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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

METRO VANCOUVER REGIONAL DISTRICT
ELECTORAL AREA AND SMALL COMMUNITIES COMMITTEE

MEETING

Thursday, May 15, 2025
9:00 am
28th Floor Committee Room, 4515 Central Boulevard, Burnaby, British Columbia
Webstream available at https://www.metrovancouver.org

A G E N D A

A. ADOPTION OF THE AGENDA

1. May 15, 2025 Meeting Agenda
That the Electoral Area and Small Communities Committee adopt the agenda for its meeting scheduled for May 15, 2025 as circulated.

B. ADOPTION OF THE MINUTES

1. February 20, 2025 Meeting Minutes *pg. 5*
That the Electoral Area and Small Communities Committee adopt the minutes of its meeting held February 20, 2025 as circulated.

C. DELEGATIONS

D. INVITED PRESENTATIONS

1. Ned Atkins, Hydrotechnical Engineer, Northwest Hydraulic Consultants *pg. 10*
Subject: Barnston Island Dike Improvement Project

E. REPORTS FROM COMMITTEE OR CHIEF ADMINISTRATIVE OFFICER

pg. 19

1. Barnston Island Dike Improvement Project – Work Plan

Executive Summary

Metro Vancouver is the local government for Barnston Island and is responsible for emergency management for the Island. There is a 10-km ring dike on the Island to protect it from flooding that is maintained by the local resident-volunteer Barnston Island Diking District and overseen directly by the Province. The Province provided Metro Vancouver with a grant of $5.25 million in 2023 to manage the process and implementation of dike improvements. Metro Vancouver also committed $1.5 million of the Growing Communities Fund grant towards this project.

Following an update in 2024 to the Barnston Island Dike Assessment Report (2012), the MVRD Board directed staff to use the priority projects identified in the update as a guide for implementing dike improvements. Through a competitive procurement process, Metro Vancouver recently entered into a contract with Northwest Hydraulic Consultants Ltd. to complete five priorities:

Barnston Island Drainage and Dike Improvement Project Work Plan	**Approximate Cost**
Task 1: Design for the replacement of the flood box and pump station for the Barnston Island dike	$500,000
Task 2: Drainage ditch study and drainage ditch upgrades on Barnston Island	$95,000
Task 3: Bank erosion study and erosion monitoring network	$69,000
Task 4: Dike seepage assessment	$85,000
Task 5: Operation and maintenance manual for the dike.	$21,000
Total	**$770,000**

The associated work plan is presented in this report for information.

Recommendation

That the MVRD Board receive for information the report dated April 15, 2025, titled "Barnston Island Dike Improvement Project – Work Plan".

2. Electoral Area A Community Works Fund – University Neighbourhoods Association (UNA) Dog Park Project *pg. 69*

Executive Summary
The Community Works Fund is delivered to all local governments in British Columbia through a direct annual allocation to support local eligible priorities, and is distributed within Electoral Area A based on community population. Including 2025's annual allocation, the Electoral Area A Community Works Fund Reserve stands at approximately $1.1 million, with 81% of that apportioned based on population to UBC, which includes the University Neighbourhoods Association (UNA).

The UNA oversees residential neighbourhoods around UBC's campus and provides municipal-like services (including parks) to its residents. In late 2024, the UNA conducted a public engagement process for a new dog park that sought feedback on its design and features. The proposed dog park received strong support from residents, and in March 2025, the UNA Board endorsed the project moving forward to Metro Vancouver for consideration of funding in the amount of $200,000.

If the MVRD Board approves the recommendation, Metro Vancouver will enter into an agreement with UBC (on behalf of the UNA) to reimburse them for eligible costs up to $200,000 upon submission of required documentation.

Recommendation
That the MVRD Board approve funding from the Electoral Area A Community Works Fund as described in the report dated April 15, 2025, titled "Electoral Area A Community Works Fund – University Neighbourhoods Association (UNA) Dog Park Project" up to $200,000.

3. Reforming the Local Government Act Survey – Electoral Area A Comments *pg. 77*

Executive Summary
The Province and UBCM are currently gauging interest from regional districts and local government area associations to move forward with legislative reforms focused on regional districts. As an initial step, local government area associations, including the Lower Mainland Local Government Association, engaged a legal firm (Lidstone & Company) to prepare a discussion paper titled "Regional District Legislation Roadmap" and recently distributed a survey requesting feedback on the paper and its draft recommendations.

Metro Vancouver staff have reviewed the discussion paper and survey, and recommend that the Board endorse comments provided in this report as they relate to Electoral Area A. For clarity, the endorsement recommendation is specific to Electoral Area A and does not mean Metro Vancouver is endorsing these comments on behalf of other member jurisdictions.

Recommendation
That the MVRD Board, as Local Government for Electoral Area A, direct staff to respond to the Reforming the Local Government Act: Roadmap Survey with the responses in the General Comments and Comments on Draft Recommendations section of the report dated April 28, 2025, titled "Reforming the Local Government Act Survey – Electoral Area A Comments".

4. Manager's Report *pg. 82*

Recommendation
That the Electoral Area and Small Communities Committee receive for information the report dated April 16, 2025, titled "Manager's Report".

F. INFORMATION ITEMS

G. OTHER BUSINESS

H. RESOLUTION TO CLOSE MEETING
Note: The Committee must state by resolution the basis under section 90 of the Community Charter on which the meeting is being closed. If a member wishes to add an item, the basis must be included below.

I. ADJOURNMENT
That the Electoral Area and Small Communities Committee adjourn its meeting of May 15, 2025.

Membership:

McCutcheon, Jen (C) – Electoral Area A	Bose, Mike – Surrey	Dominato, Lisa – Vancouver
Ross, Jamie (VC) – Belcarra	Cassidy, Laura – sc̓əw̓aθən məsteyəxʷ (Tsawwassen First Nation)	Leonard, Andrew – Bowen Island
Berry, Ken – Lions Bay		McEwen, John – Anmore

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METRO VANCOUVER REGIONAL DISTRICT
ELECTORAL AREA AND SMALL COMMUNITIES COMMITTEE

Minutes of the Regular Meeting of the Metro Vancouver Regional District (MVRD) Electoral Area and Small Communities Committee held at 9:00 am on Thursday, February 20, 2025 in the 28th Floor Committee Room, 4515 Central Boulevard, Burnaby, British Columbia.

MEMBERS PRESENT:
Chair, Director Jen McCutcheon, Electoral Area A
Vice Chair, Director Jamie Ross, Belcarra
Director Ken Berry, Lions Bay
Councillor Mike Bose, Surrey
Director Lisa Dominato, Vancouver*
Director Andrew Leonard, Bowen Island

*denotes electronic meeting participation as authorized by the *Procedure Bylaw*

STAFF PRESENT:
Marcin Pachcinski, Division Manager, Electoral Area and Implementation Services
Catherine Grosson, Legislative Services Coordinator, Board and Information Services
Brant Arnold-Smith, Division Manager, Protective Services and Emergency Management
Heather McNell, Deputy Chief Administrative Officer, Policy and Planning

A. ADOPTION OF THE AGENDA

1. February 20, 2025 Meeting Agenda

It was MOVED and SECONDED
That the Electoral Area and Small Communities Committee adopt the agenda for its meeting scheduled for February 20, 2025 as circulated.

CARRIED

B. ADOPTION OF THE MINUTES

No items presented.

C. DELEGATIONS

No items presented.

D. INVITED PRESENTATIONS

No items presented.

E. REPORTS FROM COMMITTEE OR CHIEF ADMINISTRATIVE OFFICER

1. 2025 Electoral Area and Small Communities Committee Meeting Schedule and Work Plan

Report dated January 29, 2025 from Marcin Pachcinski, Division Manager, Implementation and Electoral Area Services, Regional Planning and Housing Services, providing the Electoral Area and Small Communities Committee with the 2025 Work Plan, Terms of Reference, and the Annual Meeting Schedule.

Marcin Pachcinski provided members with a presentation titled "2025 Priorities and Work Plan" which outlined the committee's priorities and work plan for 2025.

Members discussed the desire to advocate for small communities in the region and for the committee to act as a forum for the unique perspectives that small communities want to provide to the Board. Discussion included a desire to formalize the sharing of resources between Metro Vancouver and small communities in the region who may not have the sufficient resources on their own.

It was MOVED and SECONDED
That the MVRD Board direct staff to work with the Village of Lions Bay staff to develop a business case regarding the formalization of sharing resources and services and to reach out to other small communities to gauge interest in developing this business case.

9:45 am the meeting was recessed.
9:50 am the meeting was reconvened.

It was MOVED and SECONDED
That the above motion be replaced with the following motion:

That the MVRD Board direct staff to engage with Village of Anmore, Village of Belcarra, Village of Lions Bay, Electoral Area A, Bowen Island Municipality and Tsawwassen First Nation to gauge interest in developing a business case regarding the formalization of sharing resources and services between those member jurisdictions and Metro Vancouver.

CARRIED

Main Motion

It was MOVED and SECONDED
That the MVRD Board direct staff to engage with Village of Anmore, Village of Belcarra, Village of Lions Bay, Electoral Area A, Bowen Island Municipality and Tsawwassen First Nation to gauge interest in developing a business case regarding the formalization of sharing resources and services between those member jurisdictions and Metro Vancouver.

CARRIED

It was MOVED and SECONDED
That the Electoral Area and Small Communities Committee:

a) receive for information the Electoral Area and Small Communities Committee Terms of Reference and the 2025 Annual Meeting Schedule, as presented in the report dated January 29, 2025, titled "2025 Electoral Area and Small Communities Committee Meeting Schedule and Work Plan"; and
b) endorse the 2025 Work Plan, as presented in the report dated January 29, 2025, titled "2025 Electoral Area and Small Communities Committee Meeting Schedule and Work Plan", incorporating the requested changes from the Electoral Area and Small Communities Committee.

CARRIED

2. Electoral Area A Barge Clean-up Events

Report dated January 20, 2025 from Marcin Pachcinski, Division Manager, Implementation and Electoral Area Services, Regional Planning and Housing Services, seeking direction from the MVRD Board on budgeting and delivery of future Electoral Area A barge clean-up events.

Marcin Pachcinski provided members with a presentation titled "Electoral Area A Barge Clean-up Events" which outlined history, resident feedback, and future options to consider for future barge clean-up events in Electoral Area A.

It was MOVED and SECONDED
That the MVRD Board direct staff to:

a) set limits on the total volume of items picked up per household as part of the Electoral Area A barge clean-up events;
b) explore the feasibility of additional alternate disposal events; and
c) bring back information on options to create a fee for service or tax service area, as described in the report dated January 20, 2025, titled "Electoral Area A Barge Clean-up Events."

CARRIED

3. Manager's Report

Report dated January 20, 2025 from Marcin Pachcinski, Division Manager, Implementation and Electoral Area Services, Regional Planning and Housing Services, providing information on the December 2024 Village of Lions Bay debris flow.

Brant Arnold-Smith, Division Manager, Protective Services and Emergency Management, provided members with a presentation titled "Battani Creek Landslide Response" which outlined Metro Vancouver's role in the collaborative emergency response to the Battani Creek Landslide.

It was MOVED and SECONDED

That the Electoral Area and Small Communities Committee receive for information the report dated January 20, 2025, titled "Manager's Report".

CARRIED

F. INFORMATION ITEMS

No items presented.

G. OTHER BUSINESS

No items presented.

H. RESOLUTION TO CLOSE MEETING

It was MOVED and SECONDED

That the Electoral Area and Small Communities Committee close its meeting scheduled for February 20, 2025 pursuant to section 226 (1) (a) of the *Local Government Act* and the *Community Charter* provisions as follows:

90 (1) A part of a council meeting may be closed to the public if the subject matter being considered relates to or is one or more of the following:

(a) personal information about an identifiable individual who holds or is being considered for a position as an officer, employee or agent of the regional district or another position appointed by the regional district.

(g) litigation or potential litigation affecting the municipality; and

(2) A part of a council meeting must be closed to the public if the subject matter being considered relates to one or more of the following:

(b) the consideration of information received and held in confidence relating to negotiations between the municipality and a provincial government or the federal government or both, or between a provincial government or the federal government or both and a third party.

CARRIED

I. ADJOURNMENT

It was MOVED and SECONDED
That the Electoral Area and Small Communities Committee adjourn its meeting of February 20, 2025.

CARRIED
(Time: 10:44 am)

Morgan Mackenzie,
Legislative Services Coordinator

Jen McCutcheon,
Chair

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Barnston Island
Dike and Drainage Improvements

Electoral Area and Small Communities Committee

May 15, 2025

Workplan Overview

Presentation Overview

1. Project Team Introductions
2. Project Background
3. Overview of Current Project

Project Team Introductions

Presenter:

Ned Atkins, , MEng, P.Eng
Hydrotechnical Engineer, **NHC**

NHC Project Manager

Daniel Maldoff, MEng, P.Eng
Hydrotechnical Engineer, **NHC**

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nhc
Northwest Hydraulic Consultants
Hydrotechnical engineering
(Prime Consultant)

WATER STREET ENGINEERING
Water Street Engineering
Pump station civil design

GEA Gygax Engineering Associates Ltd.
Gygax Engineering Associates
Structural engineering

MTS ENGINEERING
MTS Engineering
Electrical engineering

THURBER
Thurber Engineering
Geotechnical/seismic engineering

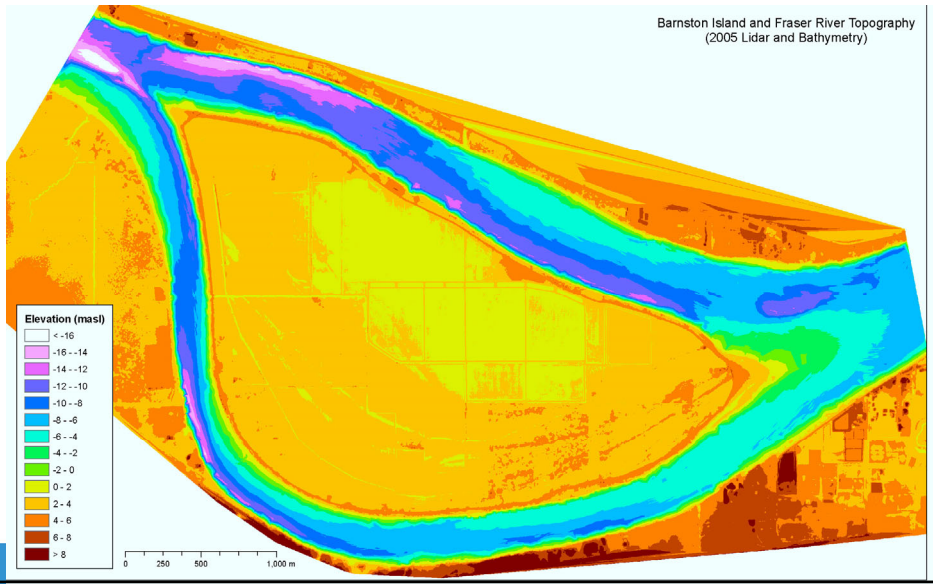
ROE Assessment Planning Compliance
Roe Environmental
Environmental/permitting

3

Project Background

Barnston Island Topography

nhc



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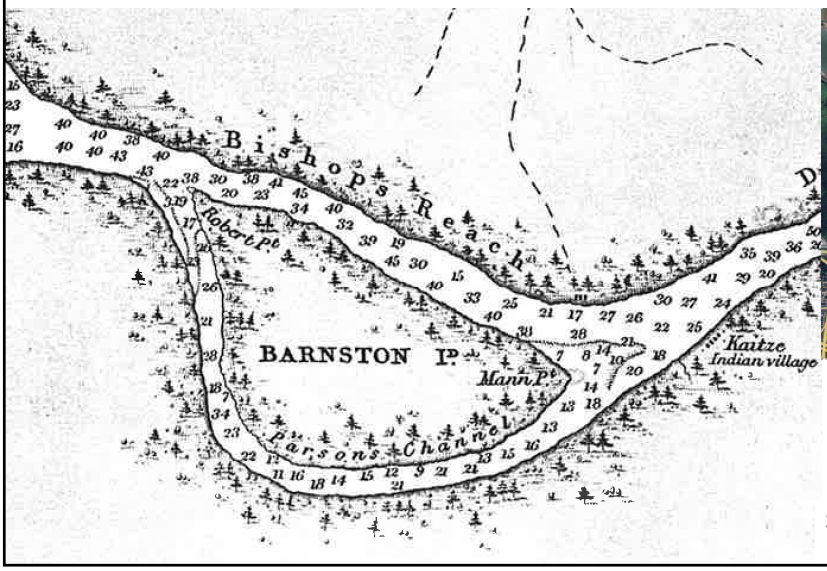
Project Background

