standard geotechnical best practice. These parameters are summarized in **Table 5-3**.

**Table 5-3: Mohr Coulomb Model Parameters.**

| UNIT                            | Friction Angle<br>(°) | Cohesion<br>(kPa) | Unit Weight<br>(kN/m <sup>3</sup> ) |
|---------------------------------|-----------------------|-------------------|-------------------------------------|
| Existing Fill                   | 28                    | 0                 | 19                                  |
| Natural Sand and Gravel – Loose | 30                    | 0                 | 19                                  |
| Natural Silt                    | 28                    | 0                 | 18                                  |
| Natural Sand and Gravel – Dense | 35                    | 0                 | 20                                  |
| Till                            | 20                    | 38                | 21                                  |
| Stacked Rock Retaining Wall     | 60                    | 0                 | 22                                  |
| Engineered Fill                 | 35                    | 0                 | 20                                  |

A piezometric surface was included in the models at the observed levels for existing conditions, and at the level of intended drainage layers in the remedial options modelled.

### 5.2.4. Analysis Results

The analysis results are summarised in **Table 5-4**. The global stability analysis results are provided in **Appendix E**.

**Table 5-4: Analysis Results**

| Zone          | Model               | Static | Pseudo Static - 1 in 475 years |
|---------------|---------------------|--------|--------------------------------|
| <b>Zone 1</b> | Existing Conditions | 0.993* | 0.521                          |
| <b>Zone 1</b> | Drained Slope       | 0.993* | 0.521                          |
| <b>Zone 1</b> | 1:1 MSE Slope       | 1.458  | 0.693                          |
| <b>Zone 2</b> | Existing Conditions | 0.892* | 0.581                          |
| <b>Zone 2</b> | 2H:1V Buttress      | 1.321  | 0.668                          |
| <b>Zone 2</b> | 1:1 MSE Slope       | 1.543  | 0.909**                        |

Notes: \* Lowest Factor of safety reported, but typically factor of safety of model >1.0. Two surfaces indicated a factor of safety less than 1.0  
 \*\* This would likely result in slope deformation in the 1 in 475 year seismic event.



The stability analyses indicates that the existing slope has a static factor of safety close to or slightly below 1.0, which supports a hypothesis that fluctuations in groundwater levels could result in slope movement.

The results indicate that it would be difficult to satisfy a seismic design criterion for the slope as the options analysed do not perform well in the 1 in 475-year seismic event for either section. More detailed analysis would probably indicate that expected seismic displacement for remedial options are within tolerable limits.

Of the remedial options analysed, the 1H to 1V MSE slope performs more closely with the performance criteria set out in Table 5-2 in both Zone 1 and 2, and it is likely this design could be refined to meet these criteria with more detailed analysis. The 2H to 1V buttress option would improve slope factor of safety in Zone 2, but does not fit in well geometrically and does not meet the criteria in Table 5-2. The dewatering option modelled for Zone 1 did improve the overall slope stability, however, it did not have an affect on the existing fill close to the surface which defined the lowest factor of safety in that model.

The models suggest that in Zone 2, the likely cause of slope instability is the poorly compacted fills, while in Zone 1, it is possible that a combination of a weak and saturated silt layer and poorly compacted fills are both causes of slope instability.

## 6. Discussion and Recommendations

Instability is present in the slope and there are several potential causes of this instability, and the cause may vary at different locations along the study section due to variation in the subsurface conditions and groundwater levels. The analysis completed suggests that poorly compacted and undocumented fills of variable composition are the primary cause of instability within the slope, along with locally over steep slope geometry and deteriorating and non-engineered slope retention of various types.

Options for remediation have been considered for Zones 1 and 2. They could be extended to Zone 3 to have a more complete project or if signs of slope instability appear in that zone, but no clear signs of instability there were indicated in this assessment. The options for remediation that have been considered are listed in **Table 6-1** in order of probability of success, from most likely to mitigate the slope issues to the least.

McElhanney considers the ideal remedial option for this slope particularly in Zones 1 and 2 would be to remove unsuitable materials and replace them with a mechanically stabilised earth slope or retaining wall solution that performs in accordance with current EGBC guidelines. This option is the first option listed in **Table 6-1** and has the highest probability of success, but would require both removal and replacement of the existing fill and the sub excavation below weak natural soils to a dense subgrade at the foundation of any retaining wall or slope.

The other options provided may improve our understanding of the slope instability but are likely to lead to the same conclusion that the unsuitable materials should be removed and replaced to a suitable subgrade.



A class C cost estimate for the first two options in **Table 6-1** has been completed and is included in **Appendix F**. The remaining estimates provided are high level based on McElhanneys' experience with similar projects and estimates from suppliers.



Table 6-1: Remedial Options

| OPTION                  | Description   | Pros   | Cons  | Estimated Cost   |
|-------------------------|---|--|---|--|
| <b>Full Remediation</b> | Remove and replace potentially weak layer of silt. Rebuild with a modern product e.g. Vegetated MSE slope facing with a 1:1 slope. Steeper options could also be explored that provide more space at the top or bottom of the wall. The intent of this option is to extend foundations to Till layers.  | Will provide mitigation to all observed stability issues.<br>Options to provide public space.<br>Options to improve utilities along 2 <sup>nd</sup> Avenue as part of the project. | High costs.<br>Loss of access during construction.<br>May require some shoring design on upslope side if close to utilities or other properties.  | \$2,224,286.40<br>(See Appendix F for further details) |
| <b>Buttress Slope</b>   | Flatten slope to nominally 2 horizontal to 1 vertical (H to V) or flatter by adding fill near the toe of slope. Could also include some cutting of the crest of the slope where space is restricted e.g. towards the southeast end of the site. May include reducing 2 <sup>nd</sup> Avenue to one lane.  | Reduced slope angle to lower likelihood of failures of slope face.<br>Provide additional support to toe of slope to lower likelihood of failures of slope toe.                     | Slope movement would still be expected due to variable subsurface materials.  | \$751,530.15<br>(See Appendix F for further details)   |
| <b>Drain Slope</b>      | If pore water pressures are the cause of instability in the slope then the installation of horizontal drains could be used to relieve poor pressures and restrict slope movement.<br>Expected to improve slope stability in Zone 1 where higher groundwater was observed. Could be used to help improve subgrade in conjunction with other options. | Potentially lower cost than the above options.<br>Limited works required.  | Not enough data to clearly identify pore pressure as the cause of slope distress.<br>Will not address steep portions of slope with logs and/or stacked rock walls.<br>May be difficult to install as it will require drilling into the slope.<br>May be difficult to dewater Silt layer due to elevations | \$200,000 to \$500,000                                 |

|  |  |  |   |   |  |
|--|--|--|---|---|--|
| <p><b>Observational Approach – High level of observation</b></p> | <p>Close Roadway or portions of roadway in response to slope movement and undertake some or all of the methods listed below for slope monitoring and investigation.</p>  | <p>Allows for a better understanding of the slope conditions before undertaking a remediation, with the aim of increasing the probability of success of the lesser expensive remediation options.</p>                    | <p>No change from current conditions. Not a final solution.</p>   | <p>Some slope movement may still occur due to variable and poor subsurface conditions.</p>                                    | <p>See costs for individual monitoring items below.</p>                                    |
|  | <p>Terrestrial survey monitoring, collect automated data of terrestrial slope movements, with automated trigger levels for alarming movements to monitor conditions of slope.</p>  | <p>Provides a picture of how the slope moves with time.<br/>Can provide warning for slope failures.</p>  | <p>No good location to mount an automated total station.<br/>Easily vandalised.<br/>Requires extensive installation.</p>  | <p>Installation cost: \$20,000<br/>Total station cost: \$100,000</p>  | <p>Some slope movement may still occur due to variable and poor subsurface conditions.</p> |
|  | <p>Inclinometer installation and monitoring. Slope inclinometers are installed in a borehole and can provide a clear picture on the layers within a slope that are experiencing deformation or movement. Can be automated to and set up with an alarm/ trigger to monitor conditions of slope.</p> | <p>Would provide a clear picture of slope movement layer at location of inclinometer.<br/>If monitored regularly can indicate if slope movement is ongoing.<br/>If automated can provide warning for slope failures.</p> | <p>Expensive to install.<br/>Requires regular measurements to provide data.<br/>Can be fully automated for greater initial cost.<br/>May indicate several different solutions are</p> | <p>\$10,000 per inclinometer.<br/>Installation.<br/>\$1500 per manual reading.<br/>\$20,000 per automated inclinometer on</p> |  |



|  |  |   |   |  |
|--|--|---|---|--|
|  | <p>More detailed monitoring of groundwater, including installation of instrumentation. Could be compared with slope monitoring to determine if groundwater fluctuations result in slope movements.</p> | <p>Can be installed in existing monitoring wells.<br/>Will provide an indication of the effect of groundwater fluctuations, if some monitoring of slope is also undertaken.</p> | <p>needed due to variable causes of instability.</p>  | <p>top of installation cost.<br/>\$700 per instrument.<br/>Nominally \$700 per collection of data and data processing<br/>\$3500 per test.</p> |
| <p>Detailed soil testing and analysis to provide site specific soil parameters as an input to slope stability analyses.<br/>Could be collected during inclinometer installation, or may require additional boreholes to be drilled.</p>  | <p>Improved confidence in models for the site.<br/>Better understanding of site conditions.</p>  | <p>Expensive test that can take a long time to complete, and collection of samples is also expensive.</p>   | <p>Expensive test that can take a long time to complete, and collection of samples is also expensive.</p>   | <p>\$3500 per test.</p>  |
| <p>Continue to operate with the slope as is and have Town of Ladysmith staff make regular observations of the slopes performance and behaviour, e.g. by taking photographs and making notes of any failures at regular prescribed intervals.<br/>If slope instability becomes a concern, consider closing half of the roadway and making one-way to avoid loading the slope.</p> | <p>Low Cost.</p>   | <p>No change from current conditions<br/>Slope instability issues will persist.<br/>No Triggers to alert to or mitigate slope stability issues as they are happening.</p>       | <p>No change from current conditions<br/>Slope instability issues will persist.<br/>No Triggers to alert to or mitigate slope stability issues as they are happening.</p> | <p>\$0</p>   |
| <p><b>Observation Approach – Low Level of detail</b></p>   |  |   |   |  |



## 7. Closure

The attached Statement of Limitations for Geotechnical Services is provided in **Appendix G**, apply to this report, and are hereby incorporated herein.

We trust this geotechnical assessment is sufficient for your present needs. Should you have any questions or require additional information, please do not hesitate to contact the undersigned.

Sincerely,  
McElhanney Ltd.

Prepared by:

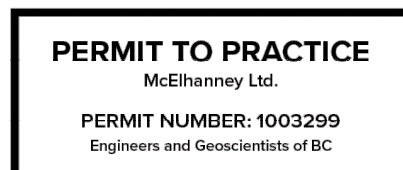
Reviewed by:



Christopher Fernandez, M.Sc., P.Eng.  
Geotechnical Engineer  
[cfernandez@mcelhanney.com](mailto:cfernandez@mcelhanney.com)

Richard Simpson, P.Eng.  
Senior Geotechnical Engineer  
[rsimpson@mcelhanney.com](mailto:rsimpson@mcelhanney.com)

| Date            | Status | Revision | Author/ Reviewer           |
|-----------------|--------|----------|----------------------------|
| July 26, 2024   | DRAFT  | A        | C. Fernandez<br>R. Simpson |
| August 28, 2024 | Final  | 0        | C. Fernandez<br>R.Simpson  |

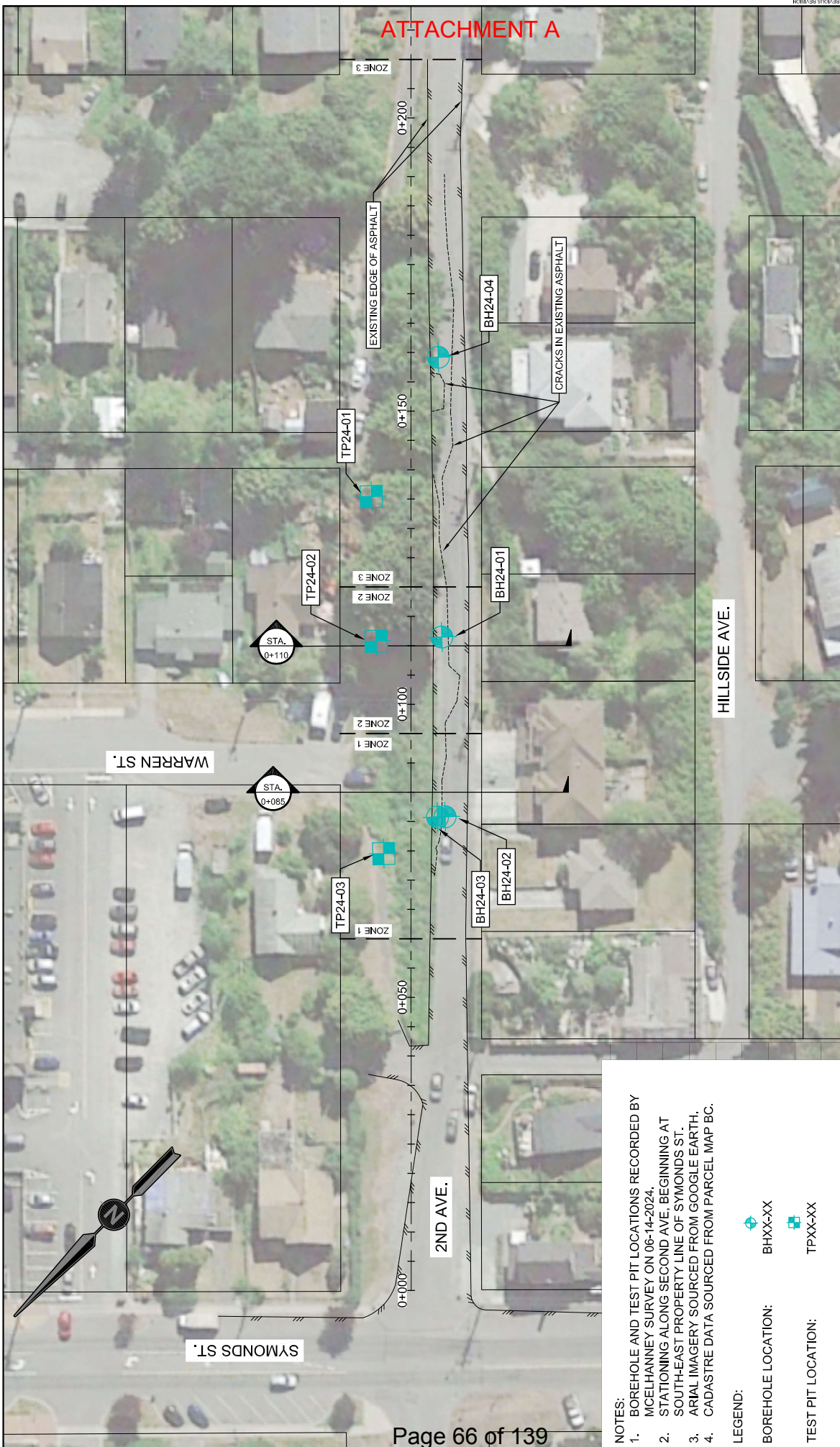




# APPENDIX A

Sketch 1 – Location Plan

# ATTACHMENT A



**NOTES:**

1. BOREHOLE AND TEST PIT LOCATIONS RECORDED BY MCELHANEY SURVEY ON 06-14-2024.
2. STATIONING ALONG SECOND AVE BEGINNING AT SOUTH-EAST PROPERTY LINE OF SYMONDS ST.
3. ARIAL IMAGERY SOURCED FROM GOOGLE EARTH.
4. CADASTRE DATA SOURCED FROM PARCEL MAP BC.

**LEGEND:**

BOREHOLE LOCATION: BHXX-XX

TEST PIT LOCATION: TPXX-XX

|  |  |   |   |
|--|--|---|---|
| <p>McElhaney<br/>3201 Eglar Road<br/>Nanaimo, BC V9T 1G7<br/>Tel: 250-716-5338</p>   |  | <p>PRELIMINARY<br/>NOT FOR<br/>CONSTRUCTION</p> <p>TOWN OF LADYSMITH<br/>410 EPLUNGADE AVE.<br/>LADYSMITH, BC</p> | <p>Project Number<br/>223-14800-0-1</p> <p>Revision<br/>0</p> |
| <p>DATE: 06/14/2024<br/>DRAWN BY: [Name]<br/>CHECKED BY: [Name]<br/>SCALE: 1:600</p> |  | <p>PROJECT: 2ND AVE. SLOPE STABILITY GEOTECHNICAL TEST PIT SITE PLAN</p>  |   |


# APPENDIX B

## Borehole Logs

**ATTACHMENT A**

|                                     |                                   |                           |
|-------------------------------------|-----------------------------------|---------------------------|
| CLIENT: Town of Ladysmith           | PROJECT: 2nd Ave Slope Stability  | BOREHOLE No. BH24-01      |
| CONTRACTOR: Terratech Drilling Ltd. | CO-ORDS N/E: 5427293.66 439764.07 | PROJECT No. 2231-38903-01 |
| METHOD: Sonic Drill                 | LOCATION: Ladysmith, BC           | ELEVATION: 50.95 m        |


| DEPTH (m) | ELEVATION (m) | GRAPHIC LOG | MATERIAL DESCRIPTION   | SAMPLE TYPE NUMBER | RECOVERY (%) | BLOW COUNTS (N VALUE)  | <ul style="list-style-type: none"> <li>▲ N Value</li> <li>● Moisture Content (%)</li> <li>  Plastic/Liquid Limit (%)</li> <li>□ Fines Content (%)</li> <li>◆ DCPT Blows</li> </ul> | WELL DIAGRAM | WATER   | REMARKS |
|-----------|---------------|-------------|--|--------------------|--------------|------------------------|--|--------------|---|---------|
| 0.10      | 50.85         |             | ASPHALT (100mm), double layer of asphalt pavement  |                    |              |                        |  |              |   |         |
| 0.40      | 50.55         |             | SAND & GRAVEL (GWS), trace fines, well graded, fine gravel, angular, compact, grey, dry [ROADBASE]   |                    |              |                        |  |              | Cement patch; Flush-Mount road box & J-Plug in sand   |         |
| 1         | 50            |             | SAND (GWS), gravelly, silty, occasional cobble, rootlets, well graded, rounded, loose, brown [FILL]  |                    |              |                        |  |              | Bentonite seal  |         |
| 2         | 49            |             |  |                    |              |                        |  |              | 50mm PVC standpipe                                    |         |
| 3         | 48            | 3.00        | GRAVEL (GPS), sandy, silty, poorly graded, rounded coarse gravel to 75mm, loose, brown [NATURAL]   |                    |              |                        |  |              | 25% soil recovery from 0m to 3m                       |         |
| 4         | 47            | 3.60        | SILT (MLS), sandy, trace gravel, poorly graded, coarse to fine sand, coarse gravel, rounded, firm, low plasticity, grey to yellow, moist [NATURAL] |                    |              |                        |  |              |   |         |
| 5         | 46            | 5.00        | SAND (SP), some silt, trace gravel, poorly graded, medium to coarse sand, very dense, mottled yellow to grey, damp [TILL]                          |                    |              |                        |  |              |   |         |
| 6         | 45            |             |  | G 1                |              |                        |  |              |   |         |
| 7         | 44            |             |  | G 2                |              |                        |  |              |   |         |
| 8         | 43            |             |  | G 3                |              |                        |  |              |   |         |
| 9         | 42            |             |  | G 4                |              |                        |  |              | End DCPT at 6.1m                                      |         |
| 10        | 41            |             |  | G 5                |              |                        |  |              | 6.37m water table, June 14, 2024                      |         |
| 11        | 40            |             |  |                    |              |                        |  |              | 6.59m water table, July 4, 2024                       |         |
| 12        | 39            |             |  | G 6                |              |                        |  |              |   |         |
| 13        | 38            | 12.65       | Terminated at 12.65 m. End of Hole at Target Depth.  | G 7                | 100          | 10-17-26-34 /0 mm (43) |  |              | 50mm Slotted PVC well screen & end cap in filter sand |         |

|   |                           |                                |
|---|---------------------------|--------------------------------|
|  <b>McElhanney</b> | LOGGED BY: T.Schaap       | START DATE: June 13, 2024      |
|   | REVIEWED BY: C.Fernandez  | COMPLETION DATE: June 13, 2024 |
|   | COMPLETION DEPTH: 12.65 m | Sheet 1 of 1                   |

**ATTACHMENT A**

|                                     |                                   |                           |
|-------------------------------------|-----------------------------------|---------------------------|
| CLIENT: Town of Ladysmith           | PROJECT: 2nd Ave Slope Stability  | BOREHOLE No. BH24-02      |
| CONTRACTOR: Terratech Drilling Ltd. | CO-ORDS N/E: 5427316.40 439743.44 | PROJECT No. 2231-38903-01 |
| METHOD: Sonic Drill                 | LOCATION: Ladysmith, BC           | ELEVATION: 49.88 m        |


| DEPTH (m) | ELEVATION (m) | GRAPHIC LOG | MATERIAL DESCRIPTION  | SAMPLE TYPE NUMBER | RECOVERY (%) | ▲ N Value<br>● Moisture Content (%)<br>  Plastic/Liquid Limit (%)<br>□ Fines Content (%)<br>◆ DCPT Blows<br>20 40 60 80 | WELL DIAGRAM | WATER | REMARKS   |
|-----------|---------------|-------------|---|--------------------|--------------|---|--------------|-------|---|
|           | 49.88         |             | ASPHALT (50mm)  |                    |              |   |              |       |   |
|           | 49.58         |             | SAND & GRAVEL (GWS), trace fines, well graded, fine gravel, angular, compact, grey, dry [ROADBASE]                                |                    |              |   |              |       | Cement patch; Flush-Mount road box & J-Plug in sand                                 |
| 1         | 49            |             | SAND (GWS), gravelly, silty to some silt, well graded, gravel to 60mm, rounded, loose to compact, dry, brown [FILL]               |                    |              |   |              |       | Bentonite seal 10% soil recovery from 0m to 1.5m<br>1.18m water table, July 4, 2024 |
| 2         | 48            |             | - black silty organic inclusions  |                    |              |   |              |       |   |
|           | 47.48         |             | SILT (MLS), sandy, trace to some gravel, firm, rounded gravel to 75mm, fine sand, low plasticity, mottled yellow, moist [NATURAL] |                    |              |   |              | ▽     | 2.33m water table, June 14, 2024  |
| 3         | 47            |             |   |                    |              |   |              |       | 50mm PVC standpipe  |
| 4         | 46            |             |   |                    |              |   |              |       |   |
| 5         | 45            |             |   | G 1                |              |   |              |       |   |
|           | 44.58         |             | SAND (SP-SM), silty, some gravel, poorly graded, coarse sand, rounded gravel, loose, mottled yellow, moist [NATURAL]              |                    |              |   |              |       | 50mm Slotted PVC well screen & end cap in filter sand                               |
| 6         | 44            |             |   | G 2                |              |   |              |       |   |
|           | 43.68         |             | SAND (SP), some silt, trace gravel, poorly graded, very dense, medium to coarse sand, mottled yellow to grey, dry to damp [TILL]  |                    |              |   |              |       |   |
|           | 43.18         |             | Terminated at 6.70 m. End of Hole at Target Depth.  |                    |              |   |              |       | End DCPT at 6.7m  |
| 7         | 43            |             |   |                    |              |   |              |       |   |
| 8         | 42            |             |   |                    |              |   |              |       |   |
| 9         | 41            |             |   |                    |              |   |              |       |   |
| 40        | 40            |             |   |                    |              |   |              |       |   |

|   |                          |                                |
|---|--------------------------|--------------------------------|
|  <b>McElhanney</b> | LOGGED BY: T.Schaap      | START DATE: June 13, 2024      |
|   | REVIEWED BY: C.Fernandez | COMPLETION DATE: June 13, 2024 |
|   | COMPLETION DEPTH: 6.70 m | Sheet 1 of 1                   |