Barnston Island 1859

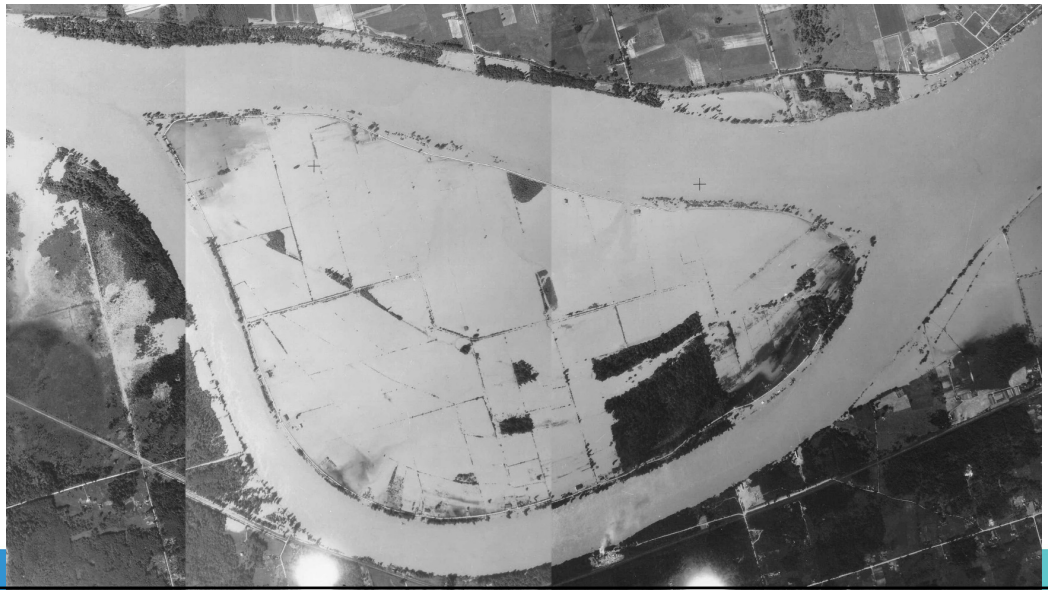


Google Earth 2022

Surveyed by Captain Richards 1859

Project Background

Barnston Island 1948



Project Background – Previous Studies

2012 Barnston Island Dike Assessment (issued 2013)

- Dike found to be in less than fair condition
- Main concerns:
  - Dike overtops at ~40-year flow
  - Dike may fail prior to overtopping (seepage and erosion)
  - Internal drainage network in poor condition

2023 Barnston Island Dike Assessment Review (issued 2024)

- Condition was mostly similar to 2012
- Provided updated recommendations and prioritization

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Overview – Current Project

- Based on 2012 and 2023 recommendations
- Funded by $5.25M provincial grant

Components:

1. **Pump station and floodbox replacement**
2. **Drainage network assessment and design**
3. **Bank erosion assessment**
4. **Dike seepage assessment**
5. **Dike operation and maintenance manual**

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Task 1: Pump station and floodbox replacement

Key issues:

- Aging infrastructure, safety and operational concerns
- Poor seismic/geotechnical performance

Approach and work plan:

- Conceptual and detailed design of replacement pump station and floodbox
- Infrastructure to meet modern standards with appropriate flood mitigation performance

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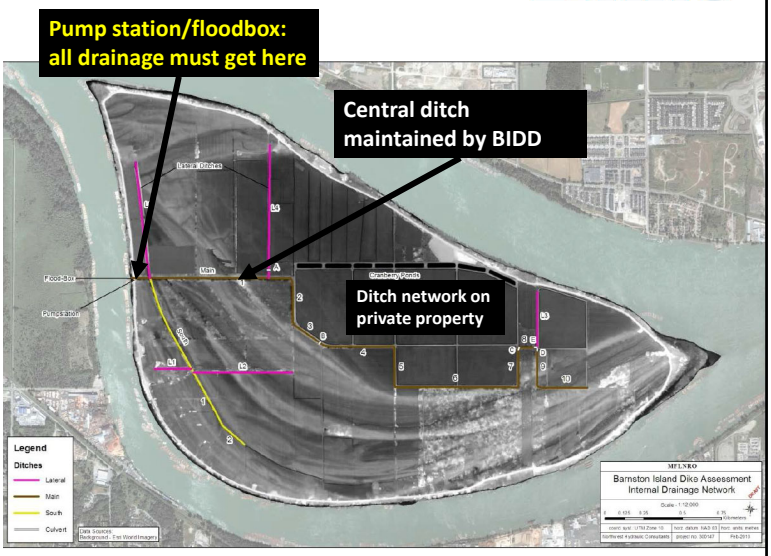
Task 2: Drainage network assessment and design

Key issues:

- Plugged and poorly maintained ditches
  - Challenges with private property
- Flat topography, low gradient
- All flow must reach pump station/floodbox

Approach and work plan:

- Assess existing drainage network
- Develop design for improved network
  - Establish continuous flow gradient
  - Explore relocation to public ROW
- Drainage study is input for PS/FB design



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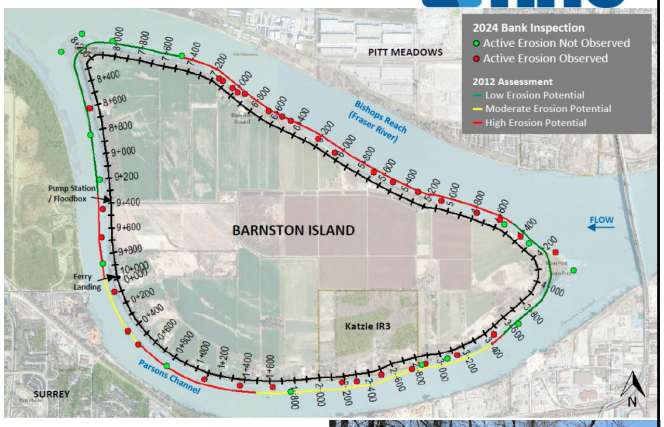
Task 3: Bank erosion assessment

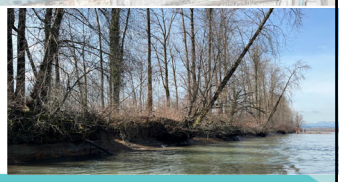
Key issues:

- Dike is subject to erosion hazard
- More detailed assessment of erosion is required prior to dike upgrades

Approach and work plan:

- Assess current condition
  - Inspection by boat April 30, 2025
  - Bathymetric survey during freshet
- Arborist assessment – identify trees for removal along banks
- Historical bathymetric comparison
- Erosion monitoring network





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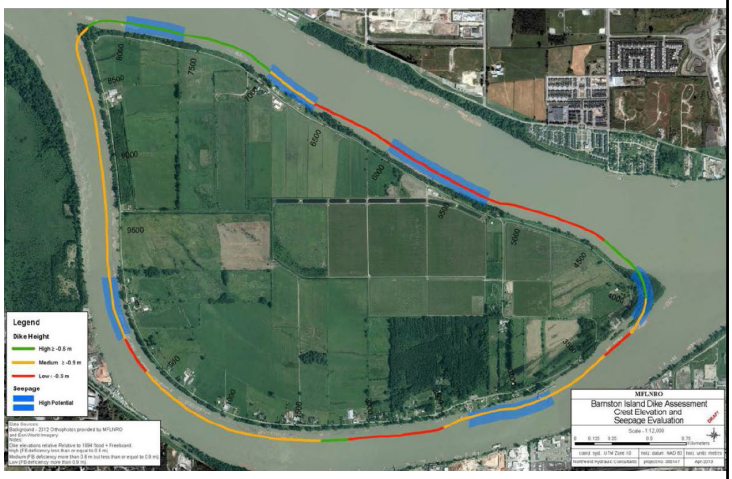
Task 4: Dike seepage assessment

Key issues:

- Concern: seepage failure of dike
- Understanding of seepage needed before upgrading the dike

Approach and work plan:

- Inspection during freshet
- Geotechnical investigations
- Seepage analysis
- Recommendations for seepage mitigation



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Task 5: Dike operation and maintenance manual

Key issues:

- Currently no dike O&M manual
- O&M manual provides operators with consolidated information for:
  - Regular operations
  - Emergency response
  - Maintenance and upgrades

Approach and work plan:

- Compile dike O&M manual per Provincial template

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Schedule Notes

- Work has been initiated
- Investigations, analysis and design complete by Feb 2026
- Targeting 2026 construction for pump station/floodbox and drainage ditch construction
- Actual construction timing subject to environmental permit approvals

- **Metro Vancouver to keep the Katzie First Nation and residents informed of work occurring on Barnston Island**

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Thank you!

My contact:
Ned Atkins, MEng, PEng
natkins@nhcwater.com

Project Manager contact:
Daniel Maldoff, MEng, PEng
dmaldoff@nhcwater.com

2023 Assessment – High-Priority Items

Improvement	2012 Assessment			2023 Update			Potential Implementation Challenges		Approximate Timeline	Comments/Assumptions
	Cost (2012)	Recommended for Funding (2012)	Priority (2012)	Cost (Updated)	Recommended for Funding (2023)	Priority (2023)	Land Acquisition	In-Stream Construction		
Conduct detailed bank erosion study	-		-	$150,000	x	High			6 months	Required to determine feasibility of dike upgrades in current location. Will provide recommendations for erosion mitigation.
Investigate and repair road surface rutting near dike STA 4+200 (MoTI cost sharing)	-		-	$60,000	x	High			1 year	Geotechnical investigation required to determine if rutting is a dike or road issue. Construction by MoTI; estimated cost does not include construction.
Safety upgrades to pump station	$23,000	x	Very High	($29,900)		High			1 year	Electrical upgrades completed. No further action required if pump station is to be replaced in near term.
Install and support water level monitoring equipment at pump station/floodbox (design inputs for upgrades)	$3,000	x	Very High	$2,000	x	High			3 months	Use Surrey water level data at 192nd Street for riverside and install pressure probe on landside.
Pump station replacement	$500,000	x	High	$650,000	x	High		x	6 months – detailed design; 1-2 years – construction (depending on permitting)	Cost could be significantly higher, particularly if seismic design is needed
Floodbox replacement	$300,000	x	High	$390,000	x	High		x	6 months – detailed design; 1-2 years – construction (depending on permitting)	Cost could be significantly higher, particularly if seismic design is needed
Drainage ditch upgrades	$100,000	x	High	$130,000	x	High	x		1 year (depending on land acquisition requirements)	Should include detailed drainage study with recommendations/strategy. Could include returning central ditch north of IR3 to original location and improvements to South Ditch. Cost likely higher as works more extensive than recommended in 2012
Drainage ditch network for Katzie FN. Assumed funding from AANDC, cost not included in total.	$75,000		High	($97,500)		High			N/A – separate project at Katzie IR3	
Develop and install erosion monitoring network. Conduct arborist assessment for bank tree removal. Remove trees as directed.	$3,000	x	High	$100,000	x	High			1 year	Trees about to fall into channel may need to be removed. Costs will vary depending on extent of required tree removal.
Introduce/ enforce boat traffic speed limit (discuss with Port Authority, improve signage, enforce)	Nominal		High	Nominal		High			N/A	Allowable vessel operations should consider erosion, and not just dike overtopping.
Prepare Operation and Maintenance Manual for dike	$30,000	x	High	$60,000	x	High			6 months	Scope guided by up-to-date dike o&m manual standards
Assess seepage during high freshet and prepare seepage barrier designs. (Installation extra.)	$15,000	x	High	$19,500	x	High			1 year (work must occur during freshet)	To be completed by geotechnical engineers

2023 Assessment – Lower-Priority Items

Improvement	2012 Assessment			2023 Update			Potential Implementation Challenges		Approximate Timeline	Comments/Assumptions
	Cost (2012)	Recommended for Funding (2012)	Priority (2012)	Cost (Updated)	Recommended for Funding (2023)	Priority (2023)	Land Acquisition	In-Stream Construction		
Review and improve island evacuation procedures	Nominal		High	Nominal		Medium			6 months	Main issue raised by some residents is evacuation orders issued too early.
Install permanent floating logs in specific areas / Encourage log-boom tie-up	$40,000	x	High	$52,000	x	Medium		x	1 year	Recommendation to be confirmed in bank erosion study
Relocate beavers etc. (Long term benefits to be determined. Cost not included in total.)	$2,000		Medium	($2,600)		Medium			N/A	Beavers are a factor in toppling trees and aggravating bank erosion.
Stockpile riprap for emergency bank protection	$75,000	x	Medium	$97,500	x	Medium			N/A	Estimated cost based on the previously recommended 1000 m^3; quantity to be refined following recommended bank erosion study
Establish bank protection contingency fund (apply following careful monitoring at critical sites) OR construct bank protection as per results of detailed bank erosion study. Cost to be determined.	$1,000,000	x	Medium	$1,300,000	x	Medium		x	1-2 years (if constructed; depending on permitting, and on type and extent of bank protection)	To be confirmed. Actual cost could be significantly different depending on erosion study recommendations.
Establish seepage prevention fund (apply following geotechnical assessment during high freshet). Install seepage barriers as required.	$500,000	x	Medium	$650,000	x	Medium			1-2 years	Requirements to be determined by seepage assessment.
Raise dike to consistent design crest level standard	$1,500,000	x	Medium	$4,700,000	x	Medium	x	x	6 months – detailed design; 1-2 years – construction (depending on permitting and land acquisition)	Raising on water side, per geotechnical seepage mitigation recommendations. Riprap needed in some locations. Paving by MoTI; estimated cost does not include paving
Prepare temporary flood protection to raise dike to forecasted level using gabions, floodbags, sandbags, etc. (resulting in one-way traffic only). Note that seepage issues are to be addressed first.	$1,500,000		Optional	$1,950,000		As needed			3 months-1 year	May be considered as funding deadline approaches
Provide livestock safe areas	$300,000		Optional	$390,000		Not recommended	x		2+ years	Not feasible, based on discussions with some residents (livestock must be evacuated)
Community fund for flood-proofing or raising buildings	$2,500,000		Optional	$3,250,000		Recommend for future funding			5+ years	New construction is currently required to meet flood construction level (FCL). Establishing a fund could be considered as funding deadline approaches
Repair and repave road (MoTI)	$3,000,000		Optional	$3,900,000		Optional			1-2 years	Repaving likely not a flood issue
Relocate/raise housing presently outside dike.	$1,200,000		Optional	$1,560,000		Optional	x		5+ years	
Repair dike following breach/overtopping	$300,000		As needed	$390,000		As needed			N/A – emergency works	Emergency funding could be available if/when needed

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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Electoral Area and Small Communities Committee

From: Marcin Pachcinski, Division Manager, Implementation and Electoral Area Services, Regional Planning and Housing Services

Date: April 15, 2025 Meeting Date: May 15, 2025

Subject: **Barnston Island Dike Improvement Project – Work Plan**

RECOMMENDATION

That the MVRD Board receive for information the report dated April 15, 2025, titled "Barnston Island Dike Improvement Project – Work Plan".

EXECUTIVE SUMMARY

Metro Vancouver is the local government for Barnston Island and is responsible for emergency management for the Island. There is a 10-km ring dike on the Island to protect it from flooding that is maintained by the local resident-volunteer Barnston Island Diking District and overseen directly by the Province. The Province provided Metro Vancouver with a grant of $5.25 million in 2023 to manage the process and implementation of dike improvements. Metro Vancouver also committed $1.5 million of the Growing Communities Fund grant towards this project.

Following an update in 2024 to the Barnston Island Dike Assessment Report (2012), the MVRD Board directed staff to use the priority projects identified in the update as a guide for implementing dike improvements. Through a competitive procurement process, Metro Vancouver recently entered into a contract with Northwest Hydraulic Consultants Ltd. to complete five priorities:

Barnston Island Drainage and Dike Improvement Project Work Plan	**Approximate Cost**
Task 1: Design for the replacement of the flood box and pump station for the Barnston Island dike	$500,000
Task 2: Drainage ditch study and drainage ditch upgrades on Barnston Island	$95,000
Task 3: Bank erosion study and erosion monitoring network	$69,000
Task 4: Dike seepage assessment	$85,000
Task 5: Operation and maintenance manual for the dike.	$21,000
Total	**$770,000**

The associated work plan is presented in this report for information.

PURPOSE

To present the work plan for the Barnston Island Dike Improvement Project to the Electoral Area and Small Communities Committee and MVRD Board for information.

BACKGROUND

At its March 2024 meeting, the MVRD Board passed the following resolution:

> *That the MVRD Board:*
> *a) receive for information the report dated February 8, 2024, titled "Barnston Island Dike Improvement Project – Updated Dike Assessment"; and*
> *b) direct staff to use the cost and priority rating table, as presented in Table 1 of this report, as a guide for implementing individual Barnston Island dike infrastructure improvements.*

In March 2025, Metro Vancouver concluded a competitive procurement process and entered into a contract with the successful bidder: Northwest Hydraulic Consultants Ltd. Their work plan is now presented for information.

BARNSTON ISLAND DIKE

Barnston Island is part of Metro Vancouver's Electoral Area A and is protected by a 10-km ring dike, on top of which there is a Ministry of Transportation and Infrastructure-maintained road. A portion of the dike and road run across Katzie First Nation IR#3. The dike does not meet current Dike Design & Construction Guidelines set by the Province. Metro Vancouver is the local government for Barnston Island, but is not responsible for the dike, and the MVRD Board has expressed concerns regarding the proposed transfer of diking district responsibilities to local governments, in this case, Metro Vancouver. Oversight of the dike and the Barnston Island Diking District remains with the Province.

The Drainage, Ditch and Dike Act, enacted in 1907, enabled five autonomous diking districts, including the Barnston Island Diking District, to collect taxes to construct and maintain works for diking and drainage. The Barnston Island Diking District is comprised of a few local resident volunteers, who collect approximately $15,000 annually from Barnston Island property owners. The annual amount typically covers basic maintenance, such as mowing and drainage channel clearing. While the local resident volunteers are committed to doing what they can to maintain the dike, the very limited tax base of Barnston Island coupled with the scale and complexity of the upgrades identified in the Barnston Island Dike Assessment (2012) mean the upgrades cannot be properly assessed (e.g. engineering studies), funded and coordinated by relying on the Barnston Island Drainage District.