**ATTACHMENT A**

|                                     |                                   |                           |
|-------------------------------------|-----------------------------------|---------------------------|
| CLIENT: Town of Ladysmith           | PROJECT: 2nd Ave Slope Stability  | BOREHOLE No. BH24-03      |
| CONTRACTOR: Terratech Drilling Ltd. | CO-ORDS N/E: 5427315.47 439742.55 | PROJECT No. 2231-38903-01 |
| METHOD: Sonic Drill                 | LOCATION: Ladysmith, BC           | ELEVATION: 49.93 m        |


| DEPTH (m) | ELEVATION (m) | GRAPHIC LOG | MATERIAL DESCRIPTION   | SAMPLE TYPE NUMBER | RECOVERY (%) | <ul style="list-style-type: none"> <li>▲ N Value</li> <li>● Moisture Content (%)</li> <li>  Plastic/Liquid Limit (%)</li> <li>□ Fines Content (%)</li> <li>◆ DCPT Blows</li> </ul> |    |    |    | REMARKS   |
|-----------|---------------|-------------|--|--------------------|--------------|--|----|----|----|---|
|           |               |             |  |                    |              | 20   | 40 | 60 | 80 |   |
|           | 49.83         |             | ASPHALT (100mm), double layer of asphalt pavement  |                    |              |  |    |    |    | Asphalt patch                                     |
|           | 49.53         |             | SAND & GRAVEL (GWS), trace fines, well graded, fine gravel, angular, compact, grey, dry [ROADBASE]   |                    |              |  |    |    |    | Bentonite seal                                    |
| 1         | 49            |             | SAND (GPS), gravelly, poorly graded, rounded gravel, compact, brown to grey to black, damp [FILL]  |                    |              |  |    |    |    | 10% soil recovery from 0 to 1.5m                  |
| 2         | 48            |             | SAND (SP-SM), silty, trace gravel, poorly graded, gravel to 75mm, rounded, fine sand, compact, damp to moist, grey to mottled yellow, damp [NATURAL] |                    |              |  |    |    |    |   |
| 3         | 47            |             | SILT (MLS), sandy, trace gravel, firm, low plasticity, mottled yellow, moist [NATURAL]   |                    |              |  |    |    |    |   |
| 4         | 46            |             |  | G 1                |              |  |    |    |    |   |
| 5         | 45            |             | GRAVEL (GPS), sandy, silty, poorly graded, coarse rounded gravel, compact, yellow brown, damp [NATURAL]  |                    |              |  |    |    |    |   |
| 6         | 44            |             | SAND (GPS), gravelly, silty, poorly graded, rounded gravel, very dense, mottled yellow, damp [TILL]  | G 2                |              |  |    |    |    | End DCPT at 6.1m                                  |
| 7         | 43            |             |  |                    |              |  |    |    |    |   |
| 8         | 42            |             |  |                    |              |  |    |    |    |   |
| 9         | 41            |             |  |                    |              |  |    |    |    | No well installed; backfilled with drill cuttings |
|           | 40.63         |             | Terminated at 9.30 m. End of Hole at Target Depth.   | G 3                |              |  |    |    |    |   |

|   |                          |                                |
|---|--------------------------|--------------------------------|
|  <b>McElhanney</b> | LOGGED BY: T.Schaap      | START DATE: June 13, 2024      |
|   | REVIEWED BY: C.Fernandez | COMPLETION DATE: June 13, 2024 |
|   | COMPLETION DEPTH: 9.30 m | Sheet 1 of 1                   |

**ATTACHMENT A**

|                                     |                                   |                           |
|-------------------------------------|-----------------------------------|---------------------------|
| CLIENT: Town of Ladysmith           | PROJECT: 2nd Ave Slope Stability  | BOREHOLE No. BH24-04      |
| CONTRACTOR: Terratech Drilling Ltd. | CO-ORDS N/E: 5427259.50 439797.41 | PROJECT No. 2231-38903-01 |
| METHOD: Sonic Drill                 | LOCATION: Ladysmith, BC           | ELEVATION: 53.53 m        |

| DEPTH (m) | ELEVATION (m) | GRAPHIC LOG | MATERIAL DESCRIPTION  | SAMPLE TYPE NUMBER | RECOVERY (%) | ▲ N Value<br>● Moisture Content (%)<br>  Plastic/Liquid Limit (%)<br>□ Fines Content (%)<br>◆ DCPT Blows<br>20 40 60 80 | WELL DIAGRAM | REMARKS   |
|-----------|---------------|-------------|---|--------------------|--------------|---|--------------|---|
|           | 53.43         |             | ASPHALT (100mm)   |                    |              |   |              | Cement patch; Flush-Mount road box & J-Plug in sand     |
|           | 53.13         |             | SAND & GRAVEL (GWS), trace fines, well graded, fine gravel, angular, compact, grey, dry [ROADBASE]              |                    |              |   |              | Bentonite seal  |
| 1         |               |             | SAND (SW-SM), silty, gravelly to some gravel, well graded, rounded gravel to 75mm, loose, brown, damp [NATURAL] |                    |              |   |              | 15% soil recovery from 0 to 1.5m                        |
| 2         |               |             |   |                    |              |   |              | 50mm PVC standpipe                                      |
|           | 51.13         |             | SAND (SP-SM), silty, some gravel, poorly graded, rounded gravel to 50mm, very dense, brown, damp [TILL]         |                    |              |   |              | End DCPT at 2.65m                                       |
| 3         |               |             |   |                    |              |   |              |   |
| 4         |               |             |   | G 1                |              |   |              |   |
| 5         |               |             |   | G 2                |              |   |              | 50mm Slotted PVC well screen & end cap in filter sand   |
| 6         |               |             |   | G 3                |              |   |              | No water table observed, June 14, 2024 and July 4, 2024 |
|           | 47.33         |             | Terminated at 6.20 m. End of Hole at Target Depth.  |                    |              |   |              |   |
| 7         |               |             |   |                    |              |   |              |   |
| 8         |               |             |   |                    |              |   |              |   |
| 9         |               |             |   |                    |              |   |              |   |

|   |                          |                                |
|---|--------------------------|--------------------------------|
|  <b>McElhanney</b> | LOGGED BY: T.Schaap      | START DATE: June 13, 2024      |
|   | REVIEWED BY: C.Fernandez | COMPLETION DATE: June 13, 2024 |
|   | COMPLETION DEPTH: 6.20 m | Sheet 1 of 1                   |

**ATTACHMENT A**

|                               |                                   |                           |
|-------------------------------|-----------------------------------|---------------------------|
| CLIENT: Town of Ladysmith     | PROJECT: 2nd Ave Slope Stability  | TEST PIT No. TP24-01      |
| CONTRACTOR: Town of Ladysmith | CO-ORDS N/E: 5427284.56 439789.29 | PROJECT No. 2231-38903-01 |
| METHOD: Cat 430 Backhoe       | LOCATION: Ladysmith, BC           | ELEVATION: 45.20 m        |

| DEPTH (m) | ELEVATION (m) | GRAPHIC LOG                | WATER | MATERIAL DESCRIPTION  | SAMPLE TYPE NUMBER | ▲ N Value<br>● Moisture Content (%)<br>  Plastic/Liquid Limit (%)<br>□ Fines Content (%)<br>◆ DCPT Blows<br>20 40 60 80 | REMARKS   |
|-----------|---------------|----------------------------|-------|---|--------------------|---|---|
|           |               |                            |       | 0.05 ASPHALT (50mm) 45.15   |                    |   |   |
|           | 45            | [Cross-hatched pattern]    |       | 0.20 SAND & GRAVEL (GWS), trace fines, well graded, fine gravel, angular, compact, grey, dry [ROADBASE] 45.00               |                    |   |   |
|           |               |                            |       | SAND (GPS), gravelly, some fines, occasional cobble to 150mm, rootlets, poorly graded, compact, mottled yellow, damp [FILL] |                    |   |   |
| 1         |               |                            |       | 1.60 43.60  | [Hand icon] G 1    | ●   |   |
|           | 44            |                            |       |   | [Hand icon] G 2    | ●   |   |
|           |               |                            |       | SILT (MLS), sandy to some sand, trace gravel, poorly graded, stiff, low plasticity, grey, damp [NATURAL]                    |                    |   |   |
| 2         |               |                            |       | 2.60 42.60  | [Hand icon] G 3    | ●   |   |
|           | 43            |                            |       |   | [Hand icon] G 4    | ●   |   |
|           |               |                            | ▽     | SAND (SP), some gravel, trace fines, coarse sand, fine gravel, compact, blue grey, wet [NATURAL]                            |                    |   | 2.6m water seepage  |
| 3         |               |                            |       | 3.10 42.10  |                    |   |   |
|           | 42            | [Diagonal hatched pattern] |       | SAND (SP), gravelly, some fines, poorly graded, dense, brown, damp to moist [TILL] 41.90                                    |                    |   | Test pit backfilled with spoils 200mm of slough upon completion |
|           |               |                            |       | 3.30 Terminated at 3.30 m. Limited by reach of Backhoe.   |                    |   |   |
| 4         |               |                            |       |   |                    |   |   |
|           | 41            |                            |       |   |                    |   |   |


|                   |                          |                                |
|-------------------|--------------------------|--------------------------------|
| <b>McElhanney</b> | LOGGED BY: T.Schaap      | START DATE: June 14, 2024      |
|                   | REVIEWED BY: C.Fernandez | COMPLETION DATE: June 14, 2024 |
|                   | COMPLETION DEPTH: 3.30 m | Sheet 1 of 1                   |



**ATTACHMENT A**

|                               |                                   |                           |
|-------------------------------|-----------------------------------|---------------------------|
| CLIENT: Town of Ladysmith     | PROJECT: 2nd Ave Slope Stability  | TEST PIT No. TP24-02      |
| CONTRACTOR: Town of Ladysmith | CO-ORDS N/E: 5427301.88 439771.71 | PROJECT No. 2231-38903-01 |
| METHOD: Cat 430 Backhoe       | LOCATION: Ladysmith, BC           | ELEVATION: 44.03 m        |

| DEPTH (m) | ELEVATION (m) | GRAPHIC LOG | WATER | MATERIAL DESCRIPTION   | SAMPLE TYPE NUMBER | ▲ N Value            |                          |                   |            | REMARKS   |
|-----------|---------------|-------------|-------|--|--------------------|----------------------|--------------------------|-------------------|------------|---|
|           |               |             |       |  |                    | Moisture Content (%) | Plastic/Liquid Limit (%) | Fines Content (%) | DCPT Blows |   |
|           |               |             |       | 0.05 ASPHALT (50mm) 43.98  |                    |                      |                          |                   |            |   |
|           |               |             |       | 0.20 SAND & GRAVEL (GWS), trace fines, well graded, fine gravel, angular, compact, grey, dry [ROADBASE] 43.83      |                    |                      |                          |                   |            |   |
|           |               |             |       | SAND (SP), gravelly, some fines, poorly graded, rounded gravel, grey, dry to damp [FILL]                           |                    |                      |                          |                   |            |   |
|           |               |             |       | 0.50 SILT (ML), some sand, rootlets, poorly graded, soft, black, moist [FILL] 43.53                                |                    |                      |                          |                   |            |   |
|           |               |             |       | 0.70 SAND (SP-SM), silty, gravelly, poorly graded, compact, brown to grey, damp [NATURAL] 43.33                    |                    |                      |                          |                   |            |   |
| 1         | 43            |             |       |  | G 1                | ●                    |                          |                   |            |   |
|           |               |             |       |  | G 2                | ●                    |                          |                   |            |   |
| 2         | 42            |             |       |  |                    |                      |                          |                   |            |   |
|           |               |             | ▽     | 2.50 SAND (SW), some fines, some gravel, well graded, compact, coarse sand, fine gravel, grey, wet [NATURAL] 41.53 |                    |                      |                          |                   |            | 2.5m water seepage  |
|           |               |             |       |  | G 3                | ●                    |                          |                   |            |   |
| 3         | 41            |             |       | 3.10 SAND (SP), gravelly, some silt, poorly graded, very dense, grey, moist to damp [TILL] 40.93                   |                    |                      |                          |                   |            | Test pit backfilled with spoils 100mm of slough upon completion |
|           |               |             |       | 3.50 Terminated at 3.50 m. Limited by reach of Backhoe. 40.53  |                    |                      |                          |                   |            |   |
| 4         | 40            |             |       |  |                    |                      |                          |                   |            |   |

|   |                          |                                |
|---|--------------------------|--------------------------------|
|  <b>McElhanney</b> | LOGGED BY: T.Schaap      | START DATE: June 14, 2024      |
|   | REVIEWED BY: C.Fernandez | COMPLETION DATE: June 14, 2024 |
|   | COMPLETION DEPTH: 3.50 m | Sheet 1 of 1                   |

**ATTACHMENT A**

|                               |                                   |                           |
|-------------------------------|-----------------------------------|---------------------------|
| CLIENT: Town of Ladysmith     | PROJECT: 2nd Ave Slope Stability  | TEST PIT No. TP24-03      |
| CONTRACTOR: Town of Ladysmith | CO-ORDS N/E: 5427327.25 439745.81 | PROJECT No. 2231-38903-01 |
| METHOD: Cat 430 Backhoe       | LOCATION: Ladysmith, BC           | ELEVATION: 45.67 m        |

| DEPTH (m) | ELEVATION (m) | GRAPHIC LOG | WATER | MATERIAL DESCRIPTION  | SAMPLE TYPE NUMBER | ▲ N Value            |                          |                   |            | REMARKS   |
|-----------|---------------|-------------|-------|---|--------------------|----------------------|--------------------------|-------------------|------------|---|
|           |               |             |       |   |                    | Moisture Content (%) | Plastic/Liquid Limit (%) | Fines Content (%) | DCPT Blows |   |
|           |               |             |       |   |                    | 20                   | 40                       | 60                | 80         |   |
| 0.05      | 45.62         |             |       | ASPHALT (50mm)  |                    |                      |                          |                   |            |   |
| 0.20      | 45.47         |             |       | SAND & GRAVEL (GWS), trace fines, well graded, fine gravel, angular, compact, grey, dry [ROADBASE]                    |                    |                      |                          |                   |            |   |
| 0.30      | 45.37         |             |       | SILT (ML), some sand, rootlets, moist, soft, black  |                    |                      |                          |                   |            |   |
| 0.50      | 45.17         |             |       | SAND (GWS), gravelly, some fines, occasional cobble to 150mm, well graded, compact, rounded gravel, grey, damp [FILL] |                    |                      |                          |                   |            |   |
| 45        |               |             |       | SAND (SP-SM), silty, gravelly, poorly graded, rounded gravel, compact, mottled yellow to grey, moist [NATURAL]        | G 1                |                      |                          |                   |            |   |
| 1         |               |             |       |   |                    |                      |                          |                   |            |   |
| 1.50      | 44.17         |             | ▽     | SILT (MLS), sandy, some gravel, poorly graded, firm, low plasticity, grey to brown, damp [NATURAL]                    |                    |                      |                          |                   |            | 1.5m water seepage  |
| 2         |               |             |       |   |                    |                      |                          |                   |            |   |
| 43        |               |             |       |   |                    |                      |                          |                   |            |   |
| 2.90      | 42.77         |             |       | SAND (GPS), gravelly, some silt, poorly graded, dense, grey brown, moist [TILL]                                       | G 3                |                      |                          |                   |            |   |
| 3         |               |             |       |   |                    |                      |                          |                   |            |   |
| 42        |               |             |       |   |                    |                      |                          |                   |            | Test pit backfilled with spoils 300mm water ponding upon completion |
| 3.90      | 41.77         |             |       | Terminated at 3.90 m. Limited by reach of Backhoe.  |                    |                      |                          |                   |            |   |
| 4         |               |             |       |   |                    |                      |                          |                   |            |   |
| 41        |               |             |       |   |                    |                      |                          |                   |            |   |

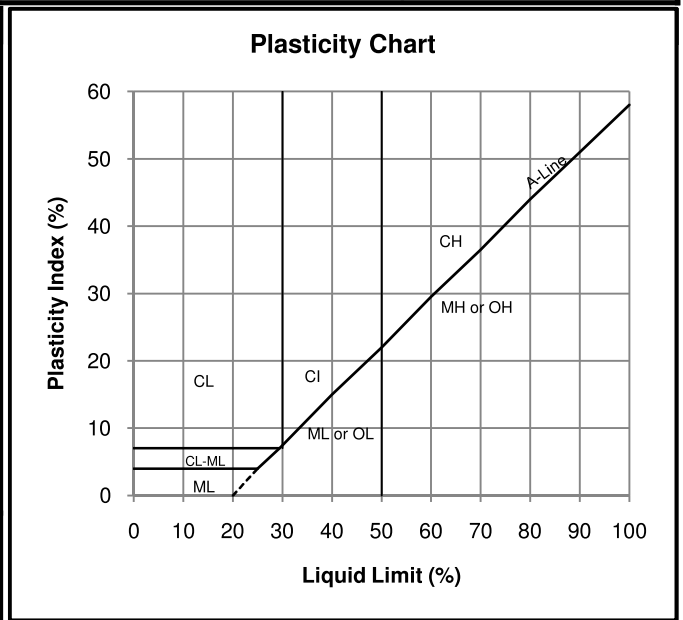
|  |                          |                                |
|--|--------------------------|--------------------------------|
|  | LOGGED BY: T.Schaap      | START DATE: June 14, 2024      |
|  | REVIEWED BY: C.Fernandez | COMPLETION DATE: June 14, 2024 |
|  | COMPLETION DEPTH: 3.90 m | Sheet 1 of 1                   |

**ATTACHMENT A**

| MODIFIED UNIFIED CLASSIFICATION SYSTEMS FOR SOILS                |                       |                                |              |                          |   |  |   |
|--|-----------------------|--------------------------------|--------------|--------------------------|---|--|---|
| MAJOR DIVISION   |                       |                                | GROUP SYMBOL | TYPICAL SOIL DESCRIPTION | LABORATORY CLASSIFICATION CRITERIA                      |  |   |
| <b>COARSE GRAINED SOILS</b><br>(more than 50% larger than 75 µm) | <b>GRAVELS</b>        | Clean Gravels (< 5% Fines)     | GW           |                          | Well graded gravels, sandy gravels, trace or no fines   | $C_u = D_{60}/D_{10} > 4$ ,<br>$C_c = (D_{30})^2/D_{10}D_{60} = 1 \text{ to } 3$ |   |
|  |                       | Dirty Gravels (> 12% Fines)    | GP           |                          | Poorly graded gravels, sandy gravels, trace or no fines | Not meeting the GW requirements.   |   |
|  |                       |                                | GM           |                          | Silty gravels, silty sandy gravels                      | Plasticity below A-Line or $I_p < 4$   |   |
|  |                       |                                | GC           |                          | Clayey gravels, clayey sandy gravels                    | Plasticity above A-Line or $I_p > 7$   |   |
|  | <b>SANDS</b>          | Clean Sands (< 5% Fines)       | SW           |                          | Well graded sands, gravelly sand, trace or no fines     | $C_u = D_{60}/D_{10} > 4$ ,<br>$C_c = (D_{30})^2/D_{10}D_{60} = 1 \text{ to } 3$ |   |
|  |                       | Dirty Sands (> 12% Fines)      | SP           |                          | Poorly graded sands, gravelly sand, trace or no fines   | Not meeting the SW requirements.   |   |
|  |                       |                                | SM           |                          | Silty sands, sand and silt mixtures                     | Plasticity below A-Line or $I_p < 4$   |   |
| <b>FINE GRAINED SOILS</b><br>(more than 50% smaller than 75 µm)  | <b>SILTS</b>          | $W_L < 50\%$                   | ML           |                          | Inorganic silts, sandy silts with slight plasticity     | Classifications are based upon Plasticity Chart.                                 |   |
|  |                       | $W_L > 50\%$                   | MH           |                          | Inorganic silts of high plasticity                      |  |   |
|  | <b>CLAYS</b>          | $W_L < 30\%$                   | CL           |                          | Inorganic clay, silty clays of low plasticity           |  |   |
|  |                       | $30\% < W_L < 50\%$            | CI           |                          | Inorganic clay, silty clays of intermediate plasticity  |  |   |
|  |                       | $W_L > 50\%$                   | CH           |                          | Inorganic clay, silty clays of high plasticity          |  |   |
|  |                       | <b>ORGANIC SILTS AND CLAYS</b> | $W_L < 50\%$ | OL                       |   |  | Organic silts and silty clays of low plasticity |
|  | $W_L > 50\%$          |                                | OH           |                          | Organic silts and silty clays of high plasticity        |  |   |
|  | <b>HIGHLY ORGANIC</b> |                                | PT           |                          | Peat and other highly organic soils                     |  |   |

| SOIL COMPONENTS      |                          |                 |                        |             |
|----------------------|--------------------------|-----------------|------------------------|-------------|
| Fraction             | U.S. Standard Sieve Size |                 | Percentage (by weight) | Description |
|                      | Passing                  | Retained        |                        |             |
| Gravel               |                          |                 |                        |             |
| Coarse               | 76 mm                    | 19 mm           | 35-50                  | AND         |
| Fine                 | 19 mm                    | 4.75 mm         |                        |             |
| Sand                 |                          |                 |                        |             |
| Coarse               | 4.75 mm                  | 2.00 mm         | 20-35                  | Y/EY        |
| Medium               | 2.00 mm                  | 425 µm          |                        |             |
| Fine                 | 425 µm                   | 75 µm           | 10-20                  | SOME        |
| Fines (Silt or Clay) | 75 µm                    |                 | 1-10                   | TRACE       |
| Oversize Material    | Cobbles                  | 76 mm to 200 mm |                        |             |
|                      | Boulders                 | > 200 mm        |                        |             |

| RELATIVE DENSITY AND CONSISTENCY |               |                |                                |
|----------------------------------|---------------|----------------|--------------------------------|
| Cohesionless Soils               |               | Cohesive Soils |                                |
| Relative Density                 | SPT (N) Value | Consistency    | Undrained Shear Strength (kPa) |
| Very Loose                       | 0-4           | Very Soft      | 0-10                           |
| Loose                            | 4-10          | Soft           | 10-25                          |
| Compact                          | 10-30         | Firm           | 24-50                          |
| Dense                            | 30-50         | Stiff          | 50-100                         |
| Very Dense                       | >50           | Very Stiff     | 100-200                        |
|                                  |               | Hard           | >200                           |



- Notes:**
- Use dual symbols for coarse grained soils with 5 to 12% fines (i.e. GP-GM)
  - All sieves are U.S. Standard ASTM E11



# APPENDIX C

## Laboratory Test Results

# Soil Moisture Content



## Report

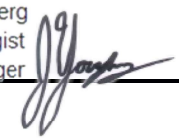
Client: Town of Ladysmith  
 Project Name: 2nd Ave Slope Stability

**Lab ID:** 24-963 to 969  
 Project Number: 2231-38903-01  
 Report Number: 1  
 Report Date: 5 - Jul - 2024

Material Type: Test Pit Samples - Native Material  
 Source: \_\_\_\_\_  
 Other: \_\_\_\_\_

Sample Date: 13-Jun-24  
 Sampled by: T. Schaap  
 Test Date: 4-Jul-24  
 Tested by: M. Ewing

| Test Pit Number | Sample Depth (m) | Container Number | Tare (g) | Tare + Wet (g) | Tare + Dry (g) | Moisture (%) |
|-----------------|------------------|------------------|----------|----------------|----------------|--------------|
| 24-01           | 5.4m             | B-5              | 231.6    | 1888.8         | 1755.0         | 8.8          |
| 24-01           | 6.0m             | B-1              | 233.2    | 1365.6         | 1170.8         | 20.8         |
| 24-01           | 6.5m             | J-7              | 224.3    | 1999.8         | 1893.5         | 6.4          |
| 24-01           | 7.2m             | B-6              | 233.3    | 1730.6         | 1597.6         | 9.7          |
| 24-01           | 9.5m             | J-1              | 224.8    | 1510.7         | 1368.9         | 12.4         |
| 24-01           | 12.0m            | J-6              | 224.8    | 1254.0         | 1090.7         | 18.9         |
| 24-01           | 12.2m            | C-2              | 249.6    | 1613.6         | 1393.0         | 19.3         |
|                 |                  |                  |          |                |                |              |
|                 |                  |                  |          |                |                |              |
|                 |                  |                  |          |                |                |              |
|                 |                  |                  |          |                |                |              |

Julian Youngberg  
 Sr. Technologist  
 Reviewed by: Project Manager 

# Soil Moisture Content



## Report

Client: Town of Ladysmith  
 Project Name: 2nd Ave Slope Stability

**Lab ID:** 24-970 to 986  
 Project Number: 2231-38903-01  
 Report Number: 2 (Page 1 of 2)  
 Report Date: 8 - Jul - 2024

Material Type: Native Material  
 Source: Bore Hole Samples  
 Other: \_\_\_\_\_

Sample Date: 13-Jun-24  
 Sampled by: T. Schaap  
 Test Date: 5-Jul-24  
 Tested by: N. Boening

| Bore Hole Number | Sample Depth (m) | Container Number | Tare (g) | Tare + Wet (g) | Tare + Dry (g) | Moisture (%) |
|------------------|------------------|------------------|----------|----------------|----------------|--------------|
| 24-02            | 4.8m             | B-5              | 231.9    | 1438.4         | 1207.3         | 23.7         |
| 24-02            | 6.0m             | J-7              | 225.2    | 1719.9         | 1590.3         | 9.5          |
| 24-03            | 4.3m             | B-1              | 233.7    | 978.5          | 822.4          | 26.5         |
| 24-03            | 5.9m             | B-6              | 233.5    | 1379.4         | 1308.3         | 6.6          |
| 24-03            | 9.9m             | J-1              | 224.7    | 1493.1         | 1374.6         | 10.3         |
| 24-04            | 3.6m             | J-6              | 224.7    | 938.3          | 900.6          | 5.6          |
| 24-04            | 4.8m             | F-4              | 210.3    | 1587.4         | 1449.4         | 11.1         |
| 24-04            | 6.1m             | B-3              | 232.0    | 964.5          | 909.8          | 8.1          |
|                  |                  |                  |          |                |                |              |
|                  |                  |                  |          |                |                |              |
|                  |                  |                  |          |                |                |              |

Julian Youngberg  
 Sr. Technologist  
 Reviewed by: Project Manager

# Soil Moisture Content



## Report

Client: Town of Ladysmith  
 Project Name: 2nd Ave Slope Stability


**Lab ID:** 24-970 to 986  
 Project Number: 2231-38903-01  
 Report Number: 2 (Page 2 of 2)  
 Report Date: 8 - Jul - 2024

Material Type: Native Material  
 Source: Test Pit Samples  
 Other: \_\_\_\_\_

Sample Date: 13-Jun-24  
 Sampled by: T. Schaap  
 Test Date: 5-Jul-24  
 Tested by: N. Boening

| Test Pit Number | Sample Depth (m) | Container Number | Tare (g) | Tare + Wet (g) | Tare + Dry (g) | Moisture (%) |
|-----------------|------------------|------------------|----------|----------------|----------------|--------------|
| 24-01           | 1.2m             | J-5              | 225.8    | 1384.6         | 1331.2         | 4.8          |
| 24-01           | 1.4m             | B-7              | 230.8    | 920.8          | 820.7          | 17.0         |
| 24-01           | 2.1m             | B-2              | 233.9    | 869.4          | 721.8          | 30.3         |
| 24-01           | 2.6m             | J-4              | 225.4    | 859.4          | 721.8          | 27.7         |
| 24-02           | 1.1m             | F-3              | 209.8    | 1415.4         | 1256.7         | 15.2         |
| 24-02           | 1.8m             | F-5              | 209.0    | 1245.9         | 1069.9         | 20.4         |
| 24-02           | 2.9m             | C-2              | 250.0    | 1166.2         | 1091.4         | 8.9          |
| 24-03           | 1.0m             | H-7              | 227.3    | 949.0          | 816.6          | 22.5         |
| 24-03           | 3.0m             | H-4              | 224.2    | 1514.1         | 1413.0         | 8.5          |
|                 |                  |                  |          |                |                |              |
|                 |                  |                  |          |                |                |              |

Reviewed by: Julian Youngberg  
 Sr. Technologist  
 Project Manager





F 4644 Madrona Place  
Courtenay, BC

PROJECT NO. 2231-38903-01  
CLIENT Town of Ladysmith  
CC

TO  
Town of Ladysmith  
410 Esplanade  
Ladysmith, BC  
V9G 1A2

ATTN: Ryan Bouma

PROJECT 2nd Ave Slope Stability

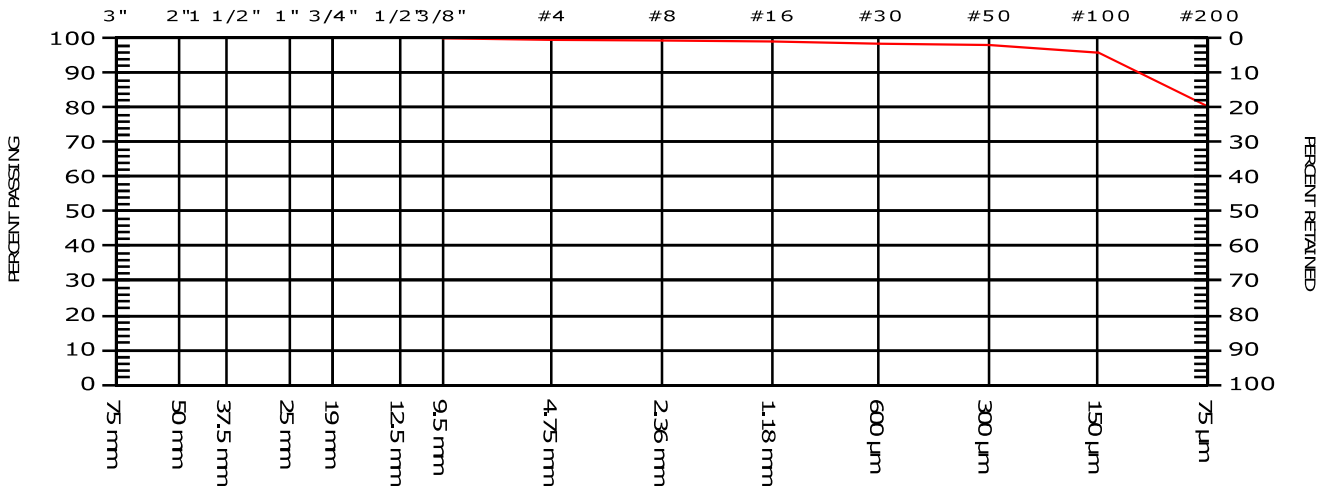
2nd Ave  
Ladysmith

CONTRACTOR

SIEVE TEST NO. 1      DATE TESTED 08-Jul-2024      DATE SAMPLED 13-Jun-2024      DATE RECEIVED 04-Jul-2024

SUPPLIER Borehole Sample  
SOURCE BH 24-02 @ 4.8m  
SPECIFICATION  
MATERIAL TYPE SILT, some sand

SAMPLED BY T. Schaap  
TESTED BY N. Boening  
TEST METHOD WASHED



| GRAVEL SIZES   | PERCENT PASSING | GRADATION LIMITS | SAND SIZES AND FINES | PERCENT PASSING | GRADATION LIMITS |
|----------------|-----------------|------------------|----------------------|-----------------|------------------|
| 3" 75 mm       | 100.0           |                  | No. 4 4.75 mm        | 99.6            |                  |
| 2" 50 mm       |                 |                  | No. 8 2.36 mm        | 99.4            |                  |
| 1 1/2" 37.5 mm |                 |                  | No. 16 1.18 mm       | 99.1            |                  |
| 1" 25 mm       |                 |                  | No. 30 600 µm        | 98.5            |                  |
| 3/4" 19 mm     |                 |                  | No. 50 300 µm        | 98.1            |                  |
| 1/2" 12.5 mm   |                 |                  | No. 100 150 µm       | 95.9            |                  |
| 3/8" 9.5 mm    |                 |                  | No. 200 75 µm        | 80.3            |                  |

MOISTURE CONTENT: 23.7%

COMMENTS

Lab ID #24-970  
Corresponds with Atterberg #1

Page 1      11-Jul-2024

Julian Youngberg  
Sr. Technologist  
PER. Project Manager



# ATTACHMENT A



**McElhanney**

F - 4644 Madrona Pl, Courtenay, BC

Report of:

ASTM D4318

## Liquid Limit, Plastic Limit and Plasticity Index of Soil

Client: Town of Ladysmith

Project No: 2231-38903-01

Test Pit No.: 24-02

Project: 2nd Ave Slope Stability

Sample No.: 1

Sample Date: 13-Jun-24

Sample Location: BH24-02

Test Date: 9-Jul-24

Sample Depth: 4.8 m

Tested By: N. Boening

Lab ID: 24-970

Sample Description: SILT, some sand, trace clay

### Liquid Limit (LL) - Method B

| Trial No.            | 1     | 2     | 3     |
|----------------------|-------|-------|-------|
| N                    | B     | #3    | C     |
| Tare                 | 8.74  | 9.01  | 8.66  |
| Tare & Wet Weight    | 18.52 | 18.90 | 19.57 |
| Tare & Dry Weight    | 16.60 | 16.97 | 17.45 |
| Moisture (%)         | 24.4% | 24.2% | 24.1% |
| 'k' Factor (Table 1) | 0.985 | 0.990 | 0.979 |
| Liquid Limit (LL)    | 24.1% | 24.0% | 23.6% |

Average  
23.9%

Sample Preparation: Oven Dry

Plastic Limit: Hand Rolled

Liquid Limit Device: Manual

Grooving Tool: Plastic

Liquid Limit Method: B

### Plastic Limit (PL)

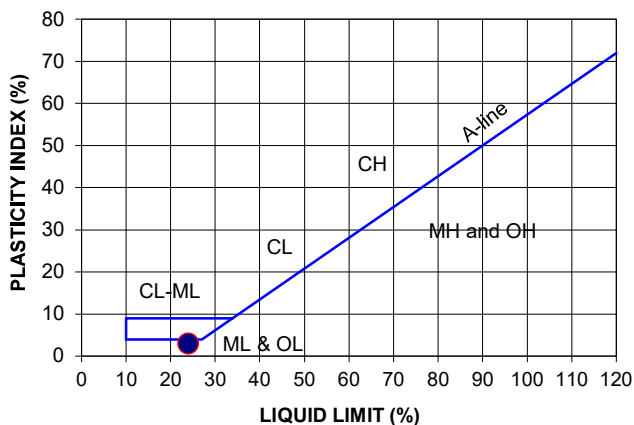
| Trial No.         | 1     | 2     | 3 |
|-------------------|-------|-------|---|
| Tare              | 9.09  | 8.61  |   |
| Tare & Wet Weight | 17.52 | 17.59 |   |
| Tare & Dry Weight | 16.07 | 16.04 |   |
| Moisture (%)      | 20.8% | 20.9% |   |

Average  
20.8%

### Summary of Results

|                       |        |
|-----------------------|--------|
| LIQUID LIMIT (LL)     | 23.9 % |
| PLASTIC LIMIT (PL)    | 20.8 % |
| PLASTICITY INDEX (PI) | 3.1 %  |
| NATURAL WATER CONTENT | 23.7 % |

### PLASTICITY CHART



Comments: Sample is brown/tan in colour

Corresponds with Wash Sieve Report #1

Reviewed By:

Kerry Barth, ASCT

# APPENDIX D

## Seismic Hazard Calculation

# ATTACHMENT A

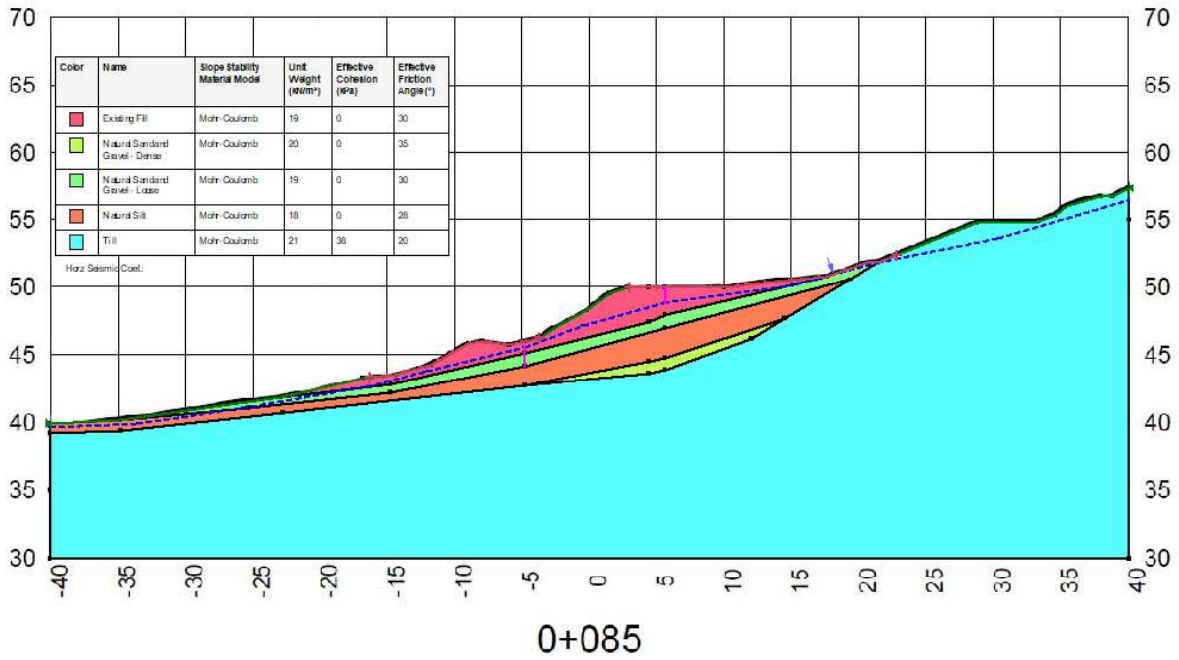
| Code    | Latitude | Longitude | Site Design | Probability | Sa(0.2) [g] | Sa(0.5) [g] | Sa(1.0) [g] | Sa(2.0) [g] | Sa(5.0) [g] | Sa(10.0) [g] | PGA [g] | PGV [m/s] | Log-log inte | Date Generated  |
|---------|----------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|---------|-----------|--------------|---|
| nbc2020 | 48.996   | -123.824  | XC          | 2           | 1.46        | 1.28        | 0.75        | 0.466       | 0.121       | 0.0478       | 0.628   | 0.743     | 0.168        | Thu Jul 25 2024 22:08:35 GMT-0700 (Pacific Daylight Time) |
| nbc2020 | 48.996   | -123.824  | XC          | 5           | 1.03        | 0.86        | 0.488       | 0.275       | 0.0647      | 0.0233       | 0.445   | 0.48      | 0.092        | Thu Jul 25 2024 22:08:35 GMT-0700 (Pacific Daylight Time) |
| nbc2020 | 48.996   | -123.824  | XC          | 10          | 0.753       | 0.6         | 0.326       | 0.166       | 0.0374      | 0.0135       | 0.328   | 0.324     | 0.0538       | Thu Jul 25 2024 22:08:35 GMT-0700 (Pacific Daylight Time) |