In recognition of the challenges described above, the Province provided Metro Vancouver with a grant of $5.25 million in summer 2023 under the *Emergency Program Act (*now the *Emergency and Disaster Management Act)*. The funds are to be used for dike improvements to advance flood protection and to help ensure that Barnston Island remains a viable place for living and farming. Metro Vancouver also committed $1.5 million of the Growing Communities Fund grant towards this project.

BARNSTON ISLAND DIKE ASSESSMENT UPDATE

Following receipt of the provincial grant and board direction to use it for dike improvements, Metro Vancouver retained Northwest Hydraulic Consultants Ltd. to review and update the Barnston Island Dike Assessment Report from 2012, including updating previously estimated costs of recommended improvements and re-evaluating priority ratings.

The Barnston Island Dike Assessment Update Report (Reference 1) includes a table that shows the improvement priority rankings alongside a comparison of costs and funding between the 2012 report and the current one. In March 2024, the MVRD Board directed staff to use this priority table as a guide for implementing individual Barnston Island dike infrastructure improvements.

Staff used the priority table to prepare a request for proposal (RFP) package that was put out for bids in fall 2024. The RFP focused on high priority projects and was organized around the following five tasks:

1. Pump station and flood box replacement design
2. Drainage ditch network upgrade design
3. Bank erosion assessment
4. Dike seepage assessment
5. Development of a dike operations manual

WORK PLAN

A consultant team led by Northwest Hydraulic Consultants Ltd. was the successful bidder and in March 2025 Metro Vancouver entered into a contract with them worth approximately $770,000 for the five tasks summarized below and described in greater detail in the work plan (Attachment 1).

1. **Pump station and flood box replacement design (present – November 2026)**
    a. *Phase 1 – Start-Up and Conceptual Design*
    Includes water level monitoring, a geotechnical analysis, a preliminary environmental impact assessment, and the preparation of a conceptual design memo that will analyze at least three options and consider design risks, construction phasing and costs.
    b. *Phase 2 – Detailed Design and Tender Support*
    Entails preparation of design drawings, contract documents, cost estimates, a construction environmental management plan, and a final environmental impact assessment, along with tender support and applying for necessary provincial and federal permits.
    c. *Phase 3 – Construction Services and Contract Administration*
    Entails preparation and issuance of construction drawings and specifications and post-construction record drawings, construction meetings and field reviews, project commissioning, and environmental monitoring.

    Staff note that the actual construction of the pump station and flood box replacement are not included in the contract with Northwest Hydraulic Consultants Ltd. and will be paid for from the remaining grant funds.

2. **Drainage ditch network upgrade design (present – January 2026)**
    a. *Phase 1 – Drainage Ditch Study*
    Involves assessing current conditions and preparing a technical report with conceptual options and recommendations.
    b. *Phase 2 – Drainage Ditch Upgrades – Detailed Design, and Tender Support*
    Entails preparation of design drawings, a design reports, a construction environmental management plan, and a final environmental impact assessment, along with tender support and applying for necessary provincial and federal permits.
    c. *Phase 3 – Contract Administration*
    Includes site meetings, inspections and instructions, review of contractor submittals, construction field review, and environmental monitoring.

3. **Bank erosion assessment (present – August 2025)**
    Entails a scour and erosion assessment, boat survey of the shoreline, the establishment of an erosion monitoring program, and an arborist assessment of trees located around the perimeter of Barnston Island.

4. **Dike seepage assessment (depends on permit timelines; report takes 2 months to finish)**
    Includes a geotechnical analysis based on a review of existing information and a field investigation to estimate seepage rates through the existing dike, the results of which will be presented in a report with preliminary design recommendations for a seepage barrier.

5. **Development of a dike operations manual (present – August 2025)**
    Involves the creation of a manual (currently none exists) that consolidates information on infrastructure history, construction, maintenance and inspection records, operating procedures and other relevant information.

ONGOING CONSULTATION

Since preparing the update to the dike assessment in 2024, Metro Vancouver staff have continued to engage with the Katzie First Nation, the Barnston Island Diking District, Barnston Island residents, relevant provincial agencies, and others (e.g. Port) on this work. This will continue throughout the phases of this contract and will include both virtual meetings (e.g. technical updates) and in-person meetings on Barnston Island (site visits and community meetings to update residents). A community meeting to present this work plan and answer any questions from residents is being planned for early summer.

Metro Vancouver staff will also provide updates to the Electoral Area and Small Communities Committee and MVRD Board at key milestones in the projects' implementation and through the annual budget process.

GRANT TIMELINE

The agreement for $5.25 million dollar provincial grant currently stipulates that the work must be complete by March 2026. Given the work plan expects that work on the five tasks will not be complete until November 2026, Metro Vancouver have contacted provincial staff to revise the deadline. Provincial staff have confirmed that they understand the work plan timelines, are amenable to an extension of the grant deadline, and have requested that both sides revisit a deadline extension request in the next 4-6 months. Staff will update the Electoral Area and Small Communities Committee and MVRD Board once the extension request has been submitted.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

Costs associated with this work plan and future work related to the Barnston Island dike improvement project will be covered by the $5.25-million-dollar provincial grant Metro Vancouver received in 2023 and by the $1.5-million-dollar portion of the Growing Communities Fund that Metro Vancouver has dedicated for this project. There are no impacts to the Electoral Area A tax requisition as part of this work. The current grant amount and budgeted uses will be reflected in the Electoral Area Financial Plan that is presented to the Electoral Area and Small Communities Committee and MVRD Board annually.

To date, approximately $60,000 of the grant funds have been spent, primarily on the update to the dike assessment from 2012, which was used to identify the priority tasks that are now starting to be implemented. Additional work was also done to understand current conditions of the dike, bank erosion, and archeological values.

The table below shows the approximate costs of the five tasks that are presented in this report.

Barnston Island Drainage and Dike Improvement Project Work Plan	**Approximate Costs**
Task 1: Design for the replacement of the flood box and pump station for the Barnston Island dike	$500,000
Task 2: Drainage ditch study and drainage ditch upgrades on Barnston Island	$95,000
Task 3: Bank erosion study and erosion monitoring network	$69,000
Task 4: Dike seepage assessment	$85,000
Task 5: Operation and maintenance manual for the dike.	$21,000
Total	**$770,000**

CONCLUSION

As the local government responsible for emergency management on Barnston Island, Metro Vancouver has an interest in strengthening the integrity of the Barnston Island dike. The work plan presented in this report represents the start of the implementation of the high-priority tasks identified in the 2024 Barnston Island Dike Assessment Update.

ATTACHMENT

1. Barnston Island Dike and Drainage Improvement Project Work Plan (titled "Section 4 – Project Methodology, Work Plan, Tasks and Schedule").

REFERENCES

1. Northwest Hydraulic Consultants (NHC). (2024, May). *2024 Barnston Island Dike Assessment Update*. Retrieved from https://metrovancouver.org/services/regional-planning/Documents/barnston-island-dike-assessment-update2024.pdf. Last accessed 2025, April 15.

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Section 4 – Project Methodology, Work Plan, Tasks and Schedule

INTRODUCTION TO METHODOLOGY

Despite being located in the populous Metro Vancouver, the 567 ha Barnston Island is an isolated rural area that provides the home for a vibrant community for Katzie First Nation (Barnston IR3), numerous active agricultural farmyards, and parkland. It is located in the sand bed reach, near the outlet, of the longest river within BC, and one of the longest unregulated rivers in North America, the Fraser River. The main channel of the Fraser River flows directly along the north side of the island; this reach is known as Bishop Reach. The south channel, Parson Channel, flows as an arch around the south and west side of the island. The majority of flow is conveyed within Bishop Channel, as Parson Channel is narrower, shallower, and nearly 50% longer. The construction of the Golden Ears bridge, less than 1 km upstream, and end of channel maintenance has likely resulted in reduced depth along Parson Channel, further limiting its conveyance.

As an island within the Fraser River, it subject to a wide range of water level resulting from high flows within the Fraser River originating from spring snowmelt in the upper watershed as well as periodic moderately high flows in the lower Fraser River and downstream entering Pitt River resulting from intense fall and winter storms (such as the 2021 November 15th atmospheric river). In addition, the water level in the river fluctuates daily with the tidal cycle of the Salish Sea.

The island has an elevation that ranges from 1 to 4 m above sea level. In comparison the Fraser River has a 50-year (2% AEP) flood level of 4.5 to 5.5 m and a potential design flood level as high as El. 6.4 m (1894 flood or ~0.2% AEP with freeboard). To resist frequent flooding the island is protected by a dike that surrounds the majority of the island; with some land and a few buildings located outside of the dike. However, the dike is insufficiently high, potentially overtopping during a 40-yr flood, and susceptible to seepage, erosion, and undermining. Since the island is surrounded by a dike, intense and prolonged rainfall in which the Lower Mainland is know for, can become contained within the dike threatening production on the agricultural fields as well as safe use of the island. To account for the drainage of this stormwater, a series of ditches convey flow to the western side of the island. An aging flood box allows for drainage of this water during low Fraser River levels (i.e., low flow and low tides) with a pump station providing capacity when Fraser River water levels are high.

The structural mitigations that provide the island a level of flood protection are aging and in need of support. This will be exasperated with climate change. Ongoing global climate change is expected to increase the intensity of storms over the present century by 40% to 90% near Barnston Island (GHD, 2018). This will increase the demand on the drainage network. It is

projected, that with warming temperatures snowpack across the Fraser River basin will be less, potentially counteracting the increased precipitation and moderating the increase in freshet flows. However, fall and winter flows, dominated by lower watershed storm events, are likely to increase resulting in higher and prolonged Fraser River water levels in the fall and winter. Increased precipitation and duration of high Fraser River levels fall through winter may increase the rate and extent of geomorphic channel changes (e.g., channel scour, degradation, aggradation migration, widening) and will increase the reliance on the flood box and pump station to keep Barnston Island safe from flooding and viable for farming.

Metro Vancouver is aware of the present state of flood protections and projected future risks. In response, they have conducted a number of studies, *such as the 2024 and 2012 Barnston Island dike assessments conducted by NHC*, to identify needs and Metro Vancouver secured a $5.2M grant from the Province to improve flood protections on Barnston Island. This grant was initially to be applied by 2026, highlighting the need for timely design and implementation of the flood protection improvements. The flood protection at Barnston Island are complex and should be prioritized, potentially based on present risk, projected future risk, community priorities, and available funding. Often communities prioritize frequent, operationally disruptive flooding (e.g., drainage and pumping requirements) higher than catastrophic flooding (e.g., dike failure). Multi-generational agricultural communities and First Nations, as located on Barnston Island, potentially prioritize multi-generational risks as they place a higher value on future generations. The local values and priorities will need to be considered in the prioritization and communication of the flood mitigation plan.

This proposal has been prepared to provide a team of passionate, technical experts to develop detailed design for all elements of the Dike and Drainage Improvements on Barnston Island. The following subsections describe each of the phases presented within the RFP as individual tasks:

1. Pump station and flood box replacement design
2. Drainage ditch network upgrade design
3. Bank erosion assessment
4. Dike seepage assessment
5. Development of a dike operations O&M manual

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1 DESIGN FOR THE REPLACEMENT OF THE BARNSTON ISLAND FLOOD BOX AND PUMP STATION

1.1 Project Understanding

One pump station, located on the west side of the island, serves the entire island through a network of drainage ditches. Additional privately operated pump(s) are located on the northeast end of the island to serve the flooding and draining of the cranberry fields. The single community pump station was originally built in 1937. The timber-frame, corrugated steel structure is secured to a minimal concrete foundation. The pump station contains two pumps:

- Lead pump, which is active
  installed in 1997, with 1953 35 HP, 440 V, 690 RFP 3-phase electric motor,
  rated for 630 L/s (10,000 US GPM)
- Spare pump, which is not in use
  unknown HP, rated for 160 L/s (2,500 USGPM)

The lead pump has undergone a series of minor electrical and mechanical upgrades, including replacement of the motor in 1953, replacement of the pump in 1997, rewinding of the motor in 2010, and basic safety upgrades in 2021, which involved installing a new portable generator.

In our review of the background information for this project, we identified several safety and operational concerns for the existing station and recommended a full replacement of the pump station. Based on other work conducted in the area, the soils at the site are anticipated to be vulnerable to seismic-induced liquefaction under the design earthquakes. Future design of a replacement pump station will need to address liquefaction susceptibility in the soils.

The existing flood box is also aging. Past concerns include potential piping under the structure, deteriorating hinge pins, deteriorating gates or stop logs, and potential erosion. There may be opportunity to lower the flood box invert to increase drainage during low water.

Replacement of the pump station and flood box are included in the overall dike improvements project as part of the RFP scope. According to RFP Addendum #4, we understand that the pump station will be designed as a post-disaster facility using the using the 6th Generation Seismic Hazard Model of Canada. The pump station design must comply with the 2024 BC *Building Code*, which requires review at 1:2,475 annual exceedance probability (AEP) for ultimate limit state and a service-level performance review at 1:475 AEP.

Drawing from our previous experience supporting Metro Vancouver with the Barnston Island Pump Station the following environmental concerns were identified in addition to the structural and electrical issues.

1.1.1 Environmental Considerations

Pump stations that are not designed for fish passage will likely harm or kill fish when the pumps are activated. This is especially the case for many older pump stations throughout the Fraser River and Lower Mainland, including the current Barnston Island pump station. More recently, fish-friendly pump station designs have significantly lowered fish mortality rates. It will be critically important to create a pump station design that provides safe passage from the Fraser River (i.e., via the flood box) and back to the Fraser River for all fish species expected to utilize the Barnston Island drainage ditch network.

Regulators will likely reject a design that is expected to result in fish mortality, so it will be imperative to:

- Assess potential environmental impacts of the design options on the environment (e.g., timing and frequency of hydraulic conditions in relation to fish species and life stage)
- Provide design input that avoids harming or killing fish or other valued species and their habitat (e.g., ramping of water levels where the drainage network provides aquatic habitat, appropriate pump intake hydraulics at screens or use of Archimedes screw pumps)
- Prepare and oversee a construction plan that avoids potential harmful alteration or death of fish.

The environmental specialist will consult with regulators throughout the design phase to ensure the design meets all regulatory expectations. NHC contends that Metro Vancouver can avoid killing fish during the construction and operation of the pump station and flood box through appropriate design. Notifications, authorizations, reviews or permits may be required from the Department of Fisheries and Oceans Canada (DFO) under the *Federal Fisheries Act*, from the province through *Section 11* of the *Water Sustainability Act* (WSA), and in the form of a project environmental review (PER) from the Vancouver Fraser Port Authority (VFPA).

1.2 Project Methodology and Work Plan

This section of NHC's proposal discusses our proposed methodology for executing Task 1 of this project and includes a detailed work plan covering the services identified in all three phases of Task 1, as specified in RFP No. 24-517. Task 1.

Phase 1: Our proposed methodology includes details on our proposed approach for the project's start-up and conceptual design phase, which includes details on our proposed

geotechnical investigation, conceptual design, geotechnical analysis and report, and preliminary environmental impact assessment.

Phase 2: This section presents NHC's proposed approach to provide the detailed design, drawings, contract documents, cost estimates, development of a construction environmental management plan (CEMP), obtaining the required regulatory approvals, and supporting the tender process.

Phase 3: This section provides details on NHC's proposed environmental monitoring, construction services, and contract administration.

1.2.1 Subconsultants engaged

NHC has assembled a specialized project team that is tailored to the project's requirements. For Task 1, each proponent will be responsible for project components as follows:

- NHC – project management and design oversight, hydrology, and hydrotechnical design
- Water Street – pump station and flood box civil design
- GEA – structural design
- MTS – electrical, instrumentation and controls design
- Thurber – Geotechnical design
- Roe – environmental review and permitting

Each of these work components support and interact with findings from the other components.

1.2.2 Phase 1 – Start-Up and Conceptual Design

Phase 1 activities will include review of the data and the site as well as development of conceptual design options. NHC's specialist team will communicate and collaborate with Metro Vancouver during this and all three task phases to maintain alignment with the project direction, expectations, and project requirements.

When completing Phase 1 tasks, our objectives will be to eliminate assumptions, reduce risk, and report transparently. Our approach will enable our design team to accelerate detailed design for the low-risk aspects of the project while more broadly discussing aspects of the project that will require greater team focus. We will work closely with our subcontracting partner Water Street Engineering to develop pump station replacement options, and we will develop critical design criteria that will include design flow(s) for the station, water levels associated with various pumping rates, and required invert and capacity amounts for the flood box.

Our team will conduct desktop research by reviewing previously prepared and available background reports, and we will conduct a site visit to review existing conditions and infrastructure and identify and investigate any new site constraints. We will also revisit the

necessary flood scenarios during the drainage study and provide inputs for the pump station design as required, including the station design flow.

Water-Level Monitoring Equipment

NHC's previous dike assessments have included recommendations to install equipment to monitor water levels and provide design inputs for the pump station and flood box. Providing meaningful design inputs requires equipment to be in place for several years before a representative period of record can be established.