# APPENDIX E

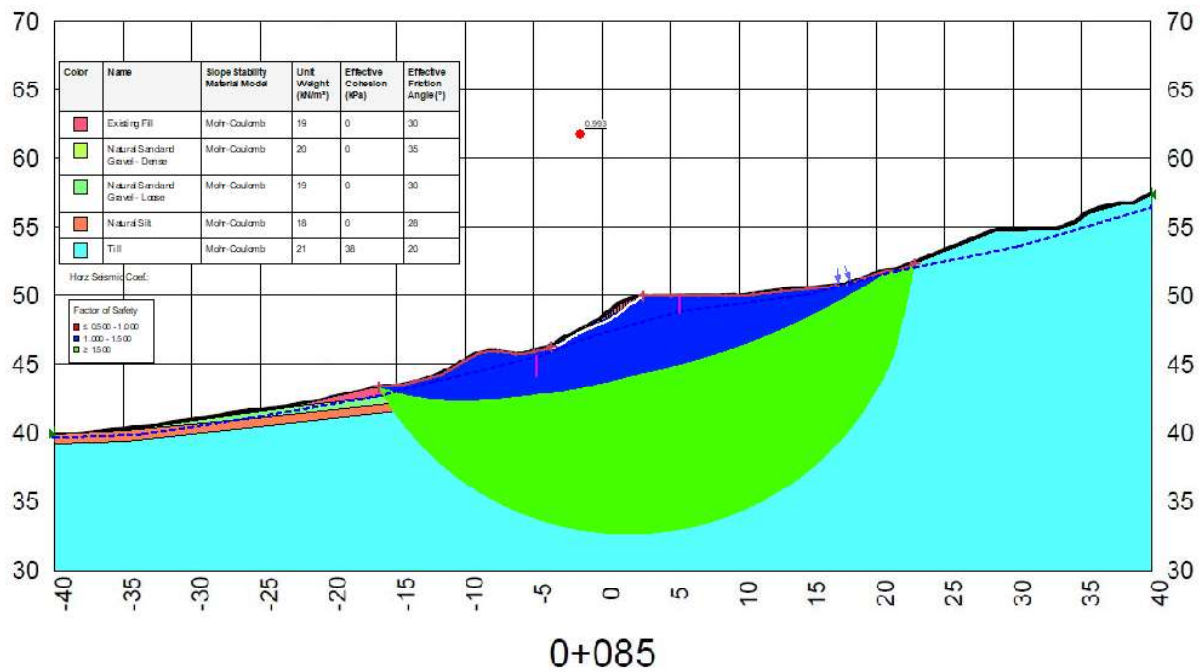
## Slope Stability Analysis Results

# ATTACHMENT A

## Zone 1-0+085– Existing Conditions – Model

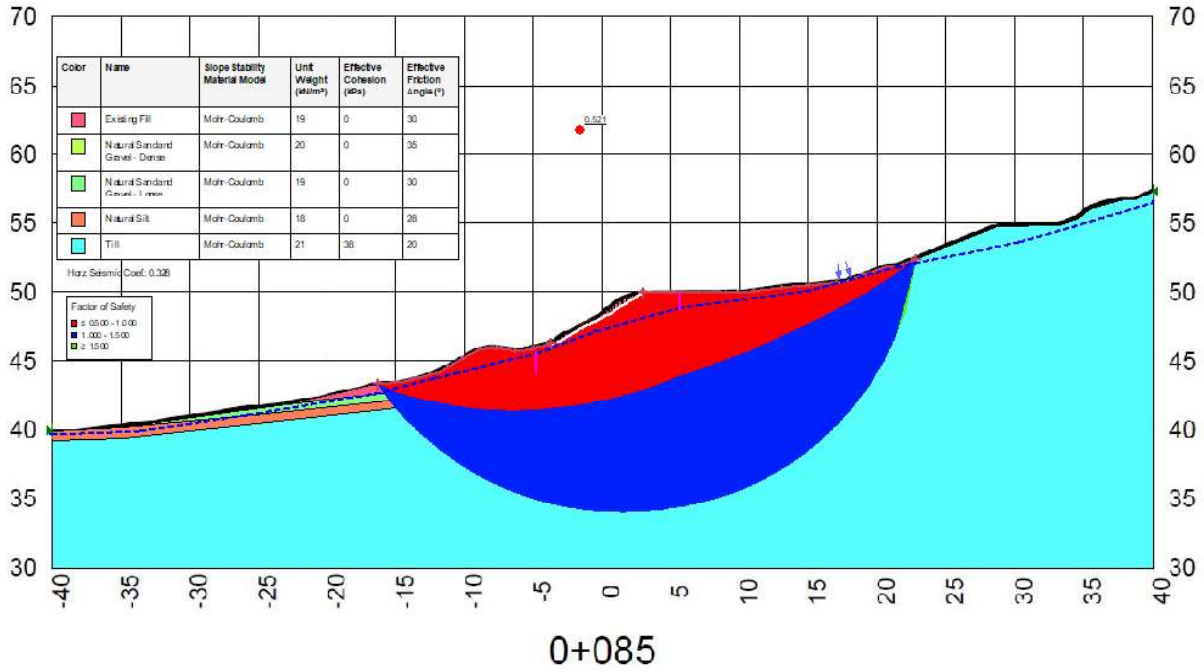


## Zone 1-0+085– Existing Conditions – Static

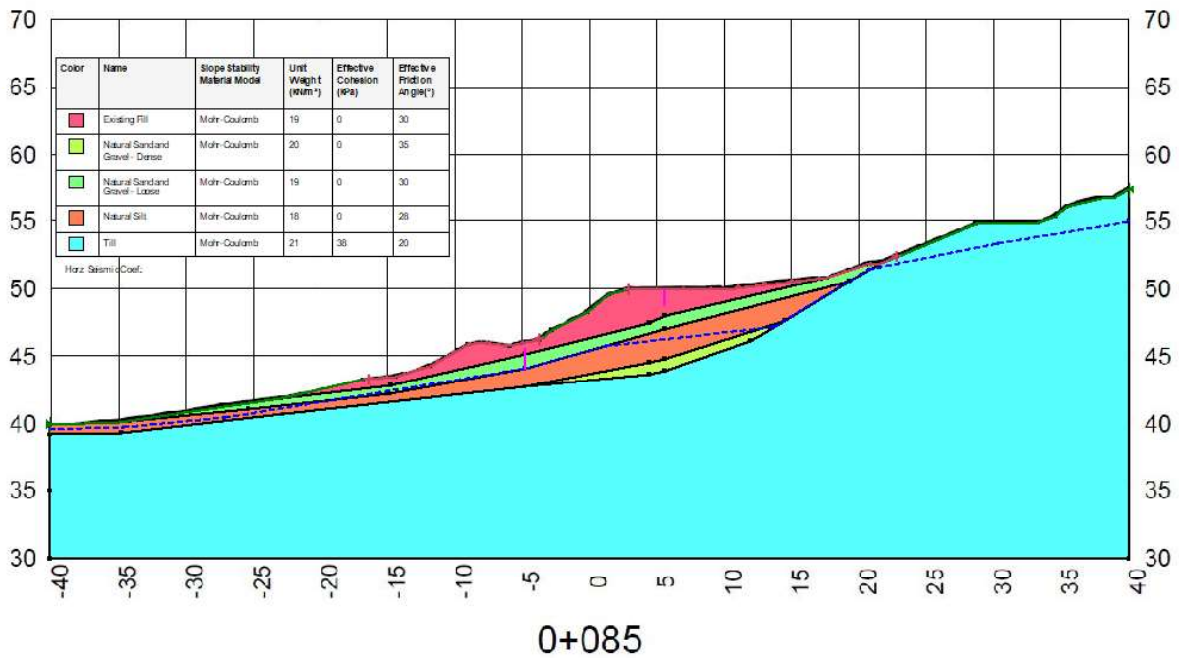


# ATTACHMENT A

Zone 1-0+085– Existing Conditions – 1 in 475 year

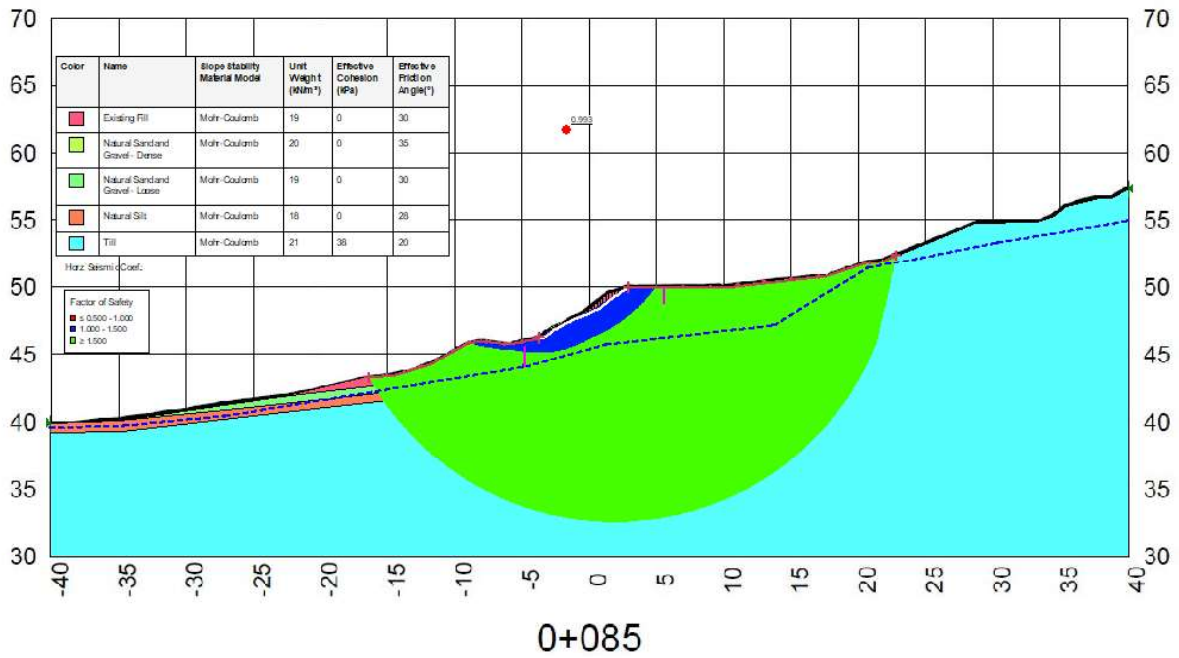


Zone 1-0+085– Slope Drainage – Model

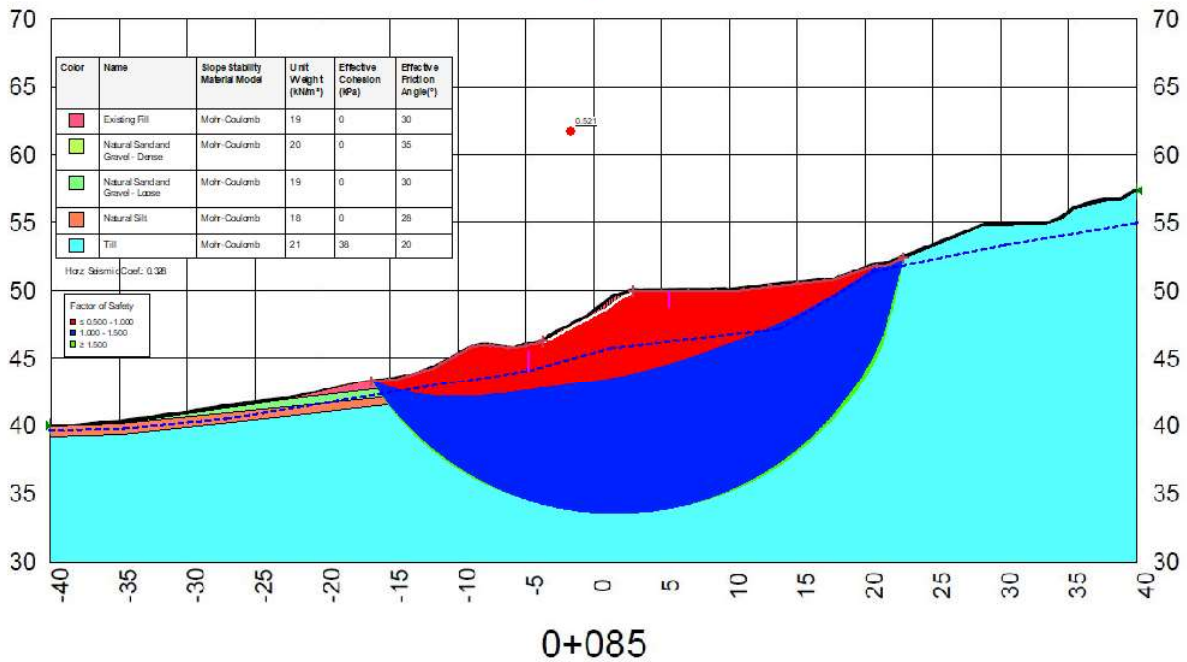


# ATTACHMENT A

## Zone 1-0+085– Slope Drainage– Static

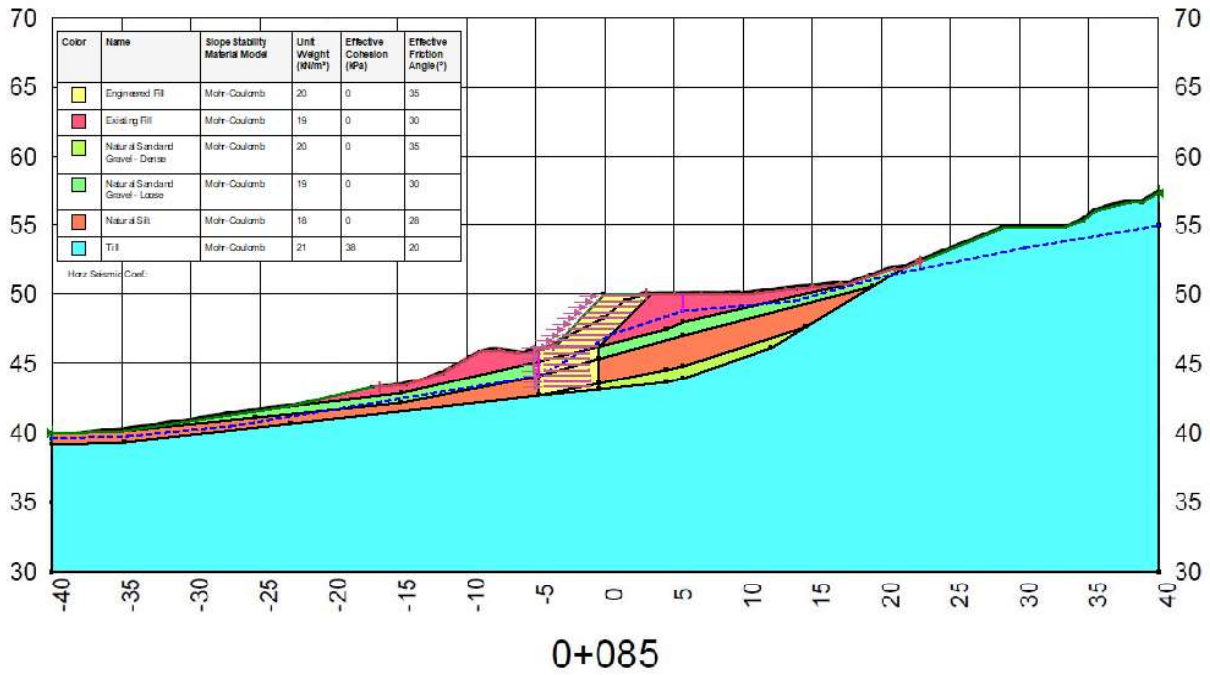


## Zone 1-0+085– Slope Drainage – 1 in 475 year

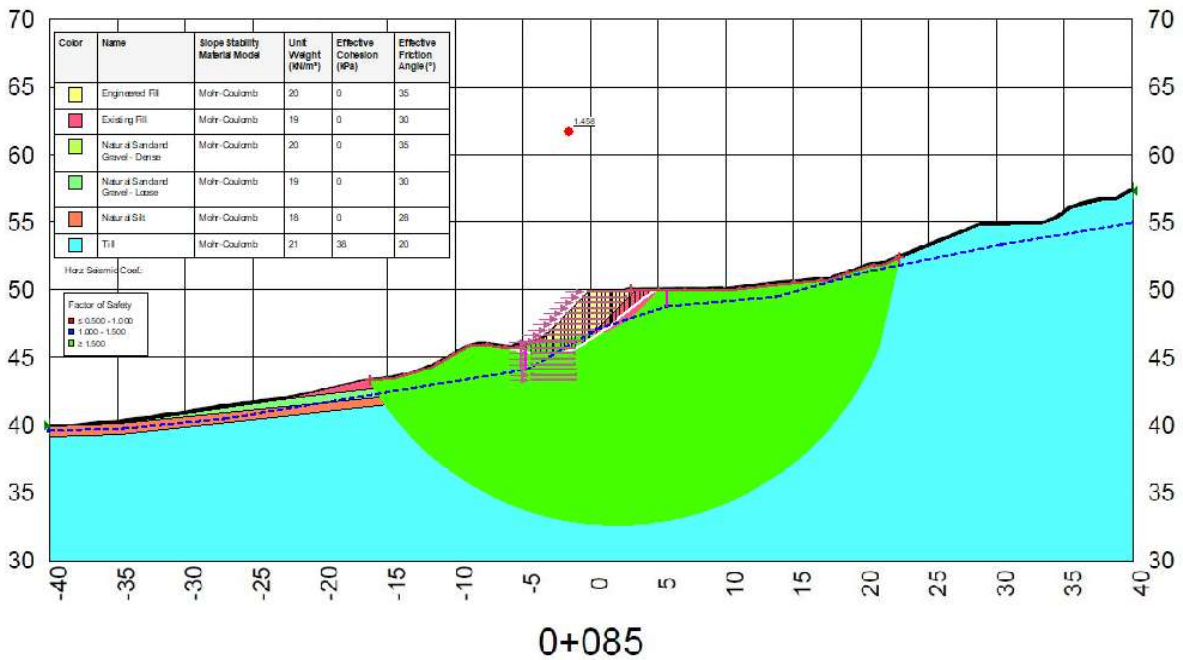


# ATTACHMENT A

Zone 1-0+085- 1 to 1 MSE Slope – Model



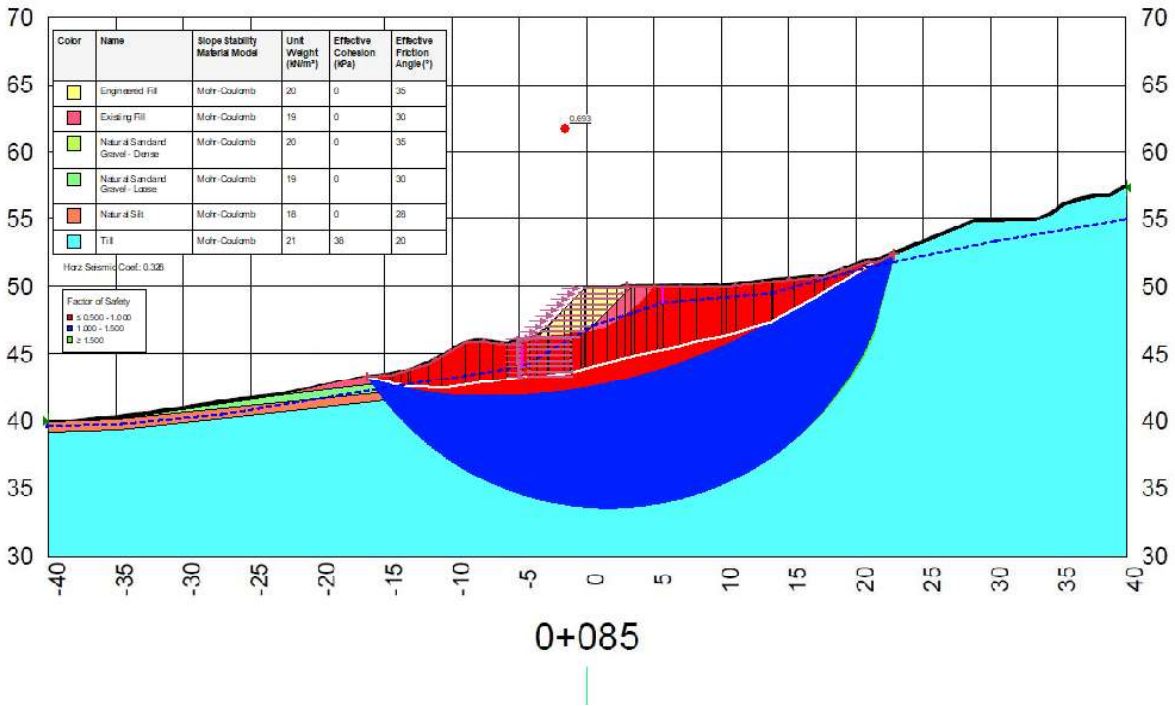
Zone 1-0+085- 1 to 1 MSE Slope – Static





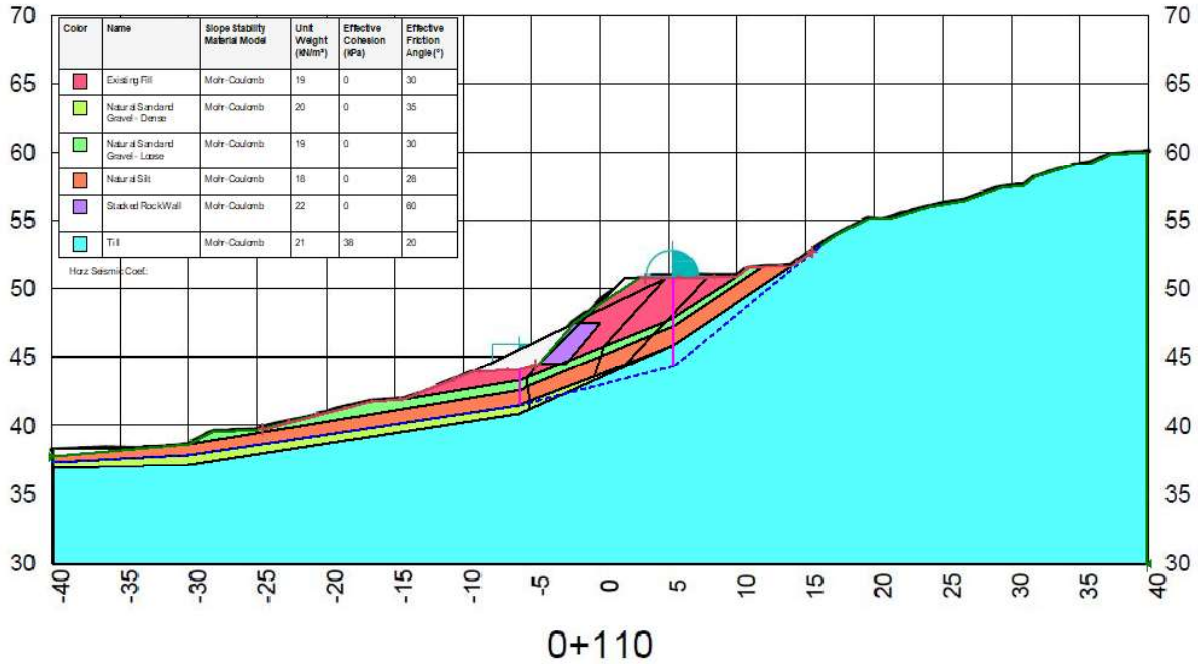
# ATTACHMENT A

Zone 1-0+085- 1 to 1 MSE Slope – 1 in 475 year

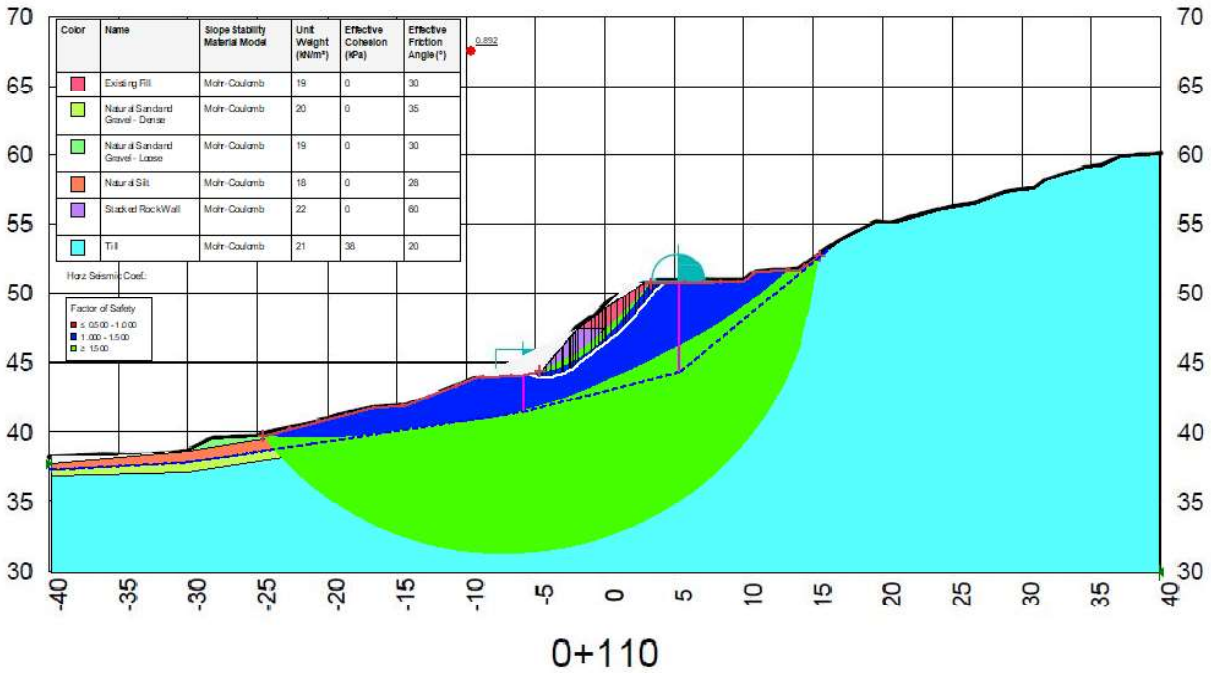


# ATTACHMENT A

## Zone 2- 0+110 – Existing Conditions – Model

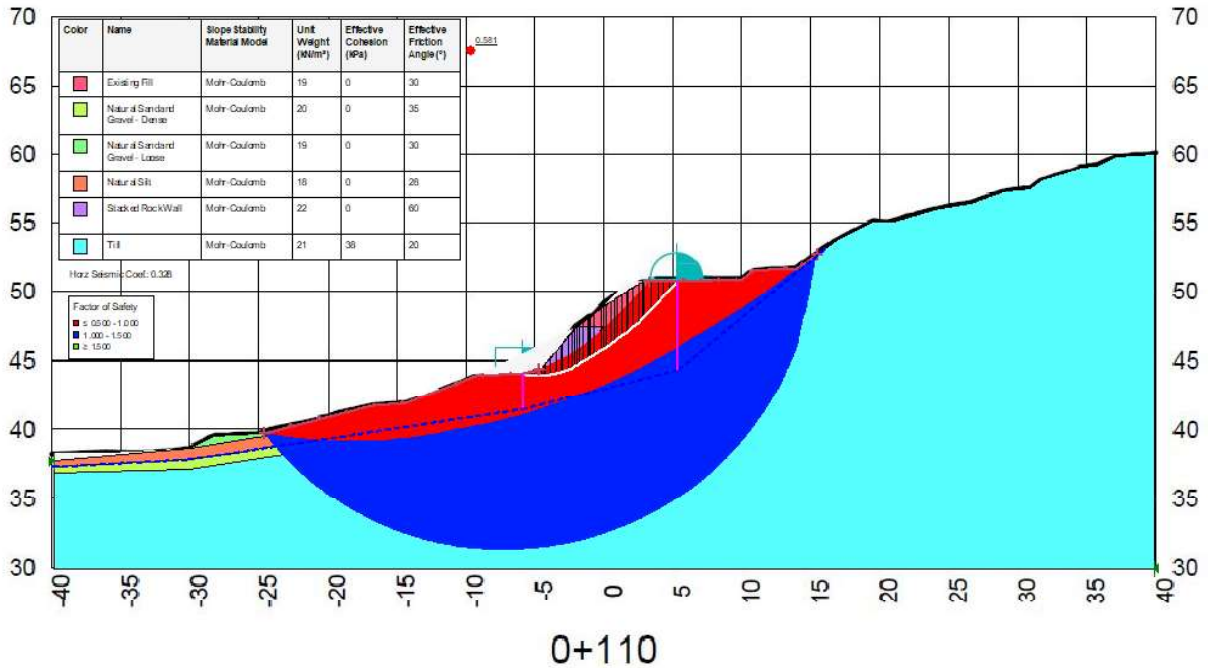


## Zone 2- 0+110 – Existing Conditions – Static

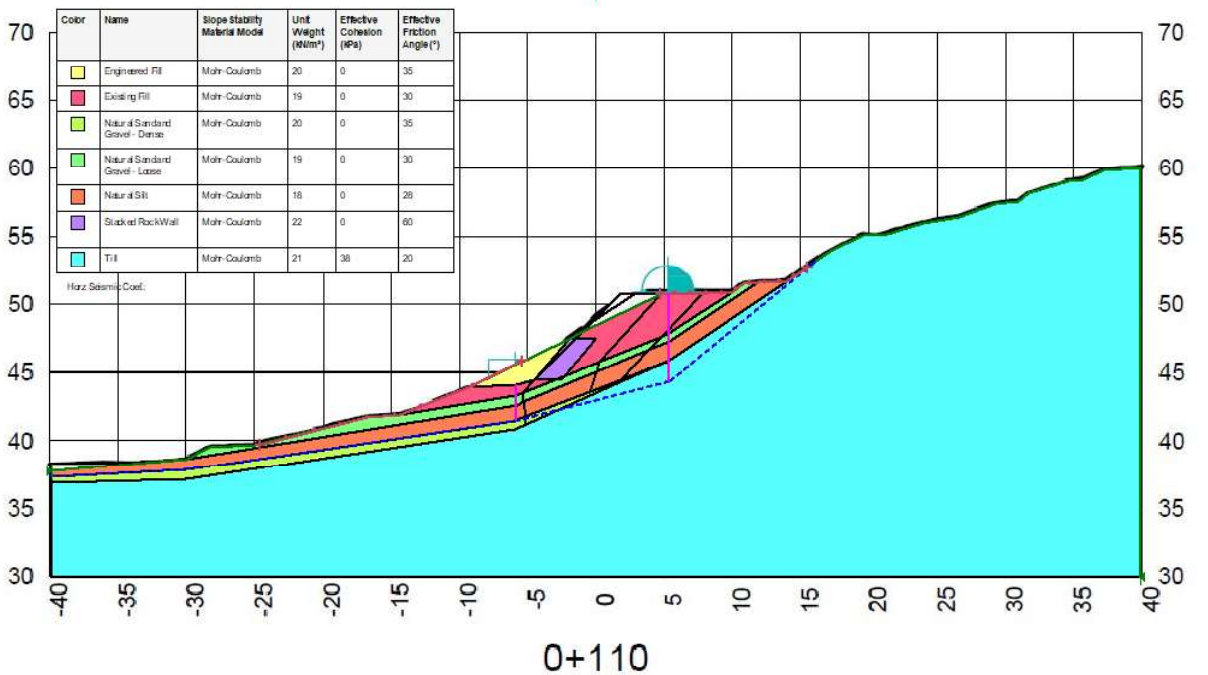


# ATTACHMENT A

## Zone 2- 0+110 – Existing Conditions – 1 in 475 year

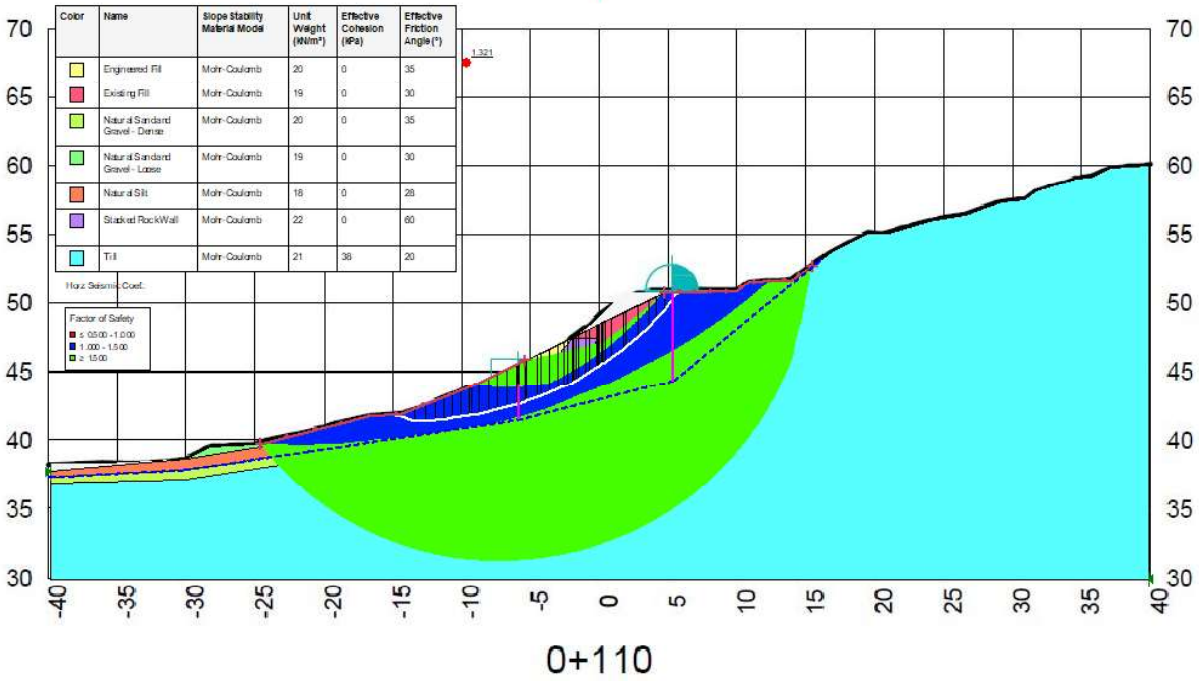


## Zone 2- 0+110 – 2 to 1 Buttrass – Model

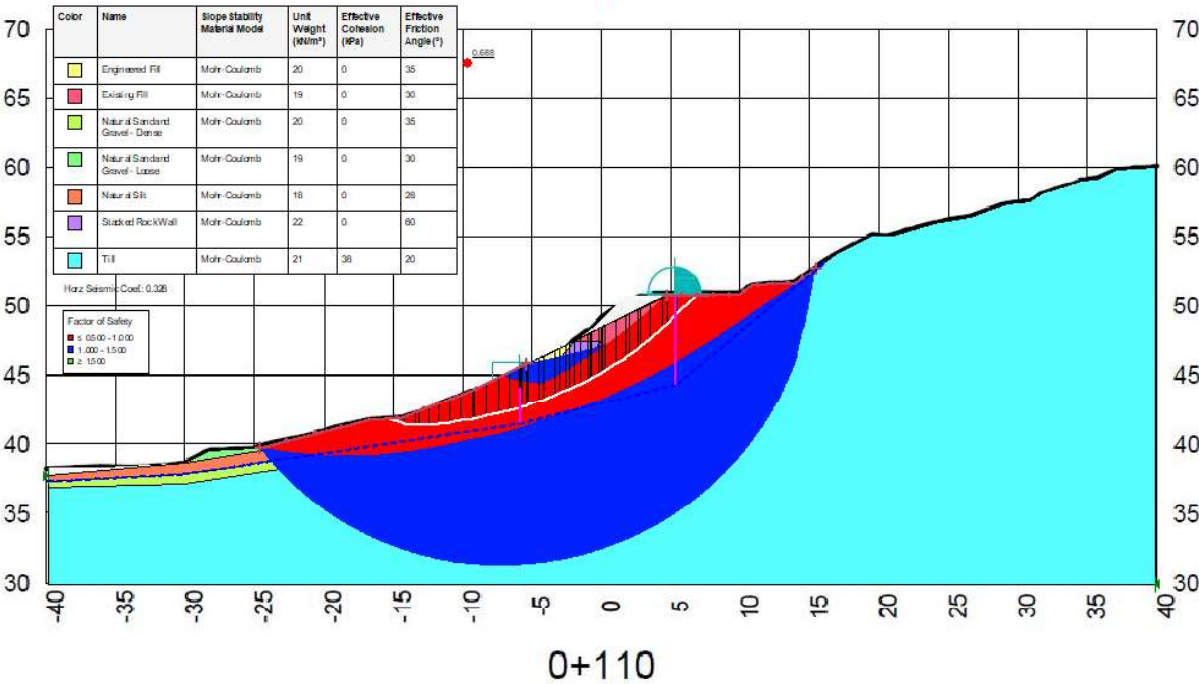


# ATTACHMENT A

## Zone 2- 0+110 – 2 to 1 Buttriss – Static

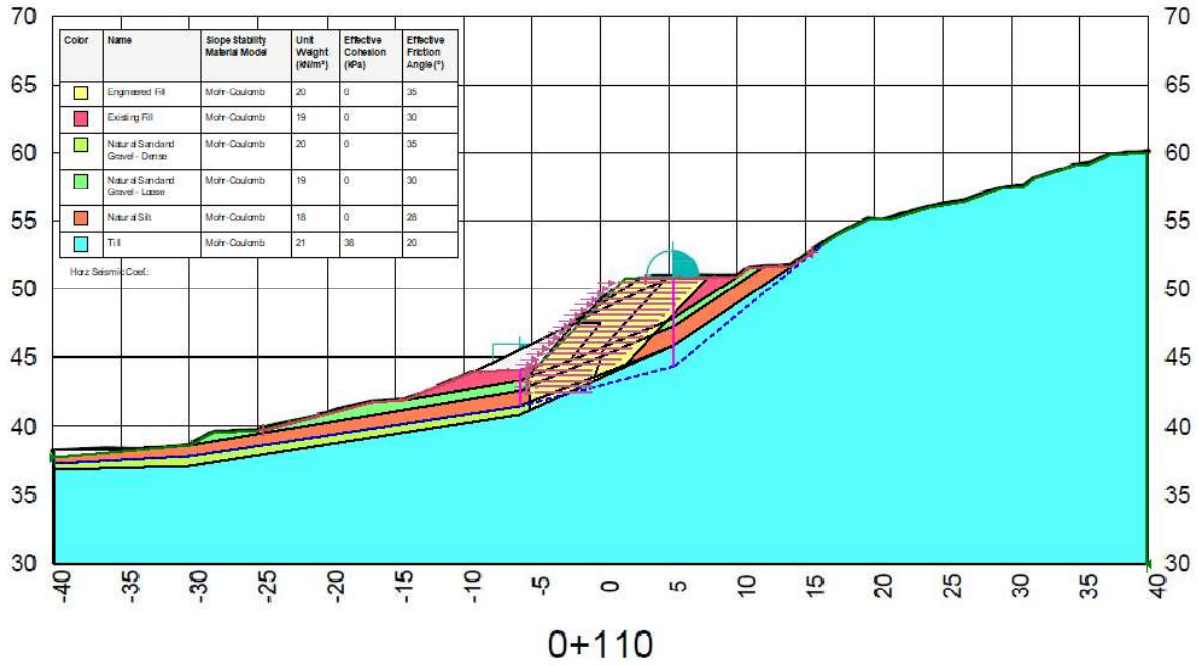


## Zone 2- 0+110 – 2 to 1 Buttriss – 1 in 475 year

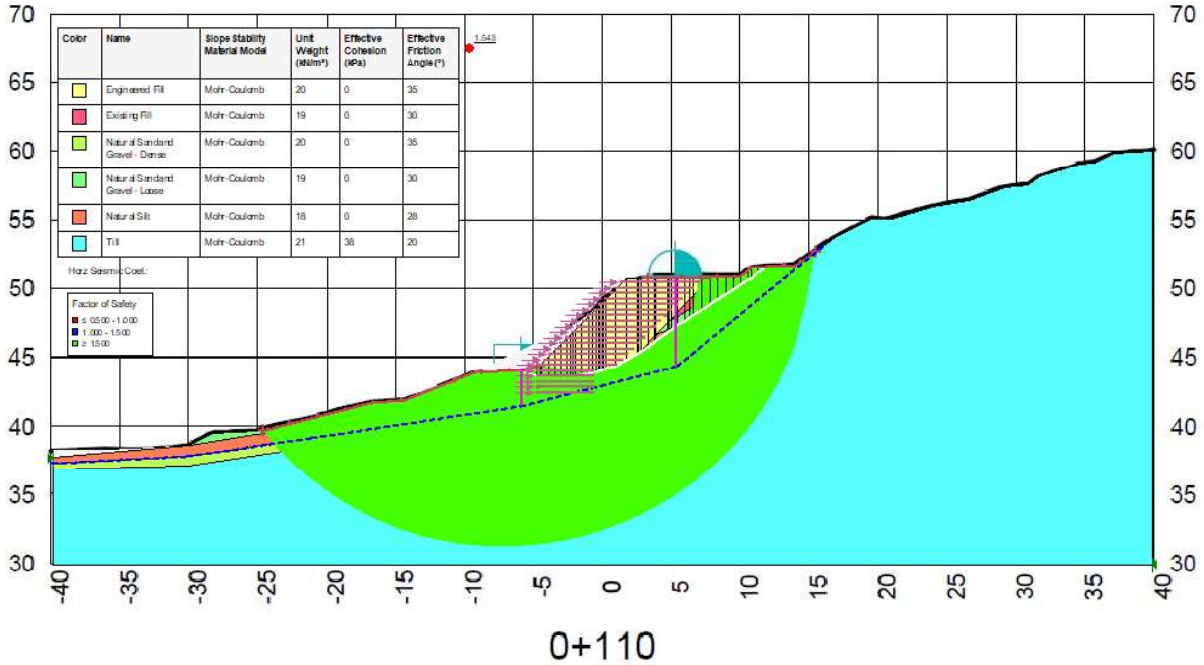


# ATTACHMENT A

Zone 2- 0+110 – 1 to 1 MSE Slope – Model

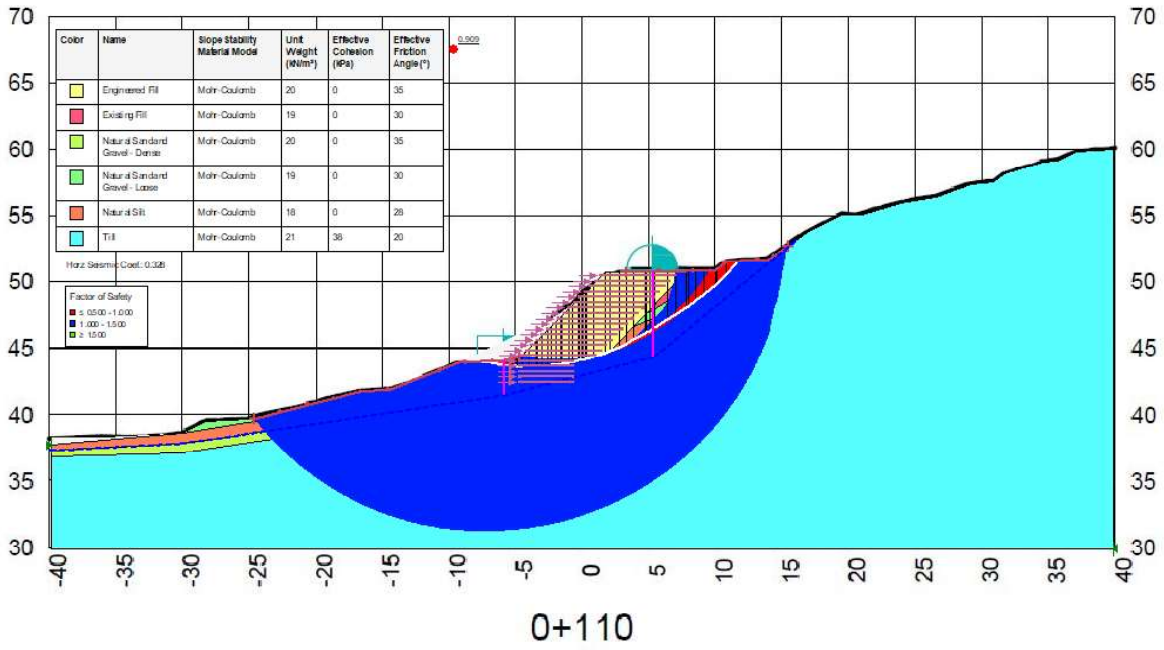


Zone 2- 0+110 – 1 to 1 MSE Slope – Static



# ATTACHMENT A

Zone 2- 0+110 – 1 to 1 MSE Slope – 1 in 475 year



# APPENDIX F

## Class C Cost Estimate

ATTACHMENT A

| ITEM NO.   | DESCRIPTION  | UNIT         | UNIT PRICE   | Option 1 - Full Remediation |                        | Option 2 - Buttress Slope |                      |
|------------|--|--------------|--------------|-----------------------------|------------------------|---------------------------|----------------------|
|            |  |              |              | QUANTITY                    | AMOUNT                 | QUANTITY                  | AMOUNT               |
| <b>1.0</b> | <b>SITE PREPARATION:</b>   |              |              |                             |                        |                           |                      |
| 1.1        | Mobilization / Demobilization                                      | Lump Sum     | \$ 60,000.00 | 1.00                        | \$ 60,000.00           | 0.75                      | \$ 45,000.00         |
| 1.2        | Control of Public Traffic  | Lump Sum     | \$ 35,000.00 | 1.00                        | \$ 35,000.00           | 0.80                      | \$ 28,000.00         |
| 1.3        | Public Notification  | Lump Sum     | \$ 1,500.00  | 1.00                        | \$ 1,500.00            | 1.00                      | \$ 1,500.00          |
| 1.4        | Location of Existing Structures Utilities (storm, sanitary, water) | Lump Sum     | \$ 2,500.00  | 1.00                        | \$ 2,500.00            | 1.00                      | \$ 2,500.00          |
| 1.5        | Sediment management  | Lump Sum     | \$ 8,500.00  | 1.00                        | \$ 8,500.00            | 1.00                      | \$ 8,500.00          |
|            | <b>SITE PREPARATION SUBTOTAL</b>                                   |              |              |                             | <b>\$ 107,500.00</b>   |                           | <b>\$ 85,500.00</b>  |
| <b>2.0</b> | <b>ROAD RESTORATION:</b>   |              |              |                             |                        |                           |                      |
| 2.1        | Remove Existing Asphalt, all thicknesses                           | Square metre | \$ 18.00     | 900.00                      | \$ 16,200.00           | 450.00                    | \$ 8,100.00          |