Since this project is to proceed to detailed design, the value of the water level monitoring task is substantially diminished and therefore has not been included in our proposal. Instead, we will seek out existing hydrometric data and draw upon hydraulic analyses and calculations to inform design parameters.

Geotechnical Investigation

We propose to investigate subsurface conditions by drilling two solid-stem auger test holes to a maximum depth of approximately 10 m. One test hole will be supplemented with a seismic cone penetration test to a maximum depth of roughly 30 m (or to refusal), which will provide information on deep soil characteristics for the seismic assessment. Because the test holes will be located on an existing dike, our investigation will follow the steps described in the Ministry of Forests, Lands and Natural Resource Operations (Ministry) *General Guidelines - Exploratory Geotechnical Testing Within a Dike or Dike Right of Way*.

In addition to collecting data and other details in the field to characterize soil and groundwater conditions, our experienced geotechnical technicians will take and retain disturbed samples for inhouse laboratory testing of routine moisture content and visual classification. We will also carry out Atterberg limit testing and sieve analyses on selected representative samples. After developing our investigation plan, we will provide the Ministry with plan details and will seek approval for testing under the *Dike Management Act*. Our team will also seal and grout the test holes in general accordance with BC Groundwater Protection Regulations and additional Ministry requirements, and we will survey the test hole locations using a handheld GPS.

Before advancing the test holes, we will submit a BC 1 Call ticket to notify all utility owners of our intention to disturb the ground during our investigation. We will also contact utility owners that are not a part of the BC 1 Call system. Our team will engage a utility locate subcontractor to clear the test hole locations for the underground services[1].

[1] Please note that the utility locate subcontractor can locate conductive conduits only; non-metallic pipes, such as PVC water and gas lines, cannot be reliably detected. NHC and Thurber will not be responsible for damage to utilities that are not shown or incorrectly located on the drawings provided to us, or not located by the utility locate contractor.

NHC and Thurber will retain a traffic control subcontractor during the utility locating and drilling and will follow the traffic management plan submitted as part of the permitting process. We expect the drill rig will leave some marks on the asphalt and disturb dirt and grass on site, particularly if the ground is saturated. We will attempt to clean up the site as much as reasonably possible, but some surface disturbance should be expected along the test hole travel route and at the test hole locations. Repairs will include reinstating the test hole to surface grade and topping holes in the road surface with cold-mix asphalt. Our team can complete additional repairs as needed at an additional cost.

Conceptual Design Memo

Following a review of the existing systems, our team will prepare content for inclusion in the conceptual design technical memorandum. The following components are examples of content that we will include:

- **Options Analysis:** NHC will develop at least three options for the pump station and flood box replacement, which may include combinations of the following:
    - Various general pump station arrangements based on typical practices along the Fraser and Pitt rivers; steel pile vs. concrete intake structure; forebay configuration; elevation and location of control room; provision of intermediate deck and other access considerations; ability to remove pumping units; screen types (bar racks are typical); number and types of pumping units (two axial-flow units are typical); and sizing of the force main and profile through the dike. Our team will develop conceptual structural designs and drawings for two options: one with the kiosk (please refer to section 1.2.3 of this proposal) and another with a building.
    - The need to protect fish and fish habitat will affect the selection of both the new pump station and the flood box. We anticipate that the most common type of drainage pumps in use along the Fraser River are Flygt pumps from Xylem Water Solutions, which are not typically considered fish-friendly. At the conceptual design stage, our team will consider alternative manufacturers of fish-friendly drainage pumps, potentially including Bedford, Pentair, Rodelta, and Bosman. We may also consider several Archimedes screw pump manufacturers.
    - Various options for the flood box include sizing and invert elevation options, as well as choices in pipe materials and types of outlet gates and headwalls. The RFP does not specify whether fish passage is required in either direction through the facility, but consideration will be given to both fish passage and fish monitoring at the conceptual design stage. Various gate types are available (e.g., top- or side-hinged), and racks or slots can be added for installing antennas and monitoring radio-tagged fish; additionally, other facilities can be added to accommodate manual counting.

    - Access, reliability, maintainability, and safety are key. Staff must be able to work safely, remove and install heavy equipment, and operate and clean system trash racks, sometimes under severe conditions. At the same time, the public must be protected and excluded from hazardous areas.
    - Erosion protection such as riprap will be required at the outlet of the flood box and especially at the station's force main. NHC will design the erosion protection.
- **Design Risks:** NHC will identify aspects of the design that will require an additional detailed examination to ensure the project meets all desired criteria.
- **Construction Phasing Strategies:** NHC will review the available construction execution strategies to identify issues, such as site access, instream work requirements and environmental constraints, demolition or decommissioning of the existing pump station, bypass pumping, and temporary electrical considerations. The findings of this review will later inform development of the inspection plan, the startup and commissioning plan, and tender documents, including the schedule of prices and special conditions.
- **Costs:** While the conceptual design stage does not include a cost estimate, we anticipate that we will provide Metro Vancouver with high-level cost factors for the purposes of options development, comparison, and discussion. These may include qualitative rankings (e.g., identifying some options as more or less costly than others) or quantitative comparisons of specific sub-components and equipment, such as pumping units provided by different manufacturers.

At a minimum, NHC has identified the following opportunities for collaboration during Phase 1:

- project kickoff meeting with Metro Vancouver
- site visit and meeting (in-person)
- conceptual design / options selection review meeting

Geotechnical Analysis and Report

After reviewing existing reports and other available information and considering the results of our geotechnical investigation and lab testing, our team will carry out the geotechnical analyses. Our reports will include the results of our site investigation, as well as details from our results discussion and recommendations on the following topics:

- seismic site classification, seismic hazard, and liquefaction susceptibility
- recommendations for ground improvement works using stone columns to reduce liquefaction-induced and post-seismic ground displacements of the new pump station to within tolerable deformation limits
- foundation design, assuming a grade-supported structure is positioned on stone columns
- below-grade structure design, including lateral Earth pressures
- discharge pipe and flood box penetrations through the existing dike

- subgrade preparation and settlement estimates
- seismic performance, including seismic deformations of the proposed structures using simplified empirical methods
- densification criteria for ground improvement
- construction considerations, including preliminary discussion of dewatering and temporary excavation shoring considerations; we assume the detailed design of temporary shoring and construction dewatering will be the contractor's responsibility

NHC assumes the pump station will be a rigid, short-period structure (i.e., lateral period 0.5 s or less), and a site-specific ground response analysis will not be required.

Preliminary Environmental Impact Assessment

The NHC environmental team (Roe) will conduct an initial preliminary environmental overview assessment to identify the valued ecosystem components that could be affected by the project. This overview assessment will provide the background information required to conduct the preliminary environmental impact assessment of conceptual design options, which in turn will inform selection of the final design. The overview assessment and impact assessment can be combined into a single environmental impact assessment (EIA) report, which will be submitted as a component for the WSA Change Approval application, the *Fisheries Act* Authorization request to DFO, and the VFPA project and environmental review process. We will include the following components:

- project overview and description of works
- environmental regulatory context to the Project
- environmental overview assessment, including background research, desktop review of environmental databases, and field assessment of identified valued environmental components within, adjacent to, and near the pump station
- fish sampling to identify species present
- impact analysis of the design options on the identified valued environmental components

1.2.3 Phase 2 – Detailed Design and Tender Support

Phase 2 of Task 1 will require the most amount of coordination between NHC's project team and others. We will incorporate comments and pertinent information from Metro Vancouver and other project stakeholders into the design. We have budgeted an additional site visit during this phase to confirm site details once the design has progressed past the conceptual stage.

While the conceptual design phase may consider various layout options and pump types, our budget for detail design is based on a control enclosure that is either a kiosk or a small pre-engineered building that will not require a building permit. In addition, our proposed budget includes the use of axial-flow pumping units. An example of a typical installation is provided in

Section 1.2.3 below. If a building permit or the use of Archimedes screw pumps are required, additional funds will need to be added to the budget.

Similarly, our budget for detailed design is based on the provision of a flood box facility, including a precast concrete inlet and outlet structures, pipe(s), and top-hinged control gate(s). Other potential design configurations, including the use of custom, cast-in-place concrete structures or self-regulating gates, could also require additional effort and budget.

Example Kiosk Style Pump Station, Quaamitch Drainage Pump Station, Nicomen Island

The style of pump station shown in the photo above has a large controls kiosk nearby that is not shown in the photo. NHC is aware that Metro Vancouver already owns kiosk-style sewage pump stations, including a Hudson PS with two15-HP pumps, Willingdon PS with two 15-HP pumps, and Gleneagles No. 4 and No. 5. Such a kiosk is easy and convenient for Diking District personnel to access and use while providing a cost-effective solution for accommodating pump station components.

Design Drawings

Our team will produce drawings for the 50%, 90%, and final submission stages. Following are examples of drawings that may be included for the project:

- cover sheet
- general notes
- site plan
- discharge pipe – plan and profile
- pump station – plan and sections
- flood box profile details

- erosion protection – plan and sections (if required)
- structural notes (e.g., concrete outline, reinforcing)
- electrical, instrumentation, and control

We will refine the final design throughout the detailed design process and will consider the following components:

- Construction Phasing Strategy: Throughout the detailed design development phase, NHC will revisit and re-evaluate construction considerations, building off the findings from the conceptual design phase.
- Control Narratives: NHC will coordinate with the electrical engineer to prepare operational control philosophies for the proposed systems.

Contract Documents

Our team will provide technical specifications for the 90% and final submissions and will prepare the complete technical specifications package at the final submission, which will form part of the contract documents. We assume that relevant standard Metro Vancouver specifications will be made available.

The contract documents package will include a schedule of quantities. We will provide a draft statement of qualifications at the 50% submission stage and will update the draft at the 90% submission stage.

Cost Estimates

Our design team will provide updated construction cost estimates at each submission stage, including 50%, 90%, and final).

In the RFP Metro Vancouver requested Class B estimates for all design submissions; however, earlier submissions, such as the 50% design, may better suit a Class C estimate instead. Similarly, a Class A estimate may be better suited at the final design submission for tender comparison. We will be happy to discuss and confirm these details with Metro Vancouver during the project start-up phase.

Tender Support

NHC's team will provide engineering services during the tendering of the contract documents. We will be available to answer questions, provide clarifications and addenda, and assist with the review of the tender packages, as required.

The following opportunities for collaboration have been allotted during Phase 2:

- 50% and 90% design review meetings (virtual)

- one additional site visit
- tender support

Construction Environmental Management Plan

Our team will prepare a CEMP, which will provide a framework for protecting the valued environmental components identified in the EIA and identify required mitigations for the contractor during construction. Like the EIA, the CEMP is a typical component that must be included in the WSA Change Approval application, the DFO request for project review, and VFPA PER permit application. We anticipate the following components to be included in the CEMP:

- environmental monitoring and supervision requirements
- erosion and sediment control
- waste management
- clearing and grubbing
- working in and around water
- fish protection and salvage
- instream isolation
- water quality management
- tree protection
- hazard tree management
- soil protection and conservation
- invasive plant management
- wildlife protection and mitigation – species at risk protection
- Air quality and noise mitigation, and dust control
- spill prevention and emergency response
- site restoration and planting
- offsetting implementation and effectiveness monitoring

Regulatory Approval and Permit Acquisition

We anticipate that replacing the pump station and flood box will require a WSA Change Approval for conducting changes in and about a stream, as well as a PER permit from the VFPA. A request for project review must also be submitted to DFO, and their approval will be required. Following are the tasks included during this project phase:

- preliminary consultation with regulatory contacts for guidance on conceptual design
- preparation of necessary components for application submissions, including EIA, CEMP, and 70% design drawings
- compilation of application package and formal submission to regulatory bodies
- consultation and responses to comments from regulators and reviewing First Nations

- required revisions and resubmissions of application package components

Final Environmental Impact Assessment

The environmental impact assessment of the final design is to be prepared as a revision of the preliminary environmental impact assessment, which details only the final design. This assessment is to be included in the EIA for inclusion in the application packages to be submitted to regulators.

1.2.4 Phase 3 – Construction Services and Contract Administration

Following project award, NHC and our project partners will issue a set of drawings and specifications for construction. We will incorporate into the construction documents any updates or changes highlighted via the addenda during the tender stage. Construction services will be performed as required and may include providing input toward administering progress payments, requests for information, change requests, site reviews, shop drawing reviews, monthly meetings, coordination, required drawing updates, and project oversight

On behalf of NHC's team, Water Street will lead contract administration during construction of the pump station. Primary duties will include conducting construction reviews, performing contract administration services, and other duties, as described in the RFP. Additionally, each field review will be followed up with a field review report that will provide details on work completed in addition to any deficiencies found. We assume that field reviews will be conducted twice per month, in addition to monthly site meetings, and three structural field reviews will take place.

A startup and commissioning plan and operation and maintenance manual will be finalized for the pump station. We assume we will use the pump station operations and maintenance manual as an input for the dike operations and maintenance manual (RFP Task 5).

During Phase 3, our team will conduct field reviews; we also anticipate several collaboration opportunities :

- construction kick-off meeting
- construction progress meetings as required (assumed monthly)
- pre-commissioning meeting

The following activities are expected to occur during the Services During Testing and Commissioning Phase:

- Review testing and commissioning plan submitted by the contractor; update and complete as necessary. Establish standards and strategies for commissioning (i.e., performance requirements).

- Prepare and maintain log of results for the above checkouts and tests through start-up and commissioning. Review the test documentation and recommend it for acceptance.
- Coordinate with Metro Vancouver Project Engineer to facilitate all testing to be performed by contractor.
- Review contractor's request for pre-operational checkout. Monitor and coordinate pre-operational checkout activities for the contractor and equipment manufacturer representatives. Pre-operational checkout activities include, at minimum: circuit continuity testing, measurement of insulation resistance, and loop testing. Advise the Corporation's Project Manager of any issues or concerns. Review contractor-submitted test results and recommend acceptance as appropriate.
- Review contractor's request for equipment and system performance testing. Monitor and coordinate contractor's equipment and system performance testing activities. Witness testing and acknowledge acceptance when a test is successful by signing the test results form). Equipment and system performance testing activities include functional and operational testing. Define range of operation for operational testing. Advise Metro Vancouver Project Manager of any issues or concerns. Review test results submitted by the contractor and recommend acceptance of test results.
- As required, provide specialists to witness, with Metro Vancouver, major equipment testing to ensure the supplied equipment meets or exceeds the specifications and all applicable codes and standards. Compile test reports and submit with the acceptance for commissioning package.

To close out the project, we will sign and seal the record drawings. In addition, we will finalize the project completion reports, including submittals, shop drawings, test reports, and other information, which demonstrate the satisfactory completion of the project, and complete an updated process control narrative. In addition, our team will be available to work through warranty issues, as required.

Environmental Monitoring

As a typical permit condition, environmental monitoring of construction activities is required for projects with instream works. We assume that Metro Vancouver will retain an appropriate professional to satisfy the conditions of environmental monitoring; however, we anticipate that Metro Vancouver will also need to audit the contractor to ensure alignment with the Metro Vancouver permit conditions.

The environmental monitoring requirements will depend on the environmental permit approvals and contractor schedule. We will confirm the actual effort once these details materialize. For this proposal, we anticipate 6 site inspections or visits to audit the contractor during construction. Note that we will concentrate the timing of inspections around sensitive times in the project

schedule, including during instream work and after project kick-off. Following are NHC's proposed monitoring tasks for the Owner's Qualified Environmental Professional (QEP):

- Routinely perform sensitive, work-specific environmental audits to evaluate contractor compliance with work practices and procedures; assess the effectiveness of implemented mitigation measures in meeting contract terms; confirm the project meets the conditions of regulatory approvals, with the CEMP; and verify the project complies with the Environmental Protection Plan details, procedures, and work plans.
- Provide recommendations to the contractor to achieve compliance with the CEMP and regulatory requirements.
- Maintain regular contact and meet with Metro Vancouver, project design teams, and the contractor as required, throughout the project's lifecycle.
- Review the contractor's environmental monitoring reports, memorandums, and incident reports to check completeness and accuracy and to assess the success of applied mitigation measures.
- Report to Metro Vancouver on the effectiveness of implemented mitigation measures to avoid or limit project-related impacts, including details on the difficulties encountered and how they are managed.
- As the project advances, coordinate and communicate with regulatory agencies, interested and potentially affected public stakeholders, First Nations, and local communities, as required.
- Recommend suspension of construction activities to Metro Vancouver when encountering non-compliance with the CEMP, contravention of regulatory permits and approvals, or if environmental damage is observed outside of the anticipated project scope; construction activities must remain suspended until appropriate solutions can be identified and implemented.
- Provide additional services at Metro Vancouver's request, including environmental management and monitoring services.
- Compile a construction summary monitoring report based on the contractor's qualified environmental professional (QEP) reports to submit after substantial completion to the regulators

Post-construction inspections are not included in this proposal, but they may be required in future, depending on permit approval terms. Requirements of a WSA Change Approval can include preparing a restoration or compensation plan and implementing an offsetting and effectiveness monitoring plan to monitor the success of the restoration plans over time. These plans are generally required to receive a minimum of five annual inspections per year, including reporting.