| 2.2        | Granular base - 100 mm thickness                                   | Square metre | \$ 23.00     | 990.00                      | \$ 22,770.00           | 490.00                    | \$ 11,270.00         |
| 2.3        | Granular sub-base - 250 mm thickness                               | Square metre | \$ 22.00     | 1000.00                     | \$ 22,000.00           | 500.00                    | \$ 11,000.00         |
| 2.4        | Asphaltic concrete paving 75mm thickness                           | Square metre | \$ 80.00     | 900.00                      | \$ 72,000.00           | 450.00                    | \$ 36,000.00         |
| 2.5        | Asphalt Water Control Curb   | Lineal metre | \$ 95.00     | 150.00                      | \$ 14,250.00           | 150.00                    | \$ 14,250.00         |
|            | <b>ROAD RESTORATION SUBTOTAL</b>                                   |              |              |                             | <b>\$ 147,220.00</b>   |                           | <b>\$ 80,620.00</b>  |
| <b>3.0</b> | <b>EARTHWORKS:</b>   |              |              |                             |                        |                           |                      |
| 3.1        | Clearing and grubbing of slope (includes tree removal)             | Square metre | \$ 35.00     | 2250.00                     | \$ 78,750.00           | 2250.00                   | \$ 78,750.00         |
| 3.2        | Common excavation, off-site disposal                               | Cubic metre  | \$ 35.00     | 11000.00                    | \$ 385,000.00          | 1125.00                   | \$ 39,375.00         |
| 3.3        | Import Road Embankment Fill  | Cubic metre  | \$ 52.00     | 11000.00                    | \$ 572,000.00          | 2250.00                   | \$ 117,000.00        |
| 3.4        | Natural Area Slope Seeding, includes growing medium                | Square metre | \$ 20.00     | 2250.00                     | \$ 45,000.00           | 2250.00                   | \$ 45,000.00         |
|            | <b>EARTHWORKS SUBTOTAL</b>   |              |              |                             | <b>\$ 1,080,750.00</b> |                           | <b>\$ 280,125.00</b> |





THE TOWN OF LADYSMITH  
SECOND AVE. SLOPE STABILITY OPTIONS  
CLASS "C" CONSTRUCTION COST ESTIMATE

Consultant : McElhanney Ltd.  
Prepared By: C.Pogson, P.Eng.  
Review By: C. Fernandez, P.Eng.

| Notes: |   |    |              |               |
|--------|---|----|--------------|---------------|
|        | <b>SITE PREPARATION SUBTOTAL</b>          | \$ | 107,500.00   | \$ 85,500.00  |
|        | <b>ROAD RESTORATION SUBTOTAL</b>          | \$ | 147,220.00   | \$ 80,620.00  |
|        | <b>EARTHWORKS SUBTOTAL</b>                | \$ | 1,080,750.00 | \$ 280,125.00 |
|        | <b>WATERWORKS SUBTOTAL</b>                | \$ | 81,550.00    | \$ -          |
|        | <b>SANITARY SEWER SUBTOTAL</b>            | \$ | 20,600.00    | \$ -          |
|        | <b>STORM SEWER SUBTOTAL</b>               | \$ | 65,000.00    | \$ 65,000.00  |
|        | <b>MISCELLANEOUS SUBTOTAL</b>             | \$ | 10,500.00    | \$ -          |
|        | <b>SUBTOTAL CONSTRUCTED WORKS</b>         | \$ | 1,513,120.00 | \$ 511,245.00 |
|        | <b>CONTINGENCY (40%)</b>                  | \$ | 605,248.00   | \$ 204,498.00 |
|        | <b>ENGINEERING (10%)</b>                  | \$ | 211,836.80   | \$ 71,574.30  |
|        | <b>TOTAL CONSTRUCTED WORKS (LESS GST)</b> | \$ | 2,118,368.00 | \$ 715,743.00 |
|        | <b>GST (5%)</b>                           | \$ | 105,918.40   | \$ 35,787.15  |
|        | <b>TOTAL WITH GST</b>                     | \$ | 2,224,286.40 | \$ 751,530.15 |

1) A Class "C" Construction Cost Estimate is an estimated prepared with limited site information and based on probable conditions affecting the project. It represents the summation of all identifiable project elemental costs and is used for program planning, to establish a more specific definition of client need and to obtain preliminary approval.