1.3 Schedule

NHC's 2024 dike assessment update states that projects implemented under the current grant funding must be completed by March 2026; however, we expect that an extension will be required, based on lead time for tendering and environmental permit approvals. Following is NHC's proposed project timeline:

- Contract award February 2025
- Drainage study completion June 2025
- Pump station task start-up June 2025
- Conceptual design submission August 2025
- 50% submission September 2025
- 90% design submission December 2025
- Final design submission February 2026
- Tendering February to March 2026
- Construction April to October 2026
- Project completion November 2026

This timeline is based on the contract award date of February 2025; in addition, this is also the proposed timeline for the NHC's conceptual drainage network study. Note that construction and completion dates will depend on when permitting is issued, including a *Fisheries Act* Authorization and WSA S.11 permit, which both have lengthy approval periods.

In addition, the schedule is based on Metro Vancouver providing one consolidated set of comments within 2 weeks of each submission. Longer review times, multiple rounds of reviews, or changes in design direction are all associated with substantial schedule risks that may delay the project's overall timeline.

1.4 Project Management and Adequacy of Resources

Please see Section 6 (Project Management and Adequacy of Resources) for a description of NHC's approach to project management and allocation of staff and resources for this project.

2 DRAINAGE DITCH STUDY AND DRAINAGE DITCH UPGRADES

2.1 Project Understanding

This section of our proposal presents our understanding of potential Barnston Island drainage ditch improvements, which we have supported in various capacities for the past 13 years. Below we discuss project objectives and environmental considerations, identify potential challenges associated with ditch monitoring and maintenance, and explore seepage and piping concerns. Also presented is our approach to construction coordination.

Barnston Island is a flat, low-lying area encircled by a perimeter dike. Outflow from the island is facilitated solely through the flood box and pump station located on the island's west side. Inflows contribute to potential flooding and originate from several sources:

1. Fraser River freshet – which drives seepage flow through the dike.
2. Pumped drainage – cranberry farming operations can contribute to water entering the island.
3. Rainfall and snowmelt runoff – which can lead to localized flooding in low-lying areas, particularly in Katzie IR3.

The island's ditch network, which may have been designed with adequate capacity, is hindered by insufficient maintenance, which reduces its functional capacity. The Central (Main) Ditch spans 3.4 km and is operated by the Barnston Island Drainage District (BIDD). Apollo Cranberry Farm shares responsibility for sections of the Main Ditch adjacent to its property, while the Ministry of Transportation and Transit maintains upstream segments (eastern end of the island) that also function as public road ditches. Lateral and southern ditches are the responsibility of individual landowners and are not consistently maintained.

Drainage issues are particularly severe at Katzie IR3, the south portion of the island. Here resident areas not connected to the island's central drainage system experience persistent ponding. The southeastern corner of the island does not drain into the Central Ditch and reportedly flows overland into Katzie IR3. Surface ponding at Katzie IR3 was reportedly exacerbated when neighbouring ditches, along the east and west perimeter of the reserve, were filled in.

2.1.1 Objectives

Deficiencies have been identified in the existing drainage system, including deteriorating or blocked culverts, sloughing ditch segments, and in-filled lateral ditches. A comprehensive assessment of the existing Barnston Island drainage system and design of drainage improvements is necessary to address these issues.

The new design must accommodate monitoring and maintenance requirements, which emphasize low-maintenance solutions to mitigate the effects of insufficient upkeep. Phased construction will be essential in minimizing disruptions to residents, businesses, and the environment. Similarly, coordination of flood box and pump station upgrades (Task 1) is critical to improve system performance and reduce construction-related disruptions.

2.1.2 Environmental Considerations

BC *Habitat Wizard* provides no indication that fish are present in the drainage ditches. However, likely they are likely considered habitat with maintenance works having potential to impact salmonids and other sensitive species. In which case, the drainage ditch network must be afforded environmental protection. Drainage ditch upgrades must be constructed in a way that avoids undue harm to these species and their habitat, and upgrade work may provide opportunities to enhance riparian values.

Within the proposed team, Roe will be responsible for: conducting an environmental assessment to inform on potential impacts of proposed design options; consulting with regulators and providing guidance on obtaining regulatory permits during the design process; preparing and overseeing a construction mitigation plan and a restoration or offsetting compensation plan, as required. We anticipate that this task can be completed without harming fish or destroying their habitat. A *Fisheries Act* Authorization is not anticipated to be required, however a WSA Change Approval will likely be required.

2.1.3 Potential Challenges

Successful implementation of ditch upgrades on Barnston Island will undoubtedly include an acknowledgement that multiple concerned parties exist, each with potentially competing needs and priorities. There are also physical constraints, including hydraulic, geotechnical, access, and land use challenges.

Monitoring and Maintaining the Ditch Network

Regular, coordinated management and maintenance of the ditch network is challenging due to shared responsibility of the Central Ditch and private ownership of lateral ditches. Poor drainage performance is primarily caused by inadequate maintenance, as evident by plugged culverts,

overgrown vegetation, fallen trees, and infilled ditches. Many landowners and farm operators may lack the resources to perform regular maintenance of the lateral ditches on their properties.

Addressing Seepage and Piping Concerns

Seepage takes place both through and under the dike, contributing water to the island when Fraser River levels are high and potentially can result in internal erosion (i.e., piping) and subsequent dike failure (NHC, 2013). While seepage may be reduced through dike upgrades, seepage under the structure may still occur when there are sufficient head differentials across the dike. Seepage is of particular concern at Katzie IR3, where residents report that internal water levels fluctuate with changing river levels, suggesting a well-defined hydraulic connection between the river and the land on other side of the dike Localized pumping of ponded water can appear to be a desirable interim solution. However, this can result in an increased driving head between the river and the protected lands resulting in increased seepage and possibly lead to piping of the dike or underlying materials.

Coordinating Construction Activities

Construction activities will require careful planning to address permitting and environmental considerations, implement temporary diversions, facilitate machinery access, and integrate the flood box and pump station upgrades. Phased construction will be essential to reduce potential disruption to residents, farm operations, and operation of the drainage system.

Accommodating Ditch Geometric Design

Barnston Island's flat, low-lying topography and single pump station results in a low gradient to convey water across the island. Any resistance to flow, such as excessive vegetation or obstructed culvert, can effectively prevent drainage conveyance. Furthermore, the lack of established drainage from IR3 lands needs to be addressed to improve conditions for the residents as well as reduce the temptation for use of local pumping of ponded water. Excessive excavation can also increase seepage from the river or the adjacent cranberry fields, which could impose unnecessary loads on the drainage system and negatively influence cranberry farm operations.

To address these constraints, the design should include strategically widened ditches in select locations to enhance flow and in-ditch storage. This approach will help balance capacity requirements while mitigating potential impacts on dike stability and surrounding agricultural areas.

2.2 Project Methodology

This section of our proposal includes details on: 1) our proposed methods for Phase 1, the drainage ditch study; 2) drainage ditch upgrades, including the detailed design, tender support; and 3) contract administration.

2.2.1 Subconsultants engaged

The drainage study will be primarily completed by NHC, with support from Roe for environmental and permit application items. It is expected that Katzie First Nation will either be an active partner or substantially consulted through this task.

2.2.2 Phase 1 – Drainage Ditch Study

During Phase 1, NHC will thoroughly assess the existing drainage ditch network on Barnston Island, identifying its deficiencies and limitations. The findings will inform the design criteria for Phase 2, which will focus on upgrades to the drainage ditches. Additionally, we will develop conceptual upgrade options and recommendations to support Metro Vancouver's selection of the preferred approach for implementation in Phase 2 of the project.

Project Management – Virtual Start-up Meeting and In-person Site Visit

At project initiation, NHC will attend a virtual kick-off meeting and in-person site visit with Metro Vancouver staff and others. NHC assumes the virtual kick-off and in-person site visit will be 1 to 2 hours in duration, respectively, and will be hosted by Metro Vancouver. During these interactions, NHC will provide an overview of the upcoming work, answer questions from Metro Vancouver and others, and take notes on community partner's concerns, priorities, and objectives.

NHC's proposed Project Manager and one team member will attend meetings with Metro Vancouver Staff and others to provide progress updates and facilitate discussion and input, as needed. NHC assumes these meetings will occur bi-weekly, will be virtual, and will last for 1 hour. We will be available to attend additional virtual or in-person meetings as necessary at an additional cost.

Technical Memo – Existing Conditions of Barnston Island Drainage Network

NHC will complete a comprehensive review of the current Barnston Island drainage ditch network by conducting both desktop research and a field investigation. NHC will leverage our existing database and knowledge of the Barnston Island drainage network from our previous studies, and request additional information from Metro Vancouver, BIDD, and others to fill any gaps we identify. NHC assumes that a one day field investigation will be sufficient to supplement available desktop information.

We will compile the data we collect into GIS software, which our project team can use to support our assessment and design of upgrades to the drainage ditch network. We expect to include the following details in our maps as part of this project:

- existing drainage infrastructure on Barnston Island, including main, lateral, and minor ditches, culverts, and the pump station
- existing orthoimagery, land use, and terrain data
- property boundaries

We will develop a preliminary hydrological-hydraulic model to provide a high-level overview of the drainage ditch system's existing performance. Later, the model will provide a baseline for comparing potential upgrade options.

NHC will prepare a technical memorandum that will include the aforementioned maps showing the current drainage ditch network on Barnston Island, as well as a summary of information on ditch geometry, condition, and ownership; existing infrastructure, such as culverts; and other pertinent information. The memo will summarize our team's preliminary hydrological-hydraulic model development and identify the shortcomings of the current ditch network, which in turn will inform the design basis and subsequent tasks.

Technical Report – Drainage Ditch Study – Conceptual Options and Recommendations

NHC will collaborate with Katzie First Nation, Metro Vancouver, BIDD, and relevant stakeholders when developing a comprehensive design basis, which will include confirming the design return period for rainfall events. We will also complete a local hydrological assessment to estimate rainfall amounts for the selected design return period based on data from nearby rain gauges, and we will assess potential climate change impacts on rainfall amounts. When conducting the hydrological assessment, NHC will prefer rain gauges with good record lengths and close proximities to Barnston Island, such as the Surrey Kwantlen Park gauge.

Next, we will develop a refined hydrological-hydraulic model to evaluate drainage performance and identify potential surface ponding issues. We will then use the model to determine the governing peak runoff rates for storm duration, create up to three concept-level upgrade options, and conduct a high-level performance assessment for each option.

NHC will summarize the proposed options in a technical report and will include details on the selected design rainfall event, development of the hydrologic-hydraulic model, and the rationale, configuration, and expected performance of the proposed upgrade options. Additionally, we will include Class D cost estimates, anticipated permitting requirements, and an estimated implementation timeline for each option.

First Nation and Stakeholder Engagement (Optional, Per Meeting)

NHC is strongly committed to meaningful engagement with local First Nations, as well as other community members and stakeholders, and we understand how important each engagement

activity is a project's long-term success. NHC offers Metro Vancouver direct engagement and meeting facilitation experience, and we provide technical support to engagement efforts led by others. We have provided a per-meeting rate for this optional task, and we assume attendance at a 1-hour virtual meeting, as well as 2 hours to prepare supporting information (e.g., maps, figures). We can also attend meetings in at Metro Vancouver's request.

2.2.3 Phase 2 – Drainage Ditch Upgrades – Detailed Design, Tender Support, and Contract Administration

Supplementary Field Investigation

NHC has included one supplementary field investigation in our budget to support the engineering design process. The purpose of this fieldwork is to address gaps or outdated information regarding existing ground conditions, properties, or infrastructure if any gaps are identified the existing data or data collected during Phase 1. We anticipate that a Project Engineer and a Field Technician can complete the investigations in 1 day. This proposed scope does not include additional geotechnical investigations; however, Thurber Engineering can perform such investigations at an additional cost, if needed.

Engineering Design Drawing Submission (50% Design)

NHC will import the preferred concept into CAD software, and we will refine ditch alignments and sizing to account for local terrain and space requirements. If necessary, we will update the hydrologic-hydraulic model to ensure the refined ditch geometry meets stated performance criteria. As specified by Metro Vancouver, the concept will be advanced to the 50% design stage. NHC will prepare a schedule of quantities and a Class B cost estimate; we will submit the 50% engineering design drawings for review by Metro Vancouver staff.

Technical Report – Draft Design Report

NHC will prepare and submit a draft design report to Metro Vancouver staff for review, which will also support permitting efforts. The report will summarize the design criteria, the condition and limitations of the existing drainage system, the results of hydrologic and hydraulic analyses, and a description of the proposed drainage ditch upgrades.

Following contract award and in collaboration with Metro Vancouver, NHC will develop a phased construction strategy intended to minimize disruptions, including to drainage system operations, road networks, and agricultural activities. This strategy will also address potential construction challenges, such as environmental and drainage operation considerations, and propose suitable timelines, sequences, and work windows to effectively mitigate these challenges.

Engineering Design Drawing and Specifications Submission (90% Design)

Following review by Metro Vancouver staff, NHC will advance the 50% design to the 90% design stage, incorporating feedback from the Metro Vancouver project team. We will develop design specifications, compile general notes and details on phasing and implementation, and provide material specifications, in addition to preparing an updated schedule of quantities and cost estimate. Any recent local unit rates that Metro Vancouver or BIDD have will be requested to improve accuracy of the cost estimate. We will then submit the 90% engineering design drawings for review by Metro Vancouver decision makers.

Engineering Design Drawing and Specifications Submission (Final IFC)

The 90% design will then be finalized as Issued for Construction (IFC) drawings that will incorporate additional feedback from the Metro Vancouver, communities, and stakeholders. We will also finalize design specifications and prepare a final schedule of quantities and update the cost estimate to Class B as possible with the available rate information.

Technical Submittal – Final Design Report

NHC will update the draft design report to address Metro Vancouver comments and reflect the final IFC drawings. We will submit a final, sealed version of the design report along with the IFC drawings.

Technical Submittal – Environmental Impact Assessment

Roe will conduct an environmental overview assessment to identify the valued ecosystem components that the Project may affect. This overview assessment will provide the background and rationale required for the environmental impact assessment of the drainage ditch upgrades. We will then combine the overview assessment and impact assessment into a single EIA report, which will also become a component of the WSA Change Approval application and the DFO request for project review. This EIA report will include:

- project overview and description of works
- description of environmental regulatory context
- details of environmental overview assessment, including background research, desktop review of environmental databases, and field assessment of valued environmental components within, adjacent to, and near the pump station
- fish sampling conducted to identify the species present near the project
- impact analysis of the design options on the valued environmental components

Technical Submittal – Construction Environmental Management Plan

NHC will work with Roe to prepare a CEMP, provide a framework for protecting the valued environmental components identified in the EIA, and identified required mitigation measures that the contractor must adhere to during construction. The CEMP, like the EIA, is a typical

component of the WSA Change Approval application and the DFO request for project review submission. NHC anticipates the components of the CEMP will include the following:

- environmental monitoring and supervision requirements
- erosion and sediment control
- waste management
- clearing and grubbing activities
- work in and around water
- fish protection and salvage
- instream isolation
- water quality management
- tree protection
- hazard tree management
- soil protection and conservation
- invasive plant management
- wildlife protection and mitigation – species at risk protection
- air quality and noise mitigation, dust control
- spill prevention and emergency response
- site restoration and planting
- offsetting implementation and effectiveness monitoring

Regulatory Approval and Permit Acquisition

NHC and Roe anticipate that the drainage ditch upgrades will require a WSA Change Approval for changes in and about a stream and that a request for project review will need to be submitted to DFO for project approval. Tasks involved with seeking regulatory approvals and permits include:

- preliminary consultation with regulatory contacts for guidance on conceptual design
- preparation of necessary components for application submissions, including EIA, CEMP, and 70% design drawings
- compiled application package and formal submission to the above-noted regulatory bodies
- consultation and responses to comments from regulators and reviewing First Nations
- required revisions and component resubmissions from the application package

Tender Support

NHC will support the tendering process by providing written responses to questions received. We have not included allocations for such tasks as developing the RFP, compiling Metro Vancouver-controlled specifications (beyond NHC's technical specifications), or evaluating bids, but we can assist with such tasks as additional scope.

2.2.4 Phase 3 – Contract Administration

Contract administration requirements will depend on items such as the final design, the contractor's methodology and quality of work, and requirements in regulatory permit approvals. These details are presently unknown; however, NHC has assumed a base effort to cover the following activities:

- coordination of and attendance at site meetings, including preparation of agendas and meeting minutes
- review of contractor submittals
- construction field review
- review of change order and progress pay requests
- responses to requests for information
- issue of site instructions and change orders

NHC will undertake a post-construction inspection to identify deficiencies and verify substantial completion, and record drawings will be issued. NHC assumes that the contractor will provide a satisfactory post-construction survey as well as marked-up drawings showing as-built configurations relative to design.

Contract Administration

As a typical permit condition, environmental monitoring is required for instream works projects during construction. Metro Vancouver can choose to have the contractor retain an appropriate professional to satisfy environmental monitoring conditions; however, we anticipate Metro Vancouver will also require contractor auditing to ensure alignment with Metro Vancouver permit conditions. We anticipate 12 site inspections or visits to audit the contractor during construction. Inspections will be concentrated around sensitive times in the project timeline, including during instream work and following project kick-off. Following are the monitoring tasks for Metro Vancouver's QEP:

- Perform routine, sensitive, work-specific environmental audits to evaluate the compliance of the contractor's work practices, procedures, and effectiveness in implementing mitigation measures within the terms and conditions of regulatory approvals, and in compliance with the CEMP, the Environmental Protection Plan, and other relevant procedures, and work plans.
- Provide recommendations to the contractor to achieve compliance with the CEMP and regulatory approvals.
- Maintain regular contact and meet with Metro Vancouver, the design teams, and the contractor as required.
- Review the contractor's environmental monitoring reports, memorandums, and incident reports for completeness, accuracy, and assessment of applied mitigation measures.