2) Estimated costs are derived from recent Contractor Pricing for the project, but there is no warranty that actual cost will not vary. McElhanney accepts no liability for actual cost which may vary from the estimated construction costs provided herein.



# APPENDIX G

## Statement of Limitations



## Statement of Limitations – Geotechnical Services

---

**Use of this Report.** This report was prepared by McElhanney Ltd. ("McElhanney") for the particular site, design objective, development and purpose (the "Project") described in this report and for the exclusive use of the client identified in this report (the "Client"). The data, interpretations and recommendations pertain to the Project and are not applicable to any other project or site location and this report may not be reproduced, used or relied upon, in whole or in part, by a party other than the Client and Building Authority, without the prior written consent of McElhanney. The Client may provide copies of this report to its affiliates, contractors, subcontractors and regulatory authorities for use in relation to and in connection with the Project provided that any reliance, unauthorized use, and/or decisions made based on the information contained within this report are at the sole risk of such parties. McElhanney will not be responsible for the use of this report on projects other than the Project, where this report or the contents hereof have been modified without McElhanney's consent, to the extent that the content is in the nature of an opinion, and if the report is preliminary or draft. This is a technical report and is not a legal representation or interpretation of laws, rules, regulations, or policies of governmental agencies. The professional services retained for this Project include only the geotechnical aspects of the subsurface conditions at the site, unless otherwise specifically stated and identified in this report. In particular, environmental conditions such as surface and subsurface contamination are outside the scope of this report.

**Standard of Care and Disclaimer of Warranties.** This study and report have been prepared in accordance with generally accepted engineering and scientific judgments, principles and practices. McElhanney expressly disclaims any and all warranties in connection with this report including, without limitation, any warranty that this report and the associated site review work has uncovered all potential geotechnical liabilities associated with the subject property.

**Effect of Changes.** All evaluations and conclusions stated in this report are based on facts, observations, site-specific details, legislation and regulations as they existed at the time of the site assessment. Some conditions are subject to change over time and the Client recognizes that the passage of time, natural occurrences, and direct or indirect human intervention at or near the site may substantially alter such evaluations and conclusions. Construction activities can significantly alter soil, rock and other geologic conditions on the site. McElhanney should be requested to re-evaluate the conclusions of this report and to provide amendments as required prior to any reliance upon the information presented herein upon any of the following events: a) any changes (or possible changes) as to the site, purpose, or development plans upon which this report was based, b) any changes to applicable laws subsequent to the issuance of the report, c) new information is discovered in the future during site excavations, construction, building demolition or other activities, or d) additional subsurface assessments or testing conducted by others.

**Subsurface Risks.** Soil, rock and groundwater data were collected in general accordance with the standards and methods described in the document. The classification and identification of soils, rocks and geologic formations was based on commonly accepted methods employed in the practice of geotechnical engineering and related disciplines. Interpretations of groundwater levels and flow direction are based on water level observations at selected test hole locations and are expected to fluctuate. Observations at test holes indicate the approximate subsurface conditions at those locations only. Subsurface conditions between test holes were based, by necessity, on judgement and assumptions of what exists between the actual locations sampled, and may vary significantly from actual site conditions and all persons making use of this report should be aware of, and accept, this risk. Even a comprehensive sampling and testing program, implemented in accordance with appropriate equipment by experienced personnel, may fail to detect all or certain conditions.

**Information from Client and Third Parties.** McElhanney has relied in good faith on information provided by the Client and third parties noted in this report and has assumed such information to be accurate, complete, reliable, non-fringing, and fit for the intended purpose without independent verification. McElhanney accepts no responsibility for any deficiency, misstatements or inaccuracy contained in this report as a result of omissions or errors in information provided by third parties or for omissions, misstatements or fraudulent acts of persons interviewed.

**Underground Utilities and Damages.** In the performance of the services, McElhanney has taken reasonable precautions to avoid damage or injury to subterranean structures or utilities. Subsurface sampling may result in unavoidable contamination of certain subsurface areas not known to be previously contaminated such as, but not limited to, a geologic formation, the groundwater or other hydrous body. McElhanney will adhere to an appropriate standard of care during the conduct of any subsurface sampling.

**Independent Judgments.** McElhanney will not be responsible for the independent conclusions, interpretations, interpolations and/or decisions of the Client, or others, who may come into possession of this report, or any part thereof. This restriction of liability includes decisions made to purchase, finance or sell land or with respect to public offerings for the sale of securities.

**Construction.** The subsurface information contained in this report were obtained for the owner's information and design. The extent and detail of assessments necessary to determine all relevant conditions that may affect construction costs would normally be greater than the assessments carried out for this report. Accordingly, a contingency fund to allow for the possibility of variations of subsurface conditions should be included in the construction budget to cover costs associated with modifications of the design and construction procedures resulting from conditions that vary from the assumptions in this report. If during construction, subsurface conditions are found to be other than those described in this report, McElhanney is to be notified and may alter or modify the geotechnical report recommendations. If McElhanney is not retained to provide services during construction, then McElhanney is not responsible for confirming or recording that subsurface conditions do not materially differ from those interpreted conditions contained in this report or for confirming or recording that construction activities have not adversely affected subsurface conditions or the recommendations contained in this report.

**Contact**

Christopher Fernandez, M.Sc. P.Eng.

Geotechnical Engineer

[cfernandez@mcelhanney.com](mailto:cfernandez@mcelhanney.com)



**STAFF REPORT TO COUNCIL**

**Report Prepared By:** Chris Geiger, Manager of Protective Services  
**Reviewed By:** Allison McCarrick, CAO  
**Meeting Date:** October 15, 2024  
**File No:** 1855-20  
**Re:** **UBCM – Community Emergency Preparedness Fund Grant Application**

**RECOMMENDATION:**

That Council:

1. Support the Town’s application to the UBCM Community Emergency Preparedness Fund, Volunteer and Composite Fire Department Equipment & Training Grant in the amount of \$ 35,000 for a turnout gear decontamination washer and dryer cabinet;
2. Direct staff to include the above funding amount and source in the 2025-2029 Financial Plan; and
3. Confirm its willingness to provide overall grant management subject to receipt of grant funding.

**EXECUTIVE SUMMARY:**

Town staff have applied for a grant in the amount of \$35,000 through the UBCM Community Emergency Preparedness Fund, Volunteer and Composite Fire Department Equipment and Training Program. The grant would provide funding to replace the department’s aged turnout gear decontamination washer and (non-functioning) dryer with a NFPA compliant washer/extractor and drying cabinet.

**PREVIOUS COUNCIL DIRECTION:**

|                    |                |   |
|--------------------|----------------|---|
| CS<br>2022-<br>281 | 2022-<br>11-15 | That Council:<br>1. Support Ladysmith Fire/Rescue’s application to the UBCM Community Emergency Preparedness Fund Volunteer & Composite Fire Department Equipment & Training grant for fire fighting equipment for low to medium rise buildings; and<br>2. Confirm its willingness to provide overall grant management subject to receipt of grant funding. |
| CS<br>2019-<br>336 | 2019-<br>10-21 | That Council:<br>1. Direct staff to submit a funding application to UBCM’s Community Emergency Preparedness Fund requesting \$25,000 for the training of six new  |



|  |   |
|--|---|
|  | Fire Department volunteer paid on-call recruits; and<br>2. Confirm the willingness to provide overall grant management. |
|--|---|

**INTRODUCTION/BACKGROUND:**

Ladysmith’s firefighters are exposed to products of combustion and other carcinogens on a regular basis. They are protected to a certain extent by their turnout gear, but this protection is vastly decreased, and cross contamination is much more likely, if the contaminants are not removed. Ladysmith Fire/Rescue has been using a commercial triple load washer as a turnout gear decontamination extractor for more than 30 years. This washer was likely the best tool available at the time but was never designed as a decontamination extractor and is not NFPA 1851 compliant. The drying cabinet has not functioned for many years and is falling apart. UBCM CEPF funding stream has identified that these items fall into the eligible expenditures for volunteer and composite fire departments equipment and training.

**ALTERNATIVES:**

Council can choose to:

1. Not support the Town’s application for this grant funding and withdraw the application.

**FINANCIAL IMPLICATIONS:**

The Fire/Rescue capital budget provides funds to purchase essential equipment. New equipment has at times been funded outside of the current tax base. This equipment will be added to the Ladysmith Fire/Rescue inventory of firefighting equipment and will be subject to repair or replacement as needed within the operating and capital budgets moving forward.

**LEGAL IMPLICATIONS:**

N/A

**CITIZEN/PUBLIC RELATIONS IMPLICATIONS:**

Ladysmith Fire/Rescue enjoys a high level of support amongst the population of Ladysmith. Typically, news that Ladysmith Fire/Rescue is acquiring equipment that builds capacity and adds to operational readiness is met with support, particularly if that equipment can be secured with funding from outside sources.

**INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS:**

If successful, the Fire Department and the Finance Department will work together to purchase the equipment in accordance with the Town’s purchasing policy.

**ALIGNMENT WITH STRATEGIC PRIORITIES:**

- |   |  |
|---|--|
| <input type="checkbox"/> Core Infrastructure                    | <input type="checkbox"/> Economy                   |
| <input type="checkbox"/> Official Community Plan Implementation | <input type="checkbox"/> Leadership                |
| <input type="checkbox"/> Waterfront Area Plan                   | <input checked="" type="checkbox"/> Not Applicable |

***I approve the report and recommendations.***  
**Allison McCarrick, Chief Administrative Officer**



**STAFF REPORT TO COUNCIL**

**Report Prepared By:** Jake Belobaba, Director of Development Services  
**Reviewed By:** Allison McCarrick, CAO  
**Meeting Date:** October 15, 2024  
**File No:** 1855-23-08  
**Re:** **Rural Economic Diversification and Infrastructure Program (REDIP)**

**RECOMMENDATION:**

That Council direct staff to include in the 2025-2029 Financial Plan \$131,250 for the planning of a mountain bike trail network with the funds to come from the Rural Economic Diversification and Infrastructure Program for \$100,000 and the remainder to come from prior year surplus.

**EXECUTIVE SUMMARY:**

Staff are recommending that the Town submit a second application to the Rural Economic Diversification and Infrastructure Program (REDIP) with the support of Mosaic Forest Products and the Stz’uminus First Nation to seek funding for Mountain Bike Trail Development.

**PREVIOUS COUNCIL DIRECTION:**

|             |            |   |
|-------------|------------|---|
| CS 2023-223 | 2023-09-26 | That Council direct staff to include in the 2024-2028 Financial Plan \$125,000 for the planning of a mountain bike trail network with the funds to come from the Rural Economic Diversification and Infrastructure Program for \$100,000 and the remainder to come from prior year surplus. |
|-------------|------------|---|

**INTRODUCTION/BACKGROUND:**

On September 17, 2018 Council received the final report on [Ladysmith's Economic Development Strategy](#). The Strategy, developed in collaboration with key community stakeholders<sup>1</sup>, listed developing a mountain bike trail network as an “Immediate Priority Project” and ranked the project highest in potential economic impacts, drawing parallels to similar communities such as Squamish.

Mountain biking (not to be confused with the broader category of “cycling”) involves skilled riders using specialized bikes and equipment, to ride off-road, purpose-built trails. Nonetheless,

<sup>1</sup> The steering committee included representatives from the Stz’uminus First Nation, Chamber of Commerce, Community Futures, Nanaimo Airport Commission, Chamber of Commerce and Ladysmith Downtown Business Association.



mountain bike trails in BC are rarely restricted to mountain bikers and are frequently used by hikers, dog walkers, trail runners, equestrians and other users. Mountain bike trails have also proven to be highly compatible with forestry in BC; many of BC's best trail networks are on active forestry lands.

Since its entry into the mainstream in the 1990s, mountain biking has exploded in popularity. Mountain bike tourism grew in tandem with the popularity of the sport, with riders travelling not only to high-profile locales like Whistler, but also smaller communities. Today, mountain biking is a 70 million dollar per year industry in BC. It is actively promoted by Destination BC and has a proven track record of creating economic resiliency in communities with resource-based economies (e.g., Squamish, Carcross YT, Cumberland and Burns Lake, among others). A sanctioned trail network offers a significant and mutual, economic opportunity for both the Town (where adjacent retail and food and beverage services are located) and the Stz'uminus First Nation (which is the only major accommodation provider within a 15km radius). It is for these reasons that this project was assigned such a high priority in the Town's Economic Development Strategy.

Ladysmith has several unique advantages as a mountain bike destination:

- Mountain biking, as the name implies, relies on terrain, and Ladysmith is located at the base of mountains. The combined vertical elevation of the Brenton, Coronation, Hall and Stanton Peak Massifs exceeds 4,200 meters and the foothills closer to Town offer gentler, undulating terrain. This topography supports the full spectrum of mountain biking subtypes and skill levels.
- Potential "ride zones" are situated for easy connections to the town centre and residential areas by either proximity or existing multi-use trail systems (e.g., the Stocking Lake and Trans-Canada trail networks and old logging roads).
- Southern Vancouver Island has the warmest winter temperatures in Canada. Ladysmith will have one of the longest, snow-free riding seasons in the country. This will draw riders in the fall, winter and spring who live in areas that are "snowed in".
- Ladysmith is close to major transportation infrastructure—including an international airport.
- The above features of Ladysmith's potential trail network cater to the full spectrum of mountain biking sub-disciplines and abilities and provides a major competitive advantage for Ladysmith as a mountain bike "destination".

Potential areas for mountain biking are located to the west of town and approximately 66% of this land is owned by Mosaic. Almost all of the remaining lands are Crown land over which the Stz'uminus First Nation holds timber licenses. Unlike jurisdictions like North Cowichan, the Town does not have exclusive tenure over potential riding areas and must obtain permission from tenure holders to build trail networks. This necessitates devising mutually agreed upon trail plans and land use agreements.

Since 2019 staff have engaged with Mosaic and the Stz'uminus First Nation in an attempt to secure access to backcountry areas. These efforts have finally reached a significant milestone where the two tenure holders are in a position to consider permitting access.

### REDIP

The REDIP program is administered by the Provincial Ministry of Jobs, Economic Development and Innovation. The Province will invest up to \$33 million for the Rural Economic Diversification and Infrastructure Program, supporting projects in rural communities that promote:

- Economic diversification
- Resilience
- Clean growth opportunities
- Infrastructure development

There are three funding categories under the program:

- Economic Capacity (REDIP-EC), which provides up to \$100,000 to help communities of less than 2,500 people build internal capacity for economic development.
- Economic Diversification (REDIP-ED), which provides up to \$100,000 for projects that promote economic diversification in communities of less than 25,000 people.
- Forest Impact Transition (REDIP-FIT), which provides up to \$500,000 to support economic recovery and transition in rural communities affected by impacts in the forest sector.

The Town is ineligible for REDIP-EC and likely ineligible for REDIP-FIT<sup>2</sup>. Eligible projects under REDIP-ED include community assessment projects such as identifying community economic development capacity, feasibility studies and engagement. Capital funding is also available for shovel-ready projects.

REDIP is open to local governments, indigenous communities, indigenous development corporations and not-for-profits and allows partnerships with the private sector. The latest round of the program is open until October 31, 2024. The Town applied for REDIP in 2023 but the application was unsuccessful.

### **PROPOSAL:**

Staff are recommending that the Town reapply for REDIP-ED funding. Staff propose that the funding be used to undertake a mountain bike trail planning process that would include:

- Sieve mapping to determine areas suitable for trails based on tenure holder buy in, terrain, connectivity to amenity areas (e.g., Downtown), forestry activities, environmentally sensitive areas, other recreational uses, existing and planned forestry operations and similar factors.

---

<sup>2</sup> REDIP-FIT was developed for the purpose of supporting communities with significant impacts to forestry sector, such as a mill decommissioning or catastrophic wildfire.

- A feasibility and economic impact analysis to determine the return on investment (e.g., food and beverage sales, room night revenue, job creation) of the trail network on the respective economies of the Town and Stz'uminus' communities.
- Identifying companion improvements and programs such as improvements to multi-use trails, amenities (e.g., picnic shelters), facilities and programs that help businesses attract mountain bikers (e.g., bike racks in front of local restaurants, business resources, etc.).
- Regulations and improvements that would minimize user conflicts such as signage and trail rules.
- Preliminary costing.
- The preparation of negotiated tenure agreements.

Ideally, the outcome of the project would create a shovel-ready project that would set the Town up for future funding and approvals.

**ANALYSIS:**

The proposal supports a major initiative under the Economic Development Strategy. Policy 7.1 of Part 7 (Local Economy) of the Town's OCP lists developing a mountain bike trail network as the third highest priority. Arts and Heritage Hub development, and Marina expansion are the top two priorities under this policy, however these projects are well underway under other funding streams and are less ideal for REDIP funding due to their complexity, status and eligibility for different funding programs.

A successful REDIP application sets the stage for a shovel-ready mountain-bike trail network and positions the Town to secure additional funding for trail development. Trail development projects are quick and comparatively inexpensive to implement; it is foreseeable that a trail network could be established and operating within the next five years. Staff recommend submitting a REDIP-ED grant as proposed.

**ALTERNATIVES:**

Council can choose to:

1. Not apply for REDIP.
2. Apply for REDIP for a different project.

**FINANCIAL IMPLICATIONS:**

REDIP-ED covers 80% of project costs. Staff recommend allocating \$31,250 from prior year surplus to cover the Town's portion of the project. Quotes from the previous grant intake have been adjusted by 5%.

**LEGAL IMPLICATIONS:**

N/A

**CITIZEN/PUBLIC RELATIONS IMPLICATIONS:**

If funding is received the project will include consultation with stakeholders.

**INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS:**

If funding is received. Development Services/Economic Development will work closely with Parks and Recreation and other Town departments to implement the project.

**ALIGNMENT WITH STRATEGIC PRIORITIES:**

- |  |   |
|--|---|
| <input type="checkbox"/> Core Infrastructure                               | <input checked="" type="checkbox"/> Economy |
| <input checked="" type="checkbox"/> Official Community Plan Implementation | <input type="checkbox"/> Leadership         |
| <input type="checkbox"/> Waterfront Area Plan                              | <input type="checkbox"/> Not Applicable     |

***I approve the report and recommendation.***

**Allison McCarrick, Chief Administrative Officer**

**TOWN OF LADYSMITH**

**BYLAW NO. 2181**

**A Bylaw to amend Revitalization Tax Exemption Bylaw No. 1625**

---

**WHEREAS** Section 226 of the *Community Charter* authorizes a local government to establish a Revitalization Tax Exemption Program to partially exempt eligible revitalized properties from taxation;

**AND WHEREAS** the Ladysmith Town Council adopted the Revitalization Tax Exemption Bylaw No. 1625;

**NOW THEREFORE** the Municipal Council of the Town of Ladysmith in open meeting assembled, enacts as follows:

**1. AMENDMENTS**

“Town of Ladysmith Revitalization Tax Exemption Bylaw 2007, No. 1625” is hereby amended by deleting Schedule B of the bylaw in its entirety and replacing it with Schedule B as attached to this bylaw.

**2. CITATION**

This bylaw may be cited as "Town of Ladysmith Revitalization Tax Exemption Bylaw 2007, No. 1625 Amendment Bylaw 2024, No. 2181."

**READ A FIRST TIME** on the 24<sup>th</sup> day of September, 2024

**READ A SECOND TIME** on the 24<sup>th</sup> day of September, 2024

**READ A THIRD TIME** on the 24<sup>th</sup> day of September, 2024

**ADOPTED** on the \_\_\_\_\_ day of \_\_\_\_\_, 2024

\_\_\_\_\_  
Mayor

\_\_\_\_\_  
Corporate Officer (S. Bouma)

Town of Ladysmith Bylaw No. 2181

Schedule "B"

| Owner                        | Property Description  |
|------------------------------|---|
| 1639555 Alberta Ltd          | 341 1st Ave<br>Lot A, District Lot 56, Plan VIP52046, Oyster Land District<br>Folio 0126.000  |
| Temperance Group Investments | 32 High Street<br>Lot A, Block B, District Lot 56, Plan VIP703, Oyster Land District, (DD 65840N), lying to the SE of a boundary parallel to & perpendicularly distant 64 ft from the s easterly boundary of said lot |

**TOWN OF LADYSMITH**

**BYLAW NO. 2189**

**A Bylaw to exempt from taxation certain lands and buildings for the year 2025**

---

The Council of the Town of Ladysmith in open meeting assembled enacts as follows:

1. The following land and improvements within the legal boundaries of those properties listed below and to the extent described under Schedule “A” and Schedule “B” attached to and forming part of this bylaw, that are owned or held by a charitable, philanthropic or other not-for-profit corporation, and which the Council considers are used for a purpose that is directly related to the purposes of the corporation, are hereby exempted from taxation under section 224 of the *Community Charter* for the year 2025:

| Count | Organization                           | Address           | Legal Description   |
|-------|--|-------------------|---|
| 1     | Canadian Legion Branch #171            | 621 1st Avenue    | Lot A, Block 8, Plan VIP703, District Lot 56, Oyster Land District, Portion (DD 65840N), Except Plan SLY 64 FT (Except the Section Outline In Bold On Schedule “A”) |
| 2     | Ladysmith Health Care Auxiliary        | 910 1st Avenue    | Block 30, Plan 703A, District Lot 24 (Being a consolidation of lots 1 and 2, see CA7428266), Oyster Land District.  |
| 3     | Ladysmith Resources Centre Association | 314 Buller Street | Lot A, Block 76, Plan VIP703a, District Lot 56, Oyster Land District, Portion (DD B92367) (Shown in Schedule “F”)   |

2. The following land and improvements within the legal boundaries of those properties listed below and to the extent described under Schedule “B”, attached to and forming part of this bylaw, that are owned or held by the municipality and which the Council considers are used for a purpose that is directly related to the purposes of the corporation, are hereby exempted from taxation under section 224 of the *Community Charter* for the year 2025:



| Count | Organization                            | Address              | Legal Description  |
|-------|---|----------------------|--|
| 1     | Ladysmith & District Historical Society | 721 1st Avenue       | Lot 11, Block 7, Plan VIP703, Oyster Land District   |
| 2     | Ladysmith Golf Club Society             | 380 Davis Road       | District Lot 43, Oyster Land District, Except Plan 2478 4670 5873 7527 8922 12027 14051 15693 835r 34197 48247 & VIP57353, Exc E&N Rly R/W Pcl A (DD 24403N) Pcl C (DD 34443I), VIP65242                             |
| 3     | Ladysmith & District Historical Society | 614 Oyster Bay Drive | Lot 4, Plan VIP45800, District Lot 8G,11G,24,56, Oyster Land District, Except Plan VIP64405 VIP71943 VIP72131 (PARENT FOLIO 445-1109-300) (Shown in Schedule "B")  |
| 4     | Ladysmith Maritime Society              | 616 Oyster Bay Drive | Lot 4, Plan VIP45800, District Lot 8G,11G,24,56, Oyster Land District, Except Plan VIP64405 VIP71943 VIP72131, that part included in lease from Town of Ladysmith - Car Shop (Parent Folio 445-1109-300)             |
| 5     | Ladysmith & District Historical Society | 612 Oyster Bay Drive | Lot 4, Plan VIP45800, District Lot 8G,11G,24,56, Oyster Land District, Except Plan VIP64405 VIP71943 VIP72131, that part included in lease from Town of Ladysmith  |
| 6     | Ladysmith & District Historical Society | 1115B - 1st Avenue   | Strata Lot 1, Plan VIS5873, District Lot 118, Oyster Land District, together with an interest in the Common Property In Proportion To The Unit Entitlement Of The Strata Lot As Shown On Form 1 Or V, As Appropriate |
| 7     | Ladysmith Festival of Lights            | 1163 4th Avenue      | Lot A, Plan VIP34438, District Lot 146, Oyster Land District, Portion Part Of Fourth Ave   |

3. The following land and improvements within the legal boundaries of those properties listed below and to the extent described under Schedule "C" and Schedule "D" attached to and forming part of this bylaw, in relation to property that is exempt under section 220 (1)(h) [*buildings for public worship*], an area of land surrounding the exempt building, a hall that the Council considers is necessary to the exempt building and the land on which the hall stands, and an area of land surrounding a hall that is exempt are hereby exempted from taxation under section 224 of the *Community Charter* for the year 2025:

| Count | Organization                        | Address         | Legal Description   |
|-------|-------------------------------------|-----------------|---|
| 1     | United Church of Canada             | 232 High Street | Lot A, Plan VIP63119, District Lot 56, Oyster Land District   |
| 2     | Ladysmith Fellowship Baptist Church | 381 Davis Road  | Lot 1, Plan VIP43316, District Lot 43, Oyster Land District, Except Plan VIP66137   |
| 3     | St. Mary's Catholic Church          | 1135 4th Avenue | District Lot 145, Oyster Land District, Except Plan 33231 & VIP72186 (Specifically the area of land and buildings outlined in bold on Schedule "C") |
| 4     | Pentecostal Assemblies of Canada    | 1149 4th Avenue | Lot A, Plan VIP46331, District Lot 146, Oyster Land District (Specifically the area of land and buildings outlined in red on Schedule "D")          |

4. The following land and improvements within the legal boundaries of those properties listed below and to the extent described under Schedule "E" attached to and forming part of this bylaw, in relation to property that is exempt under section 220 (1)(i) [*senior's homes*], any area of land surrounding the exempt building is hereby exempted from taxation under section 224 of the *Community Charter* for the year 2025:

| Count | Organization                              | Address          | Legal Description   |
|-------|---|------------------|---|
| 1     | Ladysmith Senior Citizens Housing Society | 207 Jamison Road | Lot 1, Plan VIP21490, District Lot 56, Oyster Land District (Specifically The Area Of Land Surrounding The Building Footprint As Shown On Schedule "E") |

5. The following land and improvements within the legal boundaries of those properties listed below for which a grant has been made, after March 31, 1974, under the *Housing Construction (Elderly Citizens) Act* before its repeal, is hereby exempted from taxation under section 224 of the *Community Charter* for the year 2025:

| Count | Organization                              | Address        | Legal Description   |
|-------|---|----------------|---|
| 1     | Ladysmith Senior Citizens Housing Society | 101 1st Avenue | Lot 1, Plan VIP31443, District Lot 56, Oyster Land District |

**6. Citation**

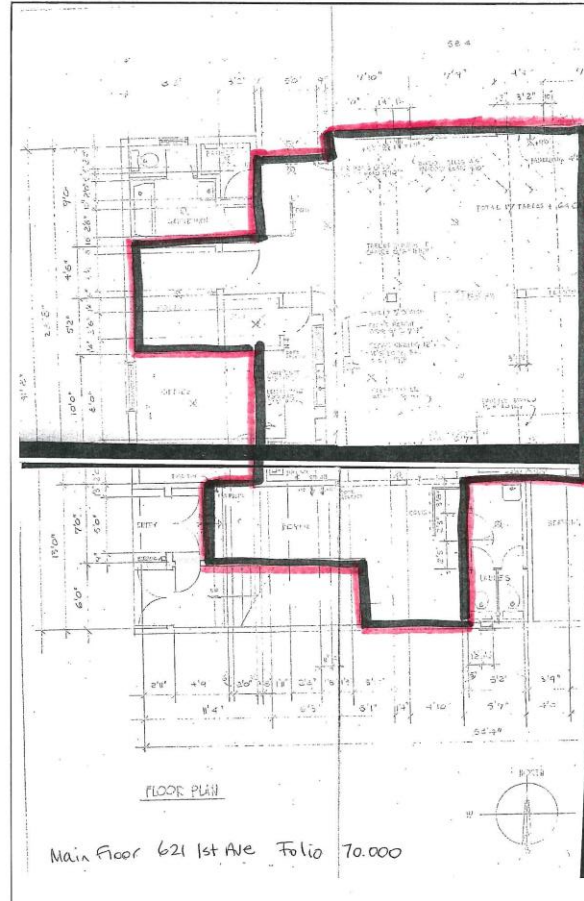
This bylaw may be cited as "2025 Permissive Tax Exemptions Bylaw 2024, No. 2189".

**READ A FIRST TIME** on the 24<sup>th</sup> day of September, 2024  
**READ A SECOND TIME** on the 24<sup>th</sup> day of September, 2024  
**READ A THIRD TIME** on the 24<sup>th</sup> day of September, 2024  
**ADOPTED** on the \_\_\_ day of \_\_\_\_\_, 2024

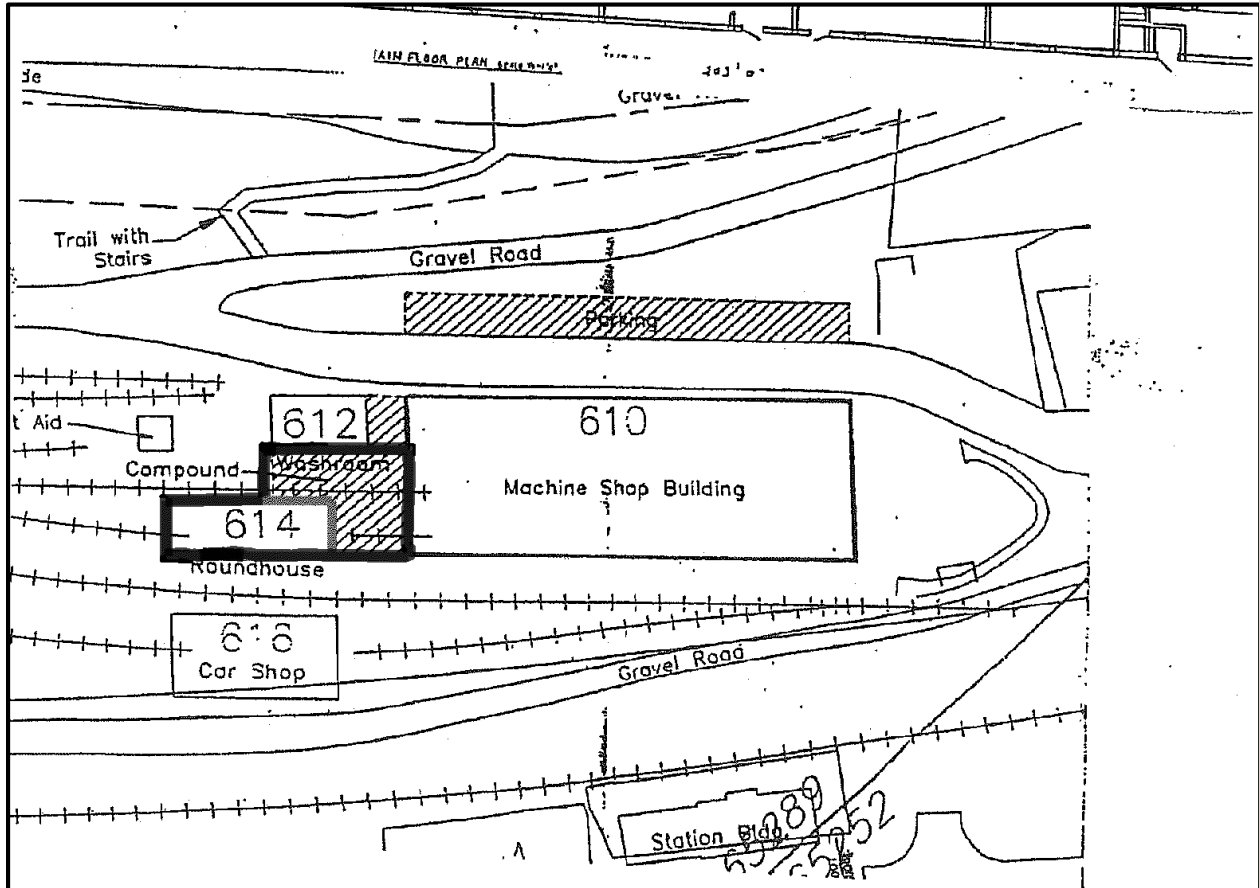
\_\_\_\_\_  
 Mayor

\_\_\_\_\_  
 Corporate Officer (S. Bouma)

Schedule "A"

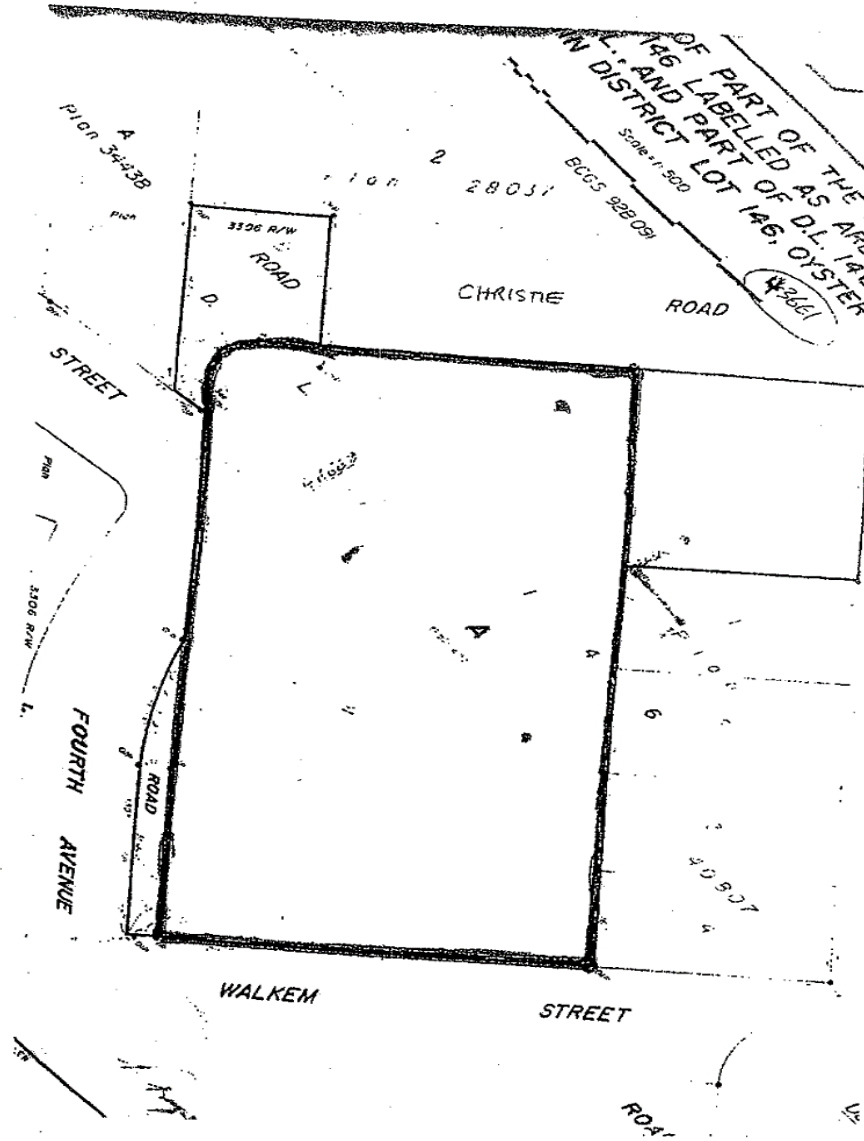


Schedule "B"

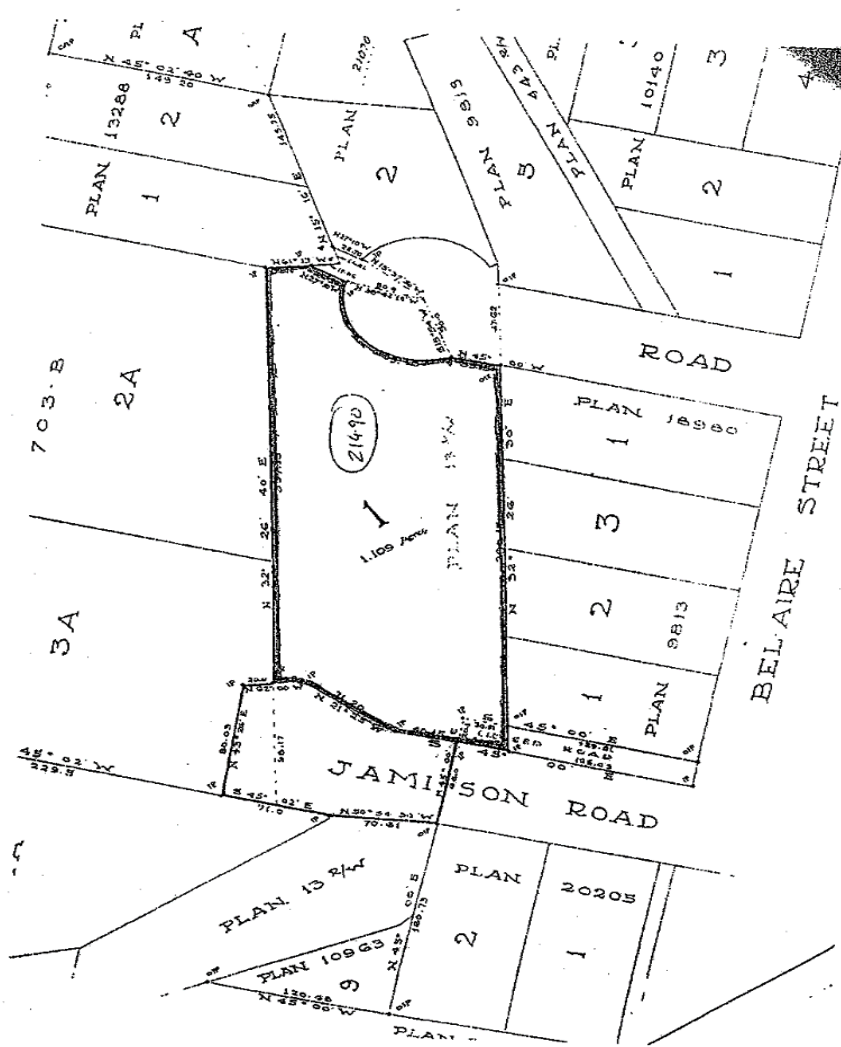




Schedule "D"



Schedule "E"





**Schedule "F"**

Exemption for 70% of the total land and improvement value of the property at 314 Buller Street, also known as Lot A, Block 76, Plan VIP703a, District Lot 56, Oyster Land District, Portion (DD B92367).

**TOWN OF LADYSMITH**

**BYLAW NO. 2193**

**A Bylaw to amend**

**“Freedom of Information and Protection of Privacy Bylaw 2022, No. 2116”**

---

The Council of the Town of Ladysmith in open meeting assembled amends “Freedom of Information and Protection of Privacy Bylaw 2022, No. 2116” by:

1. Inserting the following section as Section 6 and renumbering the remaining sections accordingly:
  6. A non-refundable Freedom of Information (FOI) application fee, as set by the Province, is charged for Freedom of Information applications.

**Citation**

2. This Bylaw may be cited for all purposes as “Freedom of Information and Protection of Privacy Bylaw 2022, No. 2116, Amendment Bylaw 2024, No. 2193”.

**READ A FIRST TIME** on the 1st day of October, 2024

**READ A SECOND TIME** on the 1st day of October, 2024

**READ A THIRD TIME** on the 1st day of October, 2024

**ADOPTED** on the \_\_\_\_\_ day of \_\_\_\_\_, 2024

---

Acting Mayor (T. McKay)

---

Corporate Officer (S. Bouma)

**TOWN OF LADYSMITH**

**BYLAW NO. 2194**

**A Bylaw to Amend "Town of Ladysmith Zoning Bylaw 2014, No. 1860"**

---

The Council of the Town of Ladysmith in open meeting assembled enacts the following to effect changes to "Town of Ladysmith Zoning Bylaw 2014, No. 1860":

1. The table under Section 5.24. Small-Scale Multi-Unit Infrastructure Extensions is amended as follows:
  - i. The date for Area D in Column C is changed from December 31, 2030 to December 30, 2026; and
  - ii. Area F is deleted;
2. Schedule C is amended to remove Area F from the map; and
3. All section references, section numbers, table of contents and marginalia are updated accordingly.

**Citation**

4. This Bylaw may be cited for all purposes as "Town of Ladysmith Zoning Bylaw 2014, No. 1860 Amendment Bylaw 2024, No. 2194".

**READ A FIRST TIME** on the \_\_\_\_\_ day of \_\_\_\_\_, 2024

**READ A SECOND TIME** on the \_\_\_\_\_ day of \_\_\_\_\_, 2024

**PUBLIC HEARING NOT HELD PURSUANT TO SECTION 464(4) OF THE LOCAL GOVERNMENT ACT**

**READ A THIRD TIME** on the \_\_\_\_\_ day of \_\_\_\_\_, 2024

**ADOPTED WITHOUT THE APPROVAL OF THE MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE PURSUANT TO THE APPROVAL EXEMPTION (CONTROLLED ACCESS HIGHWAY) REGULATION**

**ADOPTED PURSUANT TO SECTION 785(1)(b) OF THE LOCAL GOVERNMENT ACT** on the \_\_\_\_\_ day of \_\_\_\_\_, 2024

---

Acting Mayor (T. McKay)

---

Corporate Officer (S. Bouma)



BRITISH  
COLUMBIA

September 16, 2024

Reference: 70175

Sue Bouma  
Manager of Corporate Services  
PO Box 220 410 Esplanade Avenue  
Ladysmith BC V9G 1A2  
Email: [sbouma@ladysmith.ca](mailto:sbouma@ladysmith.ca)

Dear Sue Bouma:

Thank you for the Town of Ladysmith's applications requesting extensions to the small-scale multi-unit housing (SSMUH) zoning bylaw requirements pursuant to section 786 of the *Local Government Act* ("Act"), submitted to the Province on May 17, 2024. I apologize for the delay in responding.

I have considered the applications in accordance with the legislation. The extension requests are granted for the following areas for necessary sanitary sewer infrastructure upgrades and secondary road access:

- Malone Road Subdivision
- "Lot 5" Holland Creek
- Forest Field Area
- South Area

You must adopt a zoning bylaw that complies with section 481.3 of the Act in relation to these areas for which an extension has been granted by December 30, 2030.

The extension request is also granted for the 4th Avenue extension for necessary sanitary sewer upgrades. You must adopt a zoning bylaw that complies with section 481.3 of the Act in relation to the 4th Avenue area by December 30, 2026.

The extension request for "Lot A"/Upper Hannington is refused. Pursuant to section 785 (1) (b) of the Act, you must adopt a zoning bylaw that complies with section 481.3, in relation to the "Lot A"/Upper Hannington area within 90 days after the date set out in this notice of refusal.

Page 1 of 2

As with all new legislation, the Province will be monitoring the SSMUH framework closely to ensure it is working as intended. We strongly encourage the Town of Ladysmith to prioritize the infrastructure upgrades associated with the extensions. I know that infrastructure work takes time, but the Province expects local governments to work with us in tackling the housing crisis and providing more homes for people.