- Report to Metro Vancouver on the effectiveness of the implemented mitigation measures to avoid or limit project-related impacts or difficulties encountered, and how they are managed.
- Coordinate and communicate with regulatory agencies, interested and potentially affected public stakeholders, First Nations, and local communities, as required
- Recommend suspension of construction activities to Metro Vancouver based on non-compliance with the CEMP, contravention of regulatory permits and approvals, or if environmental damage outside the Project scope is observed, until appropriate solutions can be identified and implemented.
- Provide additional services at Metro Vancouver's request, including environmental management and monitoring services.
- Compile a construction summary monitoring report based on the contractor's QEP reports and submit to the regulators after substantial completion.

Post-construction inspections are not included in the base scope and will be confirmed based on permit approval requirements. Typical requirements of a WSA Change Approval include preparing a restoration or compensation plan and implementing an offsetting implementation and effectiveness monitoring plan to monitor the success of the restoration plans over time. These plans are generally required to include a minimum of five annual inspections and reports.

2.3 Schedule

This section presents the schedule for completing Phases 1 and 2 of the project, assuming contract award prior to the end of February 2025. The key milestones are summarized in the following table. NHC will review and confirm the project schedule during the kick-off meeting and make adjustments as necessary.

1.	Assumed award	February 2025
2.	Site inspection	March 2025
3.	Phase 1 Drainage Ditch Study report	June 2025
4.	Supplementary fieldwork	July 2025
5.	50% Design drawings + draft report	September 2025
6.	Environmental permit applications	November 2025
7.	90% Design drawings and specifications	November 2025
8.	IFC drawings and specifications	January 2026
9.	Phase 2 drainage ditch upgrades report	January 2026
10.	Environmental submittals (EIA + CEMP)	January 2026

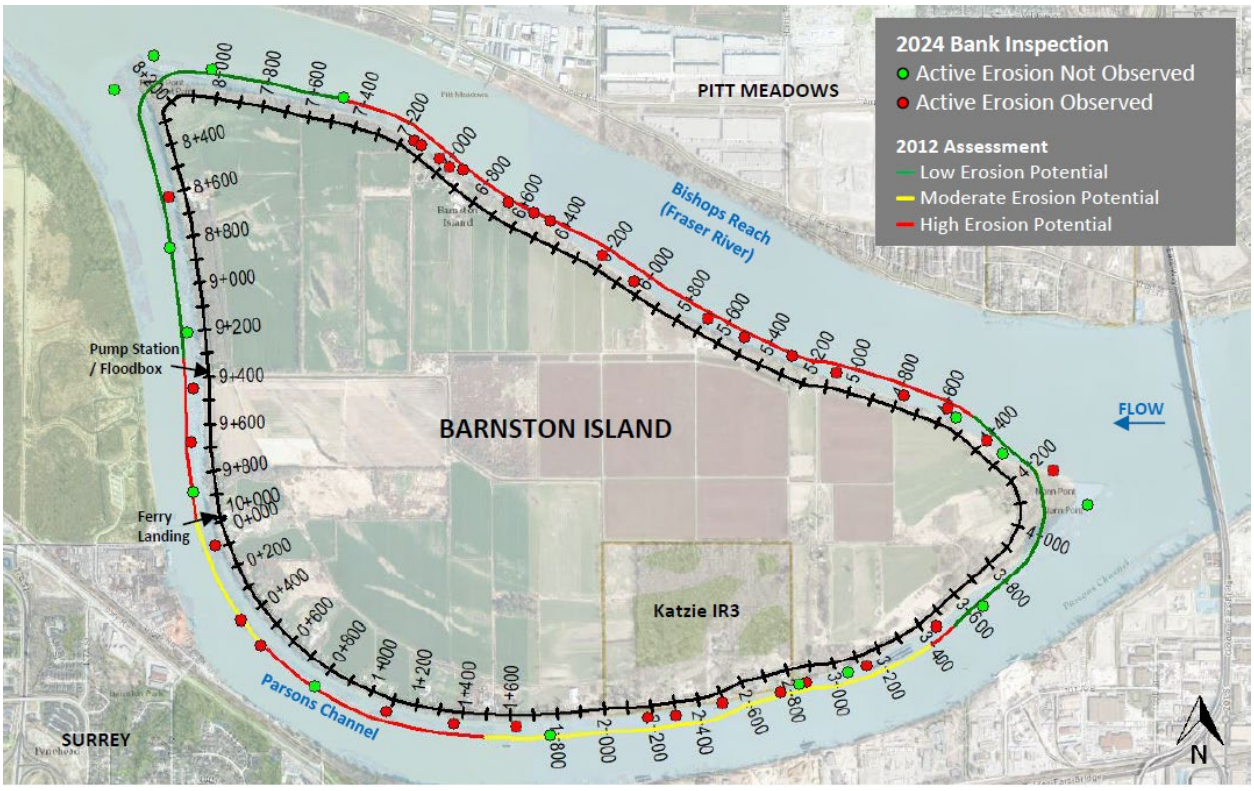
2.4 Project Management and Adequacy of Resources

Please see Section 6 (Project Management and Adequacy of Resources) for a description of NHC's approach to project management and allocation of staff and resources for this project.

3 BANK EROSION STUDY AND EROSION MONITORING NETWORK

3.1 Project Understanding

Undermining scour or progressing bank erosion of the Barnston Island ring dike could threaten its integrity and cause it to fail without it overtopping overtopped. Previous work by NHC, including an assessment in 2012 and an update in 2024, identified locations of concern for erosion hazard, mainly based on observed active bank erosion and proximity of the current dike alignment to an eroding bank. The figure below from this previous work illustrates locations where active erosion has been identified (red dots) and areas of high erosion potential (red lines).



Locations of active erosion, from the NHC 2024 Update.

The previous preliminary assessments did not provide sufficient scope for a thorough investigation of the potential for largescale bank retreat in response to channel migration,

widening, or scour. We recommended a more detailed erosion assessment, including survey, to analyze the potential for undermining to occur along the toe of the bank.

NHC's previous assessments include details on trees collapsing into the river and acting as mechanisms that promote bank retreat, their roots damaging the bank when each tree is pulled up, and local scour appearing around the exposed root balls. Leaning trees could be pre-emptively removed; an arborist assessment will be required to identify the hazard trees suitable for removal.

Typical leaning trees with exposed root structures causing local scour along the north side of Barnston Island, from NHC's 2024 Update.

Lastly, NHC recommends ongoing monitoring of progressive bank erosion to track hazards to the dike. Implementing an erosion monitoring plan will enable consistent documentation of conditions and identification and warning of bank retreat.

3.2 Project Methodology

This section of our proposal presents our proposed methods for the site inspection, scour and erosion assessment, erosion monitoring, and arborist assessment.

3.2.1 Subconsultants engaged

NHC will complete all components of the erosion assessment, with the exception of the arborist assessment, which Roe will undertake.

3.2.2 Scour and Erosion Assessment

The scour and erosion assessment includes a site inspection, bathymetric survey of the highest risk areas, and a desktop analysis, with the goal of improving understanding to present conditions to reduce the risk of dike failure from scour and erosion. The assessment will focus on the north side of Barnston Island, where future dike raising has been recommended; however, findings relating to the full shoreline may be documented as relevant.

Site Inspection

NHC will perform a site inspection to gain an understanding of current site conditions. We have budgeted a full day for a project Geomorphologist and Field Technician, which includes the inspection, as well as travel to and from the site. NHC will arrange the inspection, which will be completed by boat, ideally during low water, day-time conditions (typical of spring and summer), prior to excessive spring emergence of vegetation.

NHC previously inspected the site during the 2024 dike assessment. This inspection will focus on identifying changes and trends, particularly where they are indicative of present or future threats to the dike. The site inspection will primarily be focussed on erosion, with analysis of bathymetric survey used to assess scour.

Survey

Understanding of past and present bed conditions is imperative to identify where the channel is degrading, migrating, or scouring towards the banks and potentially undermining the dikes. To limit cost, a complete survey of the entire Bishop Reach and Parson Channel (left and right banks) is not included in the proposed scope. Instead we propose to include three on-water days of survey to collect bathymetry along the the highest risk areas; that is the north side of the island along Bishop Reach and the southwester edge of the island in Parson Channel.

The survey is to be conducted using a boat mounted multi-beam sounder positioned with an on-board survey grade RTK GPS. NHC routinely collects similar multi-beam surveys for a number of bridge and tunnel projects on the Fraser River. Using the same crew and equipment as we routinely use enables us to provide efficient data collection, efficient data processing, and high-quality results. The presence of log booms and shallow areas will limit the extent of data collected. NHC will target high water day-time levels (typical of winter conditions) as much as possible within project timelines to limit the influence of these constraints. Furthermore, dikes fronted by shallow areas are likely of less risk from scour, and hence of less need for bathymetric survey.

Scour and Erosion Assessment

NHC will undertake an initial scour and erosion assessment with respect to threat to the dike. Approaches for mitigating erosion and scour will be presented where required. This assessment will include reviewing and summarizing the previous relevant scour and erosion studies, comparing present and available historical bathymetric data, and making preliminary recommendations. Findings will be presented in a technical report.

If based on our initial assessment, additional work is required, then it will be discussed with Metro Vancouver.

Erosion Monitoring Network

NHC will identify key locations along Barnston Island to establish a monitoring program. This program may include the installation of offset benchmarks to allow for routing measurement of bank distances. Period measurements can then be used to track bank retreat. Our team will work with Metro Vancouver, BIDD, and other project partners on the install and program initiation. We have allocated one day for one professional and one technician to install such equipment.

The erosion assessment document will include instructions for erosion monitoring, including operational procedures and a recommended monitoring interval. Future monitoring is expected to be undertaken by the local organizations, not the NHC team.

3.2.3 Arborist Assessment

The arborist assessment will consist of an inventory and risk assessment of trees located at the top of the bank of the Fraser River around the perimeter of Barnston Island. The risk assessment will use a combination of approaches from the Tree Risk Assessment Qualification (TRAQ) and the provincial Wildlife Danger Tree Assessor course (WLDTAC). The assessment of all trees on the bank is expected to take an arborist team (including an arborist and an arborist technologist) three 8-hour days to complete the assessment by foot, supplemented by one 8-hour day of assessment by boat from the Fraser River. Both the onshore assessment and the water-based assessment are expected to provide the most accurate assessment of trees, achieve a suitable angle of trees, and identify and assess potentially exposed roots. Tasks will include:

- tree inventory and risk assessment by an ISA-certified Arborist, accompanied by an arborist technologist, using TRAQ or BC WLDTAC standards
- preparation of arborist report to identify risk ratings of inventoried trees and endorsed by an ISA-certified Arborist
- communication, coordination, background review, and reasonable revisions to the arborist report

3.3 Schedule

Assuming contract award in February 2025, the site inspection and arborist assessment will take place during winter 2025, while no leaves are present on trees. Bank visibility is required; if contract award is delayed, these fieldwork components may need to be pushed to late fall 2025 or winter 2026. The erosion assessment and monitoring network development will follow. We propose the following schedule:

- Assumed award February 2025
- Background review March 2025
- Site inspection April 2025
- Arborist assessment April 2025
- Erosion assessment May 2025
- Erosion monitoring plan May 2025
- Draft report July 2025
- Final report August 2025

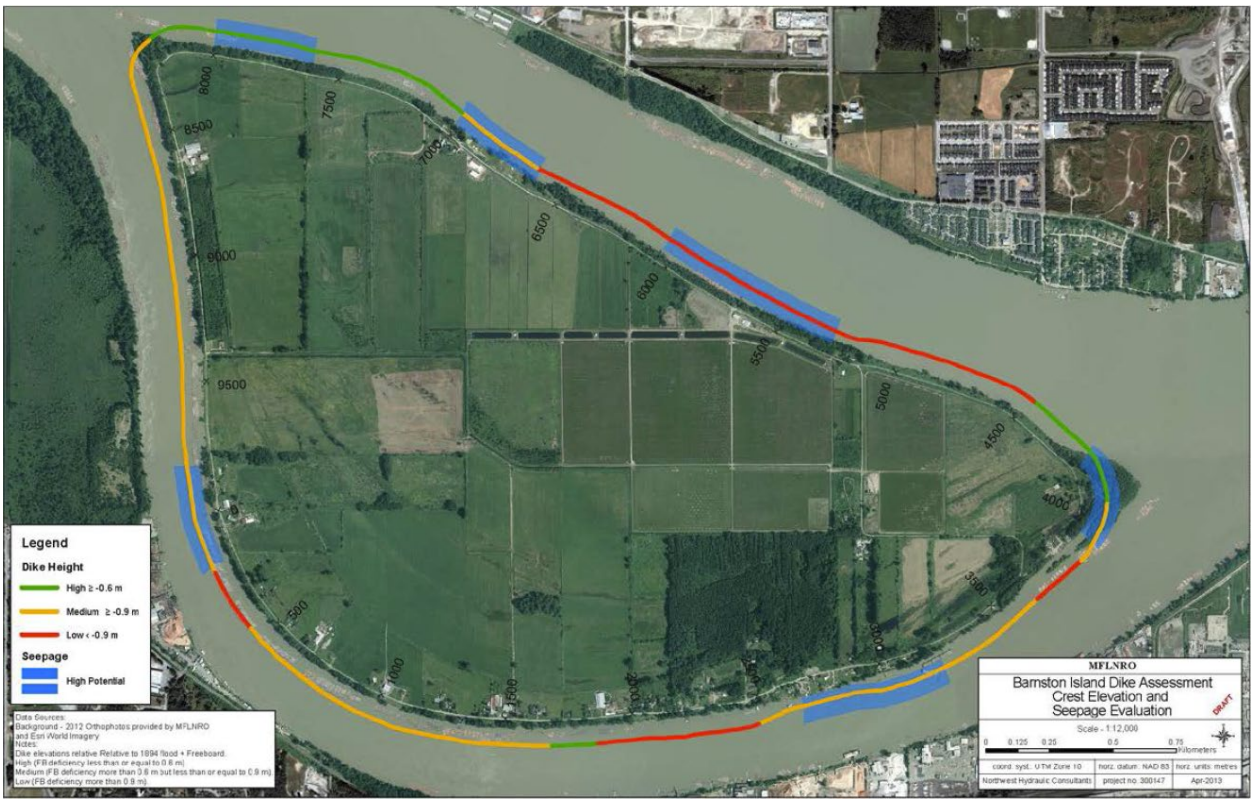
3.4 Project Management and Adequacy of Resources

Please see Section 6 (Project Management and Adequacy of Resources) for a description of NHC's approach to project management and allocation of staff and resources for this project.

4 DIKE SEEPAGE ASSESSMENT

4.1 Project Understanding

NHC's proposed seepage assessment is planned to cover approximately 3 km of dike based on our present understanding of the project. However, any new information from Metro Vancouver or other project partners on areas of high observed seepage is appreciated. The areas expected to be of concern are shown on the figure below, taken from NHC's 2012 dike assessment.



Areas with high seepage potential from NHC's 2012 dike assessment.

Thurber completed a previous geotechnical assessment of Barnston Island dikes in 2013, which included previous test hole information and seepage assessments. Based on this and our previous experience at the site, we expect the following soil conditions along the island's dikes:

- **South Barnston Island dike:** dike soils to typically consist of sand and silty sand to sandy silt fill over a sequence of native silt and sand to depth
- **North Barnston Island dike:** granular dike fill over natural silt with varying amounts of clay and organics

4.2 Project Methodology

The proposed methodology includes a geotechnical analysis to estimate seepage rates through the existing dike. A field geotechnical investigation is required, and hence proposed, to support the analysis.

4.2.1 Subconsultants engaged

As prime consultant, NHC will liaise with Metro Vancouver to coordinate the scope of work. Thurber will complete all geotechnical tasks.

4.2.2 Seepage analysis

Geotechnical Investigation

Our investigation will follow *General Guidelines - Exploratory Geotechnical Testing Within a Dike or Dike Right of Way* (Ministry of Forests, Lands and Natural Resource Operations). We propose investigating the subsurface conditions by drilling test holes as follows:

- 14 solid-stem auger test holes to a maximum depth of approximately 8 m. The test holes will be spaced at approximately 250 m intervals. The geotechnical investigation for Task 4 is considered appropriate for preliminary design but would need to be supplemented with additional test holes when the project proceeds to detailed design.
- Per the RFP requirements, we will complete a site visit during the high freshet period to review ground conditions for signs of high seepage. We assume that we will be granted permission to access private property on the landside of the dike during this investigation.

An experienced geotechnical specialist will log the soil and groundwater conditions in the field and retain disturbed samples for testing in our laboratory. In addition, all soil samples will be subjected to routine lab moisture content and visual classification testing. We will also carry out Atterberg limit testing and sieve analyses on selected representative samples.

NHC will inform the Ministry of our investigation plan and obtain approval under the *Dike Maintenance Act*. We will seal and grout the test holes in general accordance with BC groundwater protection regulations and Ministry requirements. We will record the test hole locations using a handheld GPS.