To date, the majority of communities throughout BC have adopted SSMUH legislation through the passing of local bylaws. Given the urgency of the housing crisis, while these extensions are being granted, I urge the Town of Ladysmith to adopt a SSMUH-compliant bylaw in these areas at the earliest opportunity.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ravi Kahlon', with a stylized flourish at the end.

Ravi Kahlon  
Minister of Housing

cc: Doug Routley, MLA for Nanaimo-Cowichan  
Allison McCarrick, Chief Administrative Officer  
Jake Belobaba, Director of Development Services  
Ryan Bouma, Director of Infrastructure Services  
Erin Anderson, Director of Financial Services  
Planning and Land Use Management Branch, Ministry of Housing

**TOWN OF LADYSMITH**

**BYLAW NO. 2195**

**A Bylaw to Amend "Council Procedure Bylaw 2009, No. 1666"**

---

The Council of the Town of Ladysmith in open meeting assembled hereby enacts the following amendments to "Council Procedure Bylaw 2009, No. 1666":

1. Delete section 2.1(a) in its entirety and replace with:
  - a) be held on the first and third Tuesday of each month, with the exception of January in which only one Council meeting will be held, scheduled for the third Tuesday of the month, and in August in which only one meeting will be held; and
2. Delete section 22.1 in its entirety and replace with:

22.1 Council will meet as Committee of the Whole on the second Tuesday of every second month, with the exception of January, when it will meet on the fourth Tuesday of the month, to give preliminary considerations to proposed policies, services and/or other matters and make recommendations to Council.

**3. Citation**

This Bylaw may be cited for all purposes as "Council Procedure Bylaw 2009, No. 1666, Amendment Bylaw 2024, No. 2195".

**READ A FIRST TIME** on the 1<sup>st</sup> day of October, 2024  
**READ A SECOND TIME** on the 1<sup>st</sup> day of October, 2024  
**READ A THIRD TIME** on the 1<sup>st</sup> day of October, 2024

Notice of intention to proceed with this bylaw was published on the 3<sup>rd</sup> day of October, 2024 in the Ladysmith Chronicle newspaper, circulating in the Town of Ladysmith, and on the Town of Ladysmith website on the 10<sup>th</sup> day of October, 2024, pursuant to section 94.2 of the *Community Charter*.

**ADOPTED** on the \_\_\_\_\_ day of \_\_\_\_\_, 2024

\_\_\_\_\_  
Acting Mayor (T. McKay)

\_\_\_\_\_  
Corporate Officer (S. Bouma)

## BYLAW STATUS SHEET October 15<sup>th</sup>, 2024

| Bylaw # | Description  | Status   |
|---------|--|--|
| 2131    | "Town of Ladysmith Zoning Bylaw 2014, No. 1860, Amendment Bylaw (No. 54) 2022, No. 2131" (10940 Westdowne Rd.). Changes zoning from Rural Residential (RU-1) to Manufactured Home Park (MHP-1).  | First and second readings, December 20, 2022. Public Hearing and third reading December 19, 2023. MOTI approval received January 15, 2024. <b>Awaiting covenant.</b>                               |
| 2133    | "Town of Ladysmith Zoning Bylaw 2014, No. 1860, Amendment Bylaw (No. 56) 2023, No. 2133". Allows convenience store at 1132-1142 Rocky Creek Rd.  | First and second readings, January 10, 2023. Public Hearing required. MOTI approval required. <b>Waiting on applicant to submit Development Permit per Council Resolution.</b>                     |
| 2161    | "Official Community Plan Bylaw 2022, No. 2200, Amendment Bylaw 2023, No. 2161". To expand the mobile home park at 10940 Westdowne Road.  | First and second readings, November 21, 2023. Second reading rescinded, second reading as amended, December 5, 2023. Public Hearing and third reading December 19, 2023. <b>Awaiting covenant.</b> |
| 2167    | "Town of Ladysmith Animal Control Bylaw 2024, No. 2167". To manage and regulate the keeping of animals in the Town.  | First, second and third readings, May 21, 2024. Consequential amendments must be made to the Zoning Bylaw prior to approval. <b>Awaiting consequential amendments to the Zoning Bylaw.</b>         |
| 2170    | "Official Community Plan Bylaw 2003, No. 1488, Amendment Bylaw 2024, No. 2170". To reallocate units for a portion of the Holland Creek neighbourhood to create a smaller development footprint, eliminate the need for a crossing over Heart Creek and adjust triggers for infrastructure construction.  | First and second readings, May 7, 2024. Public Hearing held May 21, 2024. MOTI approval received May 27, 2024. <b>Awaiting covenant.</b>   |
| 2171    | "Town of Ladysmith Zoning Bylaw 2014, No. 1860, Amendment Bylaw 2024, No. 2171". To reallocate units for a portion of the Holland Creek neighbourhood to create a smaller development footprint, eliminate the need for a crossing over Heart Creek and adjust triggers for infrastructure construction. | First and second readings, May 7, 2024. Public Hearing held May 21, 2024. MOTI approval received May 27, 2024. <b>Awaiting covenant.</b>   |
| 2181    | "Town of Ladysmith Revitalization Tax Exemption Bylaw 2007, No. 1625 Amendment Bylaw 2024, No. 2181"   | First, second and third readings, September 24, 2024.  |

|      |   |   |
|------|---|---|
| 2189 | "2025 Permissive Tax Exemptions Bylaw 2024, No. 2189".  | First, second and third readings, September 24, 2024. |
| 2193 | "Freedom of Information and Protection of Privacy Bylaw 2022, No. 2116, Amendment Bylaw 2024, No. 2193". To include an FOI application fee of \$10.00.  | First, second and third readings, October 1, 2024.    |
| 2195 | "Council Procedure Bylaw 2009, No. 1666, Amendment Bylaw 2024, No. 2195". To change the annual Council meeting schedule (only one Council meeting in January and the January CoW meeting rescheduled to the fourth Tuesday of the month). | First, second and third readings, October 1, 2024.    |



## Regional Approach to Emergency Management Grants

As agreed in 2022, Cowichan local authorities continue to approach emergency management grants regionally to support the growth and improvement of the full program benefiting all local authority and First Nation members. Under several grant programs, the regional emergency management program is eligible for the maximum funding available based on the number of eligible applicants included in the regional application. A larger funding base increases the options for projects and a regional approach ensures consistency and cost effectiveness in the Cowichan region.

Wherever practical, emergency management grants are applied for regionally (all four municipalities and the regional district). This process is facilitated by Emergency Management Cowichan (EMC). Projects are determined based on need and, once finalized the regional Hazard Risk Vulnerability Assessment, subject to final review by the CAOs and approval from the Board.

The regional emergency management program continues to build its partnerships with First Nations. Where First Nation partners choose to join in a regional application, this will be supported.

## Expectations & Process for Regional Grants

Notwithstanding specific grant application requirements, the general process below will be used:

1. Grant projects will be presented to the CAO advisory committee for review and recommendation. Project briefs will provide budget and expectations for all partners.
2. Grant application will be drafted by Emergency Management Cowichan staff for recommended projects.
3. ***New for this year:*** *All Indigenous groups in the region will be provided with an opportunity to provide feedback on recommended project prior to submission.*
4. Grant application will be provided to the CVRD Board and CFO for approval, and shared with all applicant partners.
5. Where required by the grant, each applicant partner will provide an agreement or resolution in support of the Cowichan Valley Regional District as the administrator of the grant.
6. Grant will be administered by Emergency Management Cowichan, Cowichan Valley Regional District staff to include project administration and financial reporting. ***New for this year:*** *Projects may be managed by the relevant local authority staff, and/or by EMA as appropriate.*

## **UBCM Community Emergency Preparedness Fund Emergency Support Services (ESS) Regional Grant 2025**

### **Background**

As part of the regional approach to emergency management, the local authorities and Indigenous partners in the Cowichan area work together under a single Emergency Support Services (ESS) program administered by the CVRD (EMC). This critical legislated function (with teams, equipment, supplies and facilities) supports residents of any community following an evacuation (e.g. single house fire, large flood, widespread wildfire, etc.).

### **UBCM Funding Intent**

The intent of this funding stream is to support eligible applicants to build local capacity through the purchase of supplies required to maintain or improve their ESS program, and to enhance ESS capacity through training and exercises.

### **Cowichan's 2024 ESS Grant Proposal**

To increase regional ESS capacity within the local authorities and Malahat Nation with:

- Sea-Can for Reception Centre supply storage (new site or existing site)
- Volunteer recruitment, response kits, training and recognition events
- Reception Centre and Group Lodging deployable signage
- Mobile Unit generator (to support smaller community/ad-hoc reception centres)
- Sleeping unit supplies (cots, sleeping bags) to stock centres more appropriately to populations and risk

### **FOR ACTION:**

Each municipality to resolve:

*For the Cowichan Valley Regional District to apply for, receive, and manage the UBCM Community Emergency Preparedness Fund Emergency Support Services 2025 grant funding up to \$200,000 on behalf of insert Municipality.*

Your resolution should be sought **by October 31, 2024** if possible.

| 2025 CEPF ESS Grant Proposed Budget   |                  |                  |
|---|------------------|------------------|
| Description   | TOTAL            | CEPF Portion     |
| Volunteer Recruitment (events, kits, recognition, training)                                       | \$23,500         | \$23,500         |
| ESS Reception Centre Signage (multiple sites)   | \$12,000         | \$12,000         |
| Evacuee Information Board (basic web portal for evacuee information)                              | \$15,000         | \$15,000         |
| Fixed Reception Centre: Supplies (cots, sleeping bags, dolly, mobile generator, ID creator)       | \$27,000         | \$27,000         |
| Mobile Reception Centre: Supplies & Equipment (dolly, 8 tablets, mobile unit generator)           | \$33,000         | \$33,000         |
| Sea-Can Storage Unit (new site or existing) - procurement and installation, cement skirt and feet | \$50,000         | \$50,000         |
| Training Consultant - material and course development   | \$20,000         | \$20,000         |
| Contingency (12% for supplies, equipment, development)  | \$19,260         | \$19,260         |
| <b>TOTAL</b>  | <b>\$199,760</b> | <b>\$199,760</b> |

ESTIMATED ESS PROJECT DEVELOPMENT / IMPLEMENTATION IMPACTS

|                       | Core Service Impact – No, Low, Med, High | Extraordinary Impact (outside of normal service expectations) Y/N | Description of Impact   |
|-----------------------|--|---|---|
| HR                    | N  | N   | n/a   |
| IT/GIS                | N  | N   | n/a   |
| Finance               | LOW                                      | N   | Invoice processing & payment, Final grant review  |
| Procurement           | MED                                      | N   | Procurement of the sea-can will likely fall within delegation authority of managers, and achieved through RFQ process, though not requiring the public portal |
| Communications        | N  | N   | n/a   |
| Other Internal Groups | N  | N   | n/a   |
| External Groups       | MED                                      | N   | Sea-Can may be placed at new (MNC?) location which will require coordination and support from local authority staff and permits where applicable              |

## UBCM Community Emergency Preparedness Fund

### Emergency Operations Centre (EOC) Grant 2025

#### Background

As part of the regional approach to emergency management, the local authorities in the Cowichan area work together under a single Regional Emergency Operations Centre (REOC). This critical function (with teams, equipment, supplies and facilities) coordinates response and recovery actions, prioritizes resources, supports emergency response personnel in the field, and coordinates all official communications during a significant emergency.

#### UBCM Funding Intent

The intent of this funding stream is to support eligible applicants to build local capacity through the purchase of equipment and supplies required to maintain or improve EOC/REOC functionality, and to enhance EOC/REOC capacity through training and exercises.

#### Cowichan's 2024 EOC Grant Proposal

To increase REOC capacity with:

- Trainer - year two for a temp position (current position is unfilled, two-year opportunity may increase viability)
- Five (5) Table Top Exercises - food, facility rental, materials (printed)
- Partner Agency REOC Training (FDs, RCMP, Ambulance)
- REOC staff 72-hour food and water supplies (restock)
- REOC Map Plotter

#### FOR ACTION:

Each municipality to resolve:

*For the Cowichan Valley Regional District to apply for, receive, and manage the UBCM Community Emergency Preparedness Fund Emergency Operations Centre 2025 grant funding up to \$200,000 on behalf of insert Municipality.*

Your resolution should be sought **by October 31, 2024** if possible.

| 2025 CEPF EOC Grant Proposed Budget                                  |   |  |              |                  |                  |
|--|---|--|--------------|------------------|------------------|
| Project  | Deliverable / Milestone   | Hourly rate<br>(includes<br>benefits, leave) | Hour Est.    | TOTAL            | CEPF Portion     |
| Year 2 for temporary<br>fulltime Training and<br>Exercise Technician | Develop and deliver exercises and drills for REOC staff<br>and functions                  | \$ 64.38                                     | 780          | \$50,216         | \$50,216         |
|  | Develop and deliver region /position-specific REOC<br>training for all communities' staff | \$ 64.38                                     | 780          | \$50,216         | \$50,216         |
|  | Administration  | \$ 64.38                                     | 260          | \$16,739         | \$16,739         |
|  | Training Supplies (materials, refreshments, training<br>venues)                           | n/a  | n/a          | \$15,000         | \$15,000         |
| Exercise Delivery  | 5 Table Top Exercises - Supplies, venues, refreshments                                    | n/a  | n/a          | \$10,000         | \$10,000         |
| <b>SUB-TOTAL</b>   |   |  | <b>1,820</b> | <b>\$142,172</b> | <b>\$142,172</b> |
| REOC Supplies &<br>Equipment   | REOC Staff 72-Hour food kits/water  | n/a  | n/a          | \$7,000          | \$7,000          |
|  | REOC Map Plotter  | n/a  | n/a          | \$5,000          | \$5,000          |
|  | Ladysmith City Hall (REOC Location) - Generator   | n/a  | n/a          | \$10,000         | \$10,000         |
|  | Tables & Chairs for REOC pop-up location  | n/a  | n/a          | \$20,000         | \$20,000         |
| <b>SUB-TOTAL</b>   |   |  |              | <b>\$32,000</b>  | <b>\$32,000</b>  |
| <b>15% Contingency (on supplies/equipment)</b>                       |   |  |              | \$10,050         | \$10,050         |
| <b>PROJECT TOTAL</b>   |   |  |              | <b>\$194,222</b> | <b>\$194,222</b> |

ESTIMATED EOC PROJECT DEVELOPMENT / IMPLEMENTATION IMPACTS

|                       | Core Service Impact – No, Low, Med, High | Extraordinary Impact (outside of normal service expectations) Y/N | Description of Impact   |
|-----------------------|--|---|---|
| HR                    | Low                                      | N   | Job Description development, hiring (may be captured under existing position posting)                         |
| IT/GIS                | N  | N   | n/a   |
| Finance               | Low                                      | N   | Invoice processing & payment, Final grant review, payroll   |
| Procurement           | N  | N   | Procurement falls within delegation authority of managers and would not require Procurement support           |
| Communications        | N  | N   | n/a   |
| Other Internal Groups | N  | N   | n/a   |
| External Groups       | Med                                      | N   | Training attendance must be supported by senior leadership (which is a requirement without the grant as well) |

## UBCM Community Emergency Preparedness Fund

### Evacuation Route Planning Grant 2025

#### The Current Cowichan Emergency Plan

A regional emergency plan supports emergency management activities in the Cowichan. This plan provides the general framework and procedures for response. Community-specific plans should be developed based on priority hazards and highest risk, as identified in the Hazard Risk and Vulnerability Assessment (HRVA). To date evacuation route plans have been drafted for Electoral Areas E, F and I. Evacuation route plans are under development for North Cowichan, Lake Cowichan, Ladysmith, and Area G with estimated completion in Winter 2024.

#### Intent of the UBCM Evac Plan Funding

The intent of this funding stream is to support the development of Evacuation Route Plans that provide information for local governments, First Nations, and community members in the event of an emergency. In previous years, this grant was not eligible for products developed for public presentation (out-of-scope).

#### Cowichan's 2025 Evac Plan Grant Proposal

To update and improve emergency planning in the Cowichan, the following route plans are proposed for development. These areas were selected based on known risk and event history and comprise the final 30% of areas requiring evacuation route planning:

- Evacuation Route Plans:
  - Electoral Area A
  - Electoral Area B
  - Electoral Area C
  - Electoral Area H
  - City of Duncan
  - South End/ Remaining areas of North Cowichan
- Budget attached

This year public communications products are eligible and will be included. If funding allows, a public communications product for all areas in the Cowichan local authority scope will be done under this grant.

#### FOR ACTION:

Each municipality to resolve:

*For the Cowichan Valley Regional District to apply for, receive, and manage the 2025 UBCM Community Emergency Preparedness Fund for Public Notification and Evacuation Route Planning grant funding up to \$200,000 on behalf of insert Municipality.*

Your resolution should be sought **by October 31, 2024** if possible.



| 2025 CEPF Evac Route Grant Proposed Budget  |          |             |                      |                     |
|---|----------|-------------|----------------------|---------------------|
| Description   | Quantity | Unit Cost   | Estimated Total Cost | CEPF                |
| A. Evacuation Route Plan Development for City of Duncan, North Cowichan South End, Shawnigan/ Cobble Hill, Cowichan Bay, Mill Bay, Malahat, Yellow Point/North Oyster | 6        | \$25,000.00 | \$150,000.00         | \$150,000.00        |
| B. Maps, Spatial Data/Metadata  | 6        | \$3,000.00  | \$18,000.00          | \$18,000.00         |
| C. Document Review, Feedback & Finalization through table top exercise  | 6        | \$2,500.00  | \$15,000.00          | \$15,000.00         |
| D. Public Information Quick Guide Development, Production and Distribution (not previously grant eligible, now eligible so all areas targeted)                        | all      | n/a         | \$17,000.00          | \$17,000.00         |
| <b>TOTAL</b>  |          |             | <b>\$200,000.00</b>  | <b>\$200,000.00</b> |

ESTIMATED EVACUATION ROUTE PROJECT DEVELOPMENT / IMPLEMENTATION IMPACTS

|                       | Core Service Impact – No, Low, Med, High | Extraordinary Impact (outside of normal service expectations) Y/N | Description of Impact  |
|-----------------------|--|---|--|
| HR                    | N  | N   | n/a  |
| IT/GIS                | LOW                                      | N   | Map upload at project completion   |
| Finance               | LOW                                      | N   | Invoice processing & payment, final grant review   |
| Procurement           | LOW                                      | N   | Procurement of evacuation consultant   |
| Communications        | MED                                      | N   | Development of Public Communications for all evac route plans  |
| Other Internal Groups | N  | N   | n/a  |
| External Groups       | MED                                      | N   | North Cowichan and CVRD partners, response organizations, staff will be required to review content and assumptions to validate routes and response times |

# LADYSMITH DRAGON BOAT SOCIETY

## 2024 YEAR IN REVIEW

The Ladysmith Dragon Boat Society is proud to reflect on a successful year of growth, teamwork, and community engagement. With our roots firmly planted in the heart of Ladysmith, we continue to foster a sense of camaraderie, health, and belonging for all who participate.

Thanks to the generous support of the Town of Ladysmith, specifically through the donation of our moorage, we've been able to thrive and provide invaluable opportunities to our members and the broader community at a very approachable cost. This support has not only benefited our three dragon boat teams but has also helped us contribute to the growing popularity of dragon boating in our region.

In October 2023, the Society introduced winter paddling sessions, running once a week until April 2024, allowing

paddlers to keep their skills sharp year-round. Due to its success, we are excited to offer winter paddling again in the coming year. Additionally, we hosted a six-week 'Introduction to Dragon Boat Paddling' session, which drew in over a dozen new paddlers eager to try paddling.

This year, the Society saw significant participation across our three teams, with adult paddlers of all ages and abilities coming together to challenge themselves and achieve new personal and collective milestones. Many of our members have competed, bringing accolades back to Ladysmith. Beyond competition, we've maintained regular practices and continued creating opportunities for new paddlers to experience the sport.

The support we've received from the Town of Ladysmith has been critical to our success, and we are excited about what lies ahead as we continue to grow. We believe that with continued partnership and shared vision, the Ladysmith Dragon Boat Society can further enrich the town and contribute to its ongoing spirit of community and sport.

View our website to learn more about our 2024 season, [LadysmithDragonboat.ca](http://LadysmithDragonboat.ca)

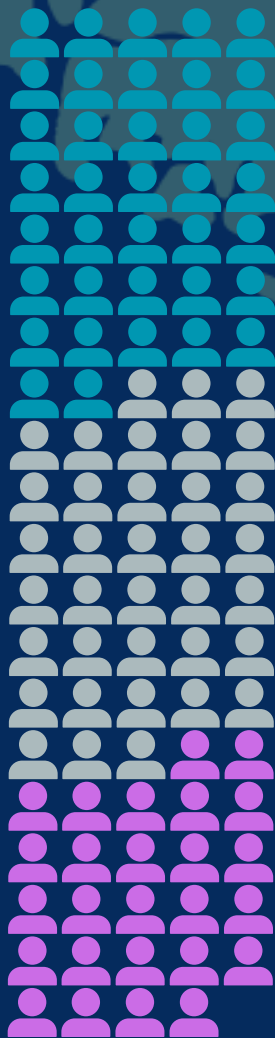
### 3 DIVERSE TEAMS

The Ladysmith Dragon Boat Society is home to three unique teams and nearly 100 members, each bringing something special to the water and our community. Together, these teams highlight the diversity and inclusivity at the heart of our society.

**The Sea Dragons** are a recreational team (that also enjoy racing!) They had a standout year, securing a 2nd place win while also demonstrating a commitment to safety with a successful man overboard drill.

**The 49th Dragons** are a dedicated, non-competitive team that embraces the joy of paddling in Ladysmith Harbour, fostering community, teamwork and fitness.

**Sync or Swim**, our dedicated race team, had an outstanding 2024 season, representing Ladysmith at 5 Island Festivals, taking home 3 gold and 1 silver medal while showcasing their skill, teamwork, and dedication to excellence.



### 5 ISLAND FESTIVALS

#### SEA DRAGONS

- **2024 WCDBS Regatta, Sproat Lake** 2nd Place Women's Gold Division, 300 meter

#### SYNC OR SWIM

- **2024 Fairway Gorge Super Sprints:** 1st Place, Women's A Division, 200 meter
- **2024 WCDBS Regatta, Sproat Lake:** 1st Place Women's Division, 300 meter
- **2024 Nanaimo Dragon Boat Regatta:** Cancelled mid-way through as a result of strong winds
- **2024 Victoria Dragon Boat Festival:** 1st Place, Women's B Division, 250 meter
- **2024 Comox Dragon Boat Festival:** 2nd Place, Women's A Division, 200 meter