Prior to advancing the test holes, we will submit a BC 1 Call ticket to notify all utility owners of our intention to disturb the ground during the investigation. We will also contact utility owners that are not a part of the BC 1 Call system. Thurber will engage a utility locate subcontractor to clear the test hole locations of underground services. Please note that the utility locate subcontractor can locate conductive conduits only; non-metallic pipes, such as PVC water and gas lines, cannot be reliably detected. The NHC team (including Thurber) will not be responsible for damage to any utilities that are not shown or incorrectly located on the provided drawings, or not located by the utility locate contractor.

Thurber will retain a traffic control subcontractor during the utility locating and drilling and will follow the traffic management plan submitted as part of the permitting process.

The drill rig will leave some marks on the asphalt and disturb the local grass cover and surface soils, particularly if the ground is wet. We will attempt to clean up the site as much as reasonably possible, but some surface disturbance and settlement should be expected where the drill travels to access test holes and at the test hole locations. Repairs will include reinstating the test hole to surface grade and topping holes in the road surface with cold-mix asphalt. Additional repairs, if requested, can be completed at additional cost.

Geotechnical Analysis and Reporting

Based on the review of existing information, the results of our geotechnical investigation, and laboratory testing, we will conduct the geotechnical analyses. We assume that we will be provided with survey data showing relevant dike geometry and adjacent land topography.

Our report will include the results of the site investigation, as well as discussion and recommendations on the following:

- estimated soil hydraulic conductivities based on the site investigation and laboratory testing
- preliminary comparison of seepage rates through the existing dike and seepage rates through the dike with a seepage barrier
- potential landside heave and internal erosion design concerns for the dike under flood conditions; a preliminary piping risk assessment for the dike configuration in the two-dimensional finite element analysis software, D-Geo Flow.
- preliminary design recommendations for the seepage barrier.

4.3 Schedule

The geotechnical report should be available approximately 8 to 10 weeks after completion of drilling if all other design inputs are provided by the project team.

4.4 Project Management and Adequacy of Resources

Please see Section 6 (Project Management and Adequacy of Resources) for a description of NHC's approach to project management and allocation of staff and resources for this project.

5 OPERATION AND MAINTENANCE MANUAL FOR THE DIKE AND PUMPSTATION

5.1 Project Understanding

There is currently no operations and maintenance (O&M) manual for Barnston Island's flood protection infrastructure. This type of manual typically includes consolidated information on infrastructure history, construction, maintenance and inspection records, operating procedures, and other relevant information. Details from the O&M manual will provide Metro Vancouver and BIDD with pertinent information for managing existing infrastructure and with easily located records that can provide a basis for future improvements.

5.2 Project Methodology

NHC will develop a dike O&M manual, following the provincial template. Proposed methodology is described in the sections that follow.

5.2.1 Subconsultants engaged

NHC will be responsible for compiling the O&M manual, and will seek out input as required from subconsultants involved in the pump station and flood box design (Task 1). Much of the time allocated for documenting O&M requirements with respect to the pump station and flood box have been allocated under that task (Task 1). Under the present task there is an allocation for Thurber to provide geotechnical input.

5.2.2 O&M Manual development

At initiation of Task 5, NHC will attend a virtual start-up meeting with Metro Vancouver and others to discuss objectives and available information. In-person meetings are not expected to be required under this task's scope. NHC will prepare the O&M manual, following the provincial template. The manual is expected to include the following information:

- description of works
- Bishop Reach and Parson Channel geomorphic form and process (i.e., stream behavior and historical records)
- description of flood hazards
- rights-of-way
- administrative stakeholders

- relevant legislation
- inspection requirements, procedures, and available records
- maintenance requirements, procedures, and available records
- emergency response plan

Any available pertinent information, such as records of present infrastructure, past inspections and maintenance reports, historic surveys and drawings, etc. in encouraged to be provided by Metro Vancouver and BIDD. Our scope does not include development of components that are not already available except for those for the pump station and flood box. NHC will undertake a gap analysis to identify missing components for discussion with Metro Vancouver and BIDD. We are available to support development of missing O&M components as additional work.

5.3 Schedule

NHC anticipates that O&M compilation will be initiated following contract award and is expected to take approximately 16 weeks to complete, depending on information availability. A final update will be issued following completion of the pump station and flood box.

5.4 Project Management and Adequacy of Resources

Please see Section 6 (Project Management and Adequacy of Resources) for a description of NHC's approach to project management and allocation of staff and resources for this project.

6 PROJECT MANAGEMENT AND ADEQUACY OF RESOURCES

6.1 Project Management

On any project, NHC's highest priority is to meet our client's needs while delivering high-quality, technically innovative, and purpose-built solutions. Our project management philosophy centres around clear communication of activities and expectations, regular discussions amongst the client and project team, and thorough reviews and quality assurance and quality control (QA/QC) checks of all work products.

NHC considers providing quality service, adhering to agreed schedules, and controlling costs as integral aspects of our successful performance. We have learned through experience that effective budget, schedule, and quality control on a project begin as soon as the project starts. Well-executed projects do not happen by chance. They are the result of participants developing clear expectations at a project's outset, proactively identifying issues and implementing timely solutions, and openly communicating with one another throughout a project's full life cycle. Our proposed project and technical management approach is intended to facilitate success and efficiency. All members of our proposed project team share a proven track record of performing at or above deliverable expectations, of producing effective, innovative results within agreed budgets and schedules.

Management Approach

Backed by more than 50 years of consulting experience in the water resources sector, NHC's approach to project management and quality assurance/quality control (QA/QC) is to listen to and act on feedback from both our clients and our staff throughout the project delivery process.

Following are some key features that ensure successful projects with NHC:

- **A single point of contact** between our client and project team – NHC's project manager for your project is an individual who has been carefully chosen for their technical and project management capabilities and experience.
- **A detailed workplan** – At the start of each project, NHC's team will develop a detailed work plan and clear descriptions of responsibilities and deliverables.
- **Weekly in-house cost summaries** and staff hourly reporting for our entire project team so you can stay on track of your project's ongoing budget and schedule.

- **Regular meetings** and conference calls between NHC's project team and our client's project management team to inform everyone regularly of work progress and any resolve technical concerns as they arise.
- **Clear and concise monthly invoicing** includes progress reports from NHC that describe completed work items, expected work for the upcoming month, and the status of the project budget and schedule.
- **Quality assurance and quality control** of all work products by our principal-in-charge before we release them for review.

6.2 Adequacy of Resources

We continually track our existing workloads and future commitments to ensure we have sufficient capacity to provide the required services to Metro Vancouver for this project. In addition, we have confirmed that the key personnel listed in this proposal all have the required availability to execute this project following contract award.

Our workload tracking is further supported by planning software that captures and projects our short-term and long-term project and resourcing needs company wide. Weekly staff and team meetings provide additional opportunities to review existing workloads and workload forecasts. These weekly staff and team meetings are further supported by our company's owners through ongoing workload conflicts meetings set up to resolve conflicts, give our staff and projects the support they need, and enable immediate adjustments to resources as changing conditions require.

NHC employs many qualified professionals who can provide additional backup support to this project as needed, which ensures work will be completed on schedule, or some work of a project team member may be assigned to another project to provide additional capacity within the Metro Vancouver team. Additionally, NHC works collaboratively with other North American and international offices in our network, and we can supplement project resources in the short term whenever required.

Our Mission

We provide innovative science and engineering solutions to water-related challenges.

Our Vision

We will remain at the forefront of water resources engineering and science by strengthening operations and strategically expanding our services.

Our Values

Passion We love working with water.

Excellence We are dedicated to technical excellence.

Client Focus We partner with our clients to develop practical solutions to fit their needs.

Sustainability We support social and environmental sustainability.

Employee Focus We foster the professional development and well-being of our employees.

Respect We value workplace diversity and treat people with respect.

Minimal Hierarchy We are collaborative and non-bureaucratic.

Integrity We maintain ethical business practices and provide unbiased recommendations.

Autonomy We will remain an independent, employee-owned firm.

Financial Responsibility We are financially accountable to our clients and each other.

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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Electoral Area and Small Communities Committee

From: Marcin Pachcinski, Division Manager, Electoral Area and Implementation Services
Regional Planning and Housing Services

Date: April 15, 2025 Meeting Date: May 15, 2025

Subject: **Electoral Area A Community Works Fund – University Neighbourhoods Association (UNA) Dog Park Project**

RECOMMENDATION

That the MVRD Board approve funding from the Electoral Area A Community Works Fund as described in the report dated April 15, 2025, titled "Electoral Area A Community Works Fund – University Neighbourhoods Association (UNA) Dog Park Project" up to $200,000.

EXECUTIVE SUMMARY

The Community Works Fund is delivered to all local governments in British Columbia through a direct annual allocation to support local eligible priorities, and is distributed within Electoral Area A based on community population. Including 2025's annual allocation, the Electoral Area A Community Works Fund Reserve stands at approximately $1.1 million, with 81% of that apportioned based on population to UBC, which includes the University Neighbourhoods Association (UNA).

The UNA oversees residential neighbourhoods around UBC's campus and provides municipal-like services (including parks) to its residents. In late 2024, the UNA conducted a public engagement process for a new dog park that sought feedback on its design and features. The proposed dog park received strong support from residents, and in March 2025, the UNA Board endorsed the project moving forward to Metro Vancouver for consideration of funding in the amount of $200,000.

If the MVRD Board approves the recommendation, Metro Vancouver will enter into an agreement with UBC (on behalf of the UNA) to reimburse them for eligible costs up to $200,000 upon submission of required documentation.

PURPOSE

To provide the Electoral Area and Small Communities Committee and the MVRD Board with the opportunity to consider funding a project in the UNA through the Electoral Area A Community Works Fund.

BACKGROUND

At its April 29, 2016 meeting, the MVRD Board (then GVRD Board) passed the following resolution:

> *That the GVRD Board endorse the distribution of monies from the Community Works Fund to areas within Electoral Area A based on population, as described in the report titled "Distribution of Electoral Area A Community Works Fund Monies", dated March 29, 2016.*

In March 2025, the UNA Board, with support from UBC, endorsed seeking funding for a dog park project, which is now presented in this report for the Committee and MVRD Board's consideration.

COMMUNITY WORKS FUND

The Community Works Fund is one of the funding streams of the renewed 2024-2034 Canada Community-Building Fund. The Community Works Fund allocates funding to all local governments in BC based on a per capita formula that includes a funding floor. Local governments may direct the funding towards eligible costs of eligible projects as set out in the Community Works Fund agreement (see Reference 1 for eligible project information and Reference 2 for grant amounts allocated to each local government). The UNA dog park project is eligible for funding under the recreation infrastructure category.

Consultation

In recognition of the governance and advisory bodies that exist in the Point Grey area of Electoral Area A, including the University Neighbourhoods Association (UNA), the University Endowment Lands (UEL) Administration and Community Advisory Council (CAC), and the University of British Columbia (UBC), the Electoral Area A Director and Metro Vancouver staff are in regular contact with these entities to provide them with information on the Electoral Area Community Works Fund (e.g. as eligibility, funding amounts, and the decision making process and principles). Each organization typically conducts their own public consultation process for potential projects, which the Electoral Area A Director accompanies to gauge resident participation and support. When the UBC/UNA and UEL/CAC have completed their public consultation processes, they provide a project description and cost summary to Metro Vancouver staff who prepare a report for Committee and Board consideration.

For rural communities, the small annual apportioned amounts mean that projects are infrequent and staff look for potential projects to which the funds may apply, as was done for Barnston Island in 2021 (see table below).

For the dog park project, as noted in the Attachment, the UNA conducted a six-week long public engagement process in November and December 2024 that saw 277 survey responses and 113 community conversations. Over 70% of the survey responses supported the addition of a dog park at the proposed site.

Previously Funded Projects

The table below shows projects that the MVRD Board has previously funded through the Electoral Area A Community Works Fund.

Year	Community	Amount	Project
2024	UEL	$157,000	Chancellor Blvd. sidewalk project
2022	UBC/UNA	$100,000	Acadia neighbourhood active transportation improvements
2022	UBC/UNA	$139,276	Solid waste (recycling) receptacle replacement
2022	UBC/UNA	$195,824	Electric vehicle charging stations
2021	Barnston Island	$12,100	Dike pump house electrical upgrades
2019	UEL	$138,575	Green infrastructure to mitigate storm water impacts from climate change
2019	UBC/UNA	$424,925	Pedestrian and cycling improvements to the Wesbrook Mall and University Boulevard intersection

UNA DOG PARK PROJECT DESCRIPTION (Attachment)

The UNA dog park is proposed to be located in the UNA's Wesbrook Community in an area that has been earmarked for a future elementary school. The dog park design incorporates, and is expected to be compatible with, the future school site.

The dog park design features include separate large and small dog areas, pedestrian pathways, fencing, play terrain, enhanced open passive recreation lawn, and amenities such as shading structures, seating, and drinking fountains. Additional details are provided in the attachment.

The total cost for the UNA dog park project (including contingency) is expected to be $224,208. The UNA is requesting $200,000 from the Electoral Area A Community Works Fund to pay for the project, with the UNA covering the contingency expenses.

ALTERNATIVES

1. That the MVRD Board approve funding from the Electoral Area A Community Works Fund as described in the report dated April 15, 2025, titled "Electoral Area A Community Works Fund – University Neighbourhoods Association (UNA) Dog Park Project" up to $200,000.
2. That the Electoral Area and Small Communities Committee receive the report dated April 15, 2025, titled "Electoral Area A Community Works Fund – University Endowment Lands Project" for information.

FINANCIAL IMPLICATIONS

Funding of this project has no property tax implications for Electoral Area A, as it would be funded in whole by the Community Works Fund grant. Including 2025's annual allocation, the Electoral Area A Community Works Fund Reserve stands at approximately $1.1 million. Metro Vancouver can expect to receive approximately $160,000 annually between 2024-2029 from the Community Works Fund. The annual amounts received are kept in a separate Electoral Area A Community Works Fund Reserve and can accumulate until the MVRD Board approves funding of specific projects.

If the MVRD Board supports the recommended alternative, project costs incurred by the UNA will be reimbursed to the UNA after entering into an agreement with Metro Vancouver and submitting required financial information.

If the MVRD Board supports the recommended alternative, the remaining amounts apportioned by population to each community would be:

	Electoral Area A Population (%) 2021 Census	Community Works Fund Balance Remaining
UBC/UNA	15,103 (81.1%)	$800,000
UEL	3,193 (17.2%)	$111,000
RURAL*	316 (1.7%)	$26,000
TOTAL	18,612 (100%)	$937,000

*Given the small $ amounts, all communities outside of UBC/UNA and UEL have been grouped into Rural for this table.

CONCLUSION

The Electoral Area A Community Works Fund is used to fund eligible local priority projects. The UNA undertook a public consultation process that indicates resident support for the proposed dog park, and therefore the UNA Board is requesting $200,000 for this eligible project. Metro Vancouver staff will continue to work with UBC/UNA, UEL, and rural communities to bring forward projects for consideration of funding by the MVRD Board. Staff recommend Alternative 1.

ATTACHMENT

1. University Neighbourhoods Association Dog Park Project Description.

REFERENCES

1. Union of BC Municipalities (UBCM). (2021, August). *Community Works Fund – Examples of Eligible Projects.* Retrieved from https://www.ubcm.ca/sites/default/files/2021-08/Examples%20of%20Eligible%20Projects_August%202021_0.pdf. Last accessed 2025, April 15.
2. Union of BC Municipalities (UBCM). (2024, April). *Community Works Fund – Allocations by Local Government.* Retrieved from https://www.ubcm.ca/sites/default/files/2024-04/CWF_Allocations_5%20year_web%20publish_final.pdf. Last accessed 2025, April 15.

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UNIVERSITY NEIGHBOURHOODS ASSOCIATION

Report Date:	April 9, 2025
From:	Wegland Sit, Operations Manager
To:	Marcin Pachcinski, Division Manager, Metro Vancouver Area A
Subject:	UNA Dog Park Project – Community Works Funds

Dear Marcin,

The UNA Dog Park Project was approved/endorsed by the UNA Board for advancement to Metro Vancouver.

The project descriptions for the Dog Park Project are as follows:

UNA Dog Park Design Overview

Site Location:

This area has been earmarked as the site for a future elementary school. The planning team developed an approximation of the future school site based on the City of Vancouver's recently constructed schools at Lord Tennyson and Maple Grove.

The dog park design incorporates the estimated future school site to best support longer-term viability at this location. The dog park's footprint is expected to be compatible with the planned school site.

UNA Dog Park Design Features:

- **Separate Large and Small Dog Areas:** The design features separate fenced areas for small and large dogs.
- **Pedestrian Pathways:** The design features looped pedestrian pathways within each of the fenced dog spaces. The project will further enhance external pathways, improving accessibility and connecting Webber Lane and Ross Drive to the core community space.
- **Fencing:** Both the small and large dog areas will be fenced with a controlled shared entry point.
- **Play Terrain:** The terrain within the dog spaces may feature the existing berm and ground cover, along with other design elements.
- **Enhanced Open Passive Recreation Lawn:** The design leaves plenty of open green space to enhance the passive recreation functions of the space.
- **Amenities**: Shading structures, seating elements and drinking fountains in both large and small dog area.

UNIVERSITY NEIGHBOURHOODS ASSOCIATION

Public Engagement Summary

The goal of this engagement was to provide community with information about the construction of a new dog park in Wesbrook Place and to seek feedback on the **design** and **features** of the park.

A six-week public engagement period occurred during November and December 2024. The UNA dog park planning team received 277 survey responses and 113 community conversations. The proposed dog park received strong support from the community members with **over 70%** (60% strongly agreed and 10% agreed) of the survey responses supported the additional of a dog park in the proposed site.

Financial Implications

Project Budget Estimates

The project budget is approximately $230,000. A detailed project cost breakdown is attached below.

Dog Park Project Cost Estimation		
Item	**Descriptions**	**Cost**
Demolition and Site Preparation	Mobilization, general earthworks to prepare and shape the site	$ 30,000
Hard Landscape Elements	Setup perimeter fence, circular and connection pathways	$ 72,240
Soft Landscapes Element	Setup shrubs and trees around the dog park. Repair the new enhance lawn area	$ 39,600
Other Site Furnishing and Other Landscape Elements	Setup shading structures, drinking fountains and other amenities	$ 45,000
Sub-Total Dog Park Build		$186,840
Construction Cost Contingency - 20%		$ 37,368
Total Dog Park Build		**$224,208**

Table 1 – Cost breakdown for UNA Dog Park Project

Community Works Fund - Funding Request

The total cost for the UNA Dog Park project (including contingency) is expected to be at $224,208 plus applicable taxes.

This total cost of the UNA Dog Park project will be covered by the Community Works Fund (CWF) and the UNA budget. Currently, the UNA has approximately $200,000 remains unallocated in the CWF, with the UNA covering the remaining $30,000 for contingency expenses.

Therefore, the CWF funding request for the UNA Dog Park will be at $200,000 to support the UNA Dog Park Project construction.

UNIVERSITY NEIGHBOURHOODS ASSOCIATION

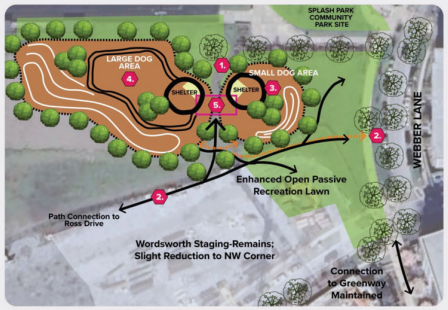
Attachments

1. Revised UNA Dog Park Design
2. UNA Proposed Dog Park Public Engagement "What We Heard Report" Online Report

As Presented to the Community-Fall 2024 Engagement Process

Preliminary dog park design

The preliminary dog park design considered current terrain, existing land use, proximity to complementary community amenities, and future land use. The design features separate large and small dog areas, pedestrian pathways, fencing, play terrain, and an enhanced open passive recreation lawn.



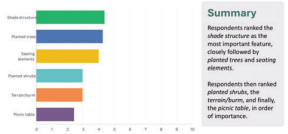
Direct Excerpts from UNA Report

(UNA Proposed Dog Park in Wesbrook Place | "What We Heard Report")

Original Budgeting Summer Fall 2024 $±276K "all in"

Quantitative Survey Results

Respondents were asked to rank the below-mentioned dog park features by importance.



Summary

Respondents ranked the *shade structure* as the most important feature, closely followed by *planted trees* and seating elements.

Respondents then ranked *planted shrubs*, the *terrain/burm*, and finally, the *picnic table*, in order of importance.

UPDATED DESIGN FOR BOARD APPROVAL w/some site context

Legend:

1. Primary Connection/Arrival from South Side
2. Large Dog Area-±1750 m2 (±± 1/4 of a soccer field)
3. Small Dog Area-6-700 m2 (±± double tennis court)
4. East-West "Primary Path" Connections

Existing Street/Park Tree

Potential New Trees

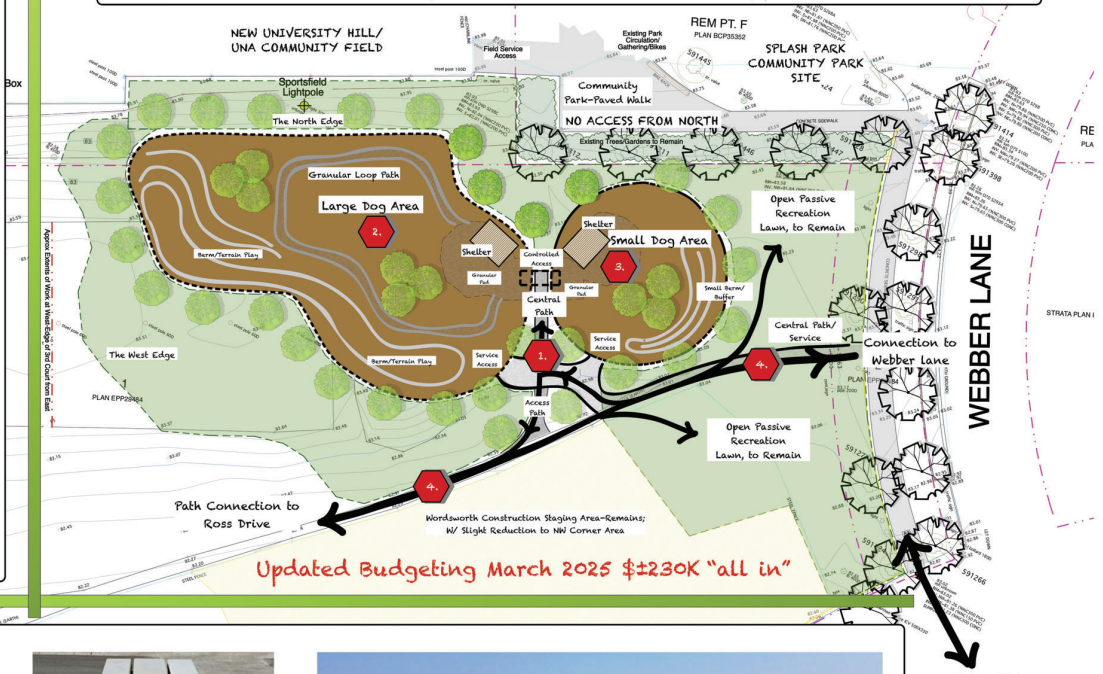
Fenced Perimeter of Dog Areas ±275 lin. m (Dog Areas Shaded Brown for Graphic Clarity)

Shelter — Proposed Pedestrian Shelters(2)

Primary Pedestrian Circulation and/or Linkages

East/North Edge-Maintain the "Community Green" and North Edge Space(s). Add Regrade/Reseed to Return "West Edge" from Sand to Meadow-±1500m2

Granular Paths+Access Pads



Design Elements/Features

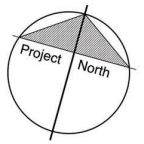








Issued for UNA MARCH 18/25 BOARD MEETING



RICHARD FINDLAY LANDSCAPE ARCHITECT INC

L-9 | **UNA Wesbrook Community Dog Park Exploration and Planning** (School Site South of Park and Splashpad) | **Upadated Design After Community Engagement** | September, 2024 | UNA University Neighbourhoods Association | Scale=1:200 Metric

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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Electoral Area and Small Communities Committee

From: Marcin Pachcinski, Division Manager, Electoral Area and Implementation Services
Regional Planning and Housing Services

Date: April 28, 2025 Meeting Date: May 15, 2025

Subject: **Reforming the Local Government Act Survey – Electoral Area A Comments**

RECOMMENDATION

That the MVRD Board, as Local Government for Electoral Area A, direct staff to respond to the Reforming the Local Government Act: Roadmap Survey with the responses in the General Comments and Comments on Draft Recommendations section of the report dated April 28, 2025, titled "Reforming the Local Government Act Survey – Electoral Area A Comments".

EXECUTIVE SUMMARY

The Province and UBCM are currently gauging interest from regional districts and local government area associations to move forward with legislative reforms focused on regional districts. As an initial step, local government area associations, including the Lower Mainland Local Government Association, engaged a legal firm (Lidstone & Company) to prepare a discussion paper titled "Regional District Legislation Roadmap" and recently distributed a survey requesting feedback on the paper and its draft recommendations.

Metro Vancouver staff have reviewed the discussion paper and survey, and recommend that the Board direct staff to submit comments provided in this report as they relate to Electoral Area A. For clarity, the recommendation is specific to Electoral Area A and does not mean Metro Vancouver is submitting these comments on behalf of other member jurisdictions.

PURPOSE

The purpose of this report is to seek direction from the Electoral Area and Small Communities Committee and the MVRD Board to submit survey comments related to future potential legislation changes that would apply to Metro Vancouver's role as the local government for Electoral Area A.

BACKGROUND

The *Community Charter* and *Local Government Act* are the main pieces of legislation under which local governments function in BC. The adoption of the *Community Charter* in 2004 reformed how municipalities function, and since that time, there has been an awareness of the need to also reform the *Local Government Act* to update regional district powers and legislative requirements. Metro Vancouver, through the MVRD, is the local government for Electoral Area A, and this role derives most of its powers and responsibilities from the *Local Government Act*.

The Regional District Legislation Roadmap discussion paper (Reference 1) was released in late February 2025, along with a request to provide feedback via a survey (Reference 2) by May 31, 2025. This report presents survey response comments staff have prepared for Board consideration, which would be submitted by the deadline if the recommendation is supported.

DISCUSSION PAPER SURVEY COMMENTS RELATED TO ELECTORAL AREA A

Staff have reviewed the discussion paper and survey and have prepared general comments and other comments in support of specific draft recommendations, as presented below (see Reference 1 for more information). This report and the comments below are specific to Electoral Area A; Metro Vancouver may provide further comments to the survey that are not-specific to Electoral Area A separately.

General Comments

Regarding the discussion paper's introduction, principles, and executive summary, Metro Vancouver staff recommend submitting the following comments (bolded bullet points) in relation to Metro Vancouver's role as the local government for Electoral Area A:

- **Metro Vancouver supports the modernization of the Local Government Act, which would enable greater nimbleness in how services are provided to Electoral Area A.**

- **Metro Vancouver requests that the review of current legislation as it applies to regional districts also consider how changes may apply to UBC and the University Endowment Lands (UEL), which are part of Electoral Area A but which have their own legislation.**

- **Metro Vancouver would benefit from the ability to consider regulating tree removal and additional regulatory powers to address climate change, wildfires, and flooding in Electoral Area A.**

- **Metro Vancouver supports making the introduction of a new local area service process more efficient (e.g. removing need for approval from the provincial inspector).**

Comments on Draft Recommendations

Regarding the discussion paper's draft recommendations referenced by their number below, Metro Vancouver staff recommend submitting the following comments (bolded bullet points) in relation to Metro Vancouver's role as the local government for Electoral Area A:

2. *The legislation should place municipalities and regional districts on the same level plane in relation to status and recognition, since the current statute recognizes municipalities as an order of government within their jurisdiction in accordance with principles based on the municipal charter of rights adopted by the Union of British Columbia Municipalities, yet it recognizes regional districts with a lesser status. One option is to apply the wording of section 1 CC [Community Charter] in regional district legislation. Another option is to include regional districts in Section 1 CC.* (Reference 1, pdf page 14)

- **Metro Vancouver supports placing municipalities and regional districts on the same level plane in relation to status and recognition.**

6. *Regional districts should have "natural person powers" (legal capacity, rights, powers, and privileges of a natural person of full* capacity). (Reference 1, pdf page 16)

- **Metro Vancouver supports regional districts being given "natural person powers".**

7. *Regional boards should have the broad, overarching regulatory authority of a municipality under section 8 CC in the rural areas to regulate, prohibit, or impose requirements in relation to regulatory matters, subject to provisions analogous to sections 9 and 10 and Part 3 CC.* (Reference 1, pdf page 16)

8. *Without limiting the recommendation in paragraph 7, regional districts should have the authority such as that under section 8 of the Community Charter to impose requirements in relation to their areas of regulatory authority, except in relation to firearms and business.* (Reference 1, pdf page 16)

9. *Regional boards in a regulatory bylaw should be able to provide for a system of licenses, permits, or approvals and take advantage of the list of regulatory standards and controls countenanced under section 15 CC, without being limited to a service.* (Reference 1, pdf page 16)

10. *The regional district authority to enter on property should be modernized to be the same as for municipalities in section 16 CC.* (Reference 1, pdf page 16)

- **Metro Vancouver supports expanding the regulatory authorities currently provided to municipalities in the Community Charter to regional district boards.**

11. *In order to be proactive and take leadership in the context of potential catastrophes, the Province and regional districts need to consider options for application of a regional district building regulation bylaw without prior establishment of a building bylaw regulatory service.* (Reference 1, pdf page 17)

12. *To address climate change, adaptation, and resilience, regional districts need the same building regulation authority as municipalities, and not the limited list essentially from the 1979 Municipal Act, to deal with building construction in rural areas where the regional districts have elected to provide for building inspections and regulation.* (Reference 1, pdf page 17)

13. *Regional district legislation should be augmented by a provision like section 10 CC to provide that a municipal bylaw is not inconsistent with another enactment if a person who complies with the bylaw does not by this contravene the other enactment.* (Reference 1, pdf page 17)

- **Metro Vancouver supports revisions to regional districts' building regulation authority to be more proactive and broader, and adding section 10 of the Community Charter (or similar) regarding bylaw consistency.**

14. *The process for establishing rural area services, paying for them, and getting taxpayer buy-in for the services, could be streamlined to be like the municipal local area service regimes, taking advantage of all the experience and case law related to such schemes. This would also eliminate much of the delay and regional district administrative capacity issues about which regional districts have complained.* (Reference 1, pdf page 17)

    - **Metro Vancouver supports streamlining the process for establishing rural area services.**

15. *The interface between the LGA and other provincial statutes needs to be reviewed and clarified for practical purposes – for example, the Environmental Management Act and statutes governing water.* (Reference 1, pdf page 17)

16. *There is virtually unanimous agreement that the cross reference provisions in the LGA (for example, referring to CC provisions) should be spelled out in new regional district legislation in lieu of the internal cross references or the regional district and municipal provisions that are identical should be in one statute.* (Reference 1, pdf page 17)

    - **Metro Vancouver supports reviewing the *Local Government Act* and other provincial statutes for practical purposes and spelling out applicable provisions instead of cross-referencing them.**

25. *Land use and development are not part of our review, but Province could consider legislation to address several specific issues raised consistently by regional districts in addition to approving officer roles:*
    - *Crown corporations should be subject to regional district regulatory bylaws, despite section 14(2) Interpretation Act;*
    - *fringe area development (in rural areas contiguous to municipalities) could benefit from effective mandatory joint planning processes in the context of the land ultimately becoming boundary extension areas for the municipalities. As stated, subdivisions/servicing should not be administered by Highways staff acting as approving officers;*
    - *regional districts attempting to protect aquifers or other natural resources have lost court cases repeatedly over the supremacy of mining permits that go beyond the provincial interest, so regional districts are looking for a degree of balance in the legislation. The removal of gravel, and the operation and remediation of gravel pits, generally escape regional district soil removal and pit remediation bylaws and permits merely due to the legislation and regulations protecting "mining" permits.* (Reference 1, pdf page 19)

    - **Metro Vancouver requests that the review of current legislation as it applies to regional districts also consider potential amendments to section 56 (requirement for geotechnical report) of the *Community Charter* to address instances where there is a provincial lease on Crown Land with no land title and where a local government building regulation bylaw applies. Metro Vancouver's experience has been that the province is unwilling to raise title when a cabin owner wishes to do work that triggers a building permit and where the building inspector considers there is risk of potential natural hazard. In such instances, even when the cabin owner presents an acceptable geotechnical report, Metro Vancouver**

has been unable to issue a permit because the province will not raise title to be able to register the report before the permit is issued (as required by the legislation), leaving the cabin owner in a catch-22 situation between local and provincial governments.

NEXT STEPS

Metro Vancouver staff are following this process as it progresses at UBCM and other local government forums. The discussion paper notes that the paper and options will be considered at the five area association conferences this year, including at the Lower Mainland Local Government Association, and that this may give rise to recommendations to the Province and UBCM at the September 2025 UBCM convention. Metro Vancouver staff will continue to bring back any relevant information and action items to the committee and board for consideration.

ALTERNATIVES

1. That the MVRD Board, as Local Government for Electoral Area A, direct staff to respond to the Reforming the Local Government Act: Roadmap Survey with the responses in the General Comments and Comments on Draft Recommendations section of the report dated April 28, 2025, titled "Reforming the Local Government Act Survey – Electoral Area A Comments".
2. That the Electoral Area and Small Communities Committee receive for information the report dated April 28, 2025, titled "Reforming the Local Government Act Survey – Electoral Area A Comments".

FINANCIAL IMPLICATIONS

There are no financial implications associated with this report.

CONCLUSION

The Regional District Legislation Roadmap discussion paper and accompanying survey represent an initial step towards reforming the *Local Government Act* to better serve regional districts. Metro Vancouver is the local government for Electoral Area A and in that capacity can lend its voice to shape these potential reforms.

REFERENCES

1. Lidstone K.C., Don. (February 28, 2025). *Regional District Legislation Roadmap*. Retrieved from https://avicc.ca/wp-content/uploads/2025/03/LR-Roadmap_FEB-2025.pdf. Last accessed 2025, April 28.
2. Joint Area Association. (February 28, 2025). *Reforming the Local Government Act: A Roadmap Survey*. Retrieved from https://www.surveymonkey.com/r/LQD3BW9. Last accessed 2025, April 28.

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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Electoral Area and Small Communities Committee

From: Marcin Pachcinski, Division Manager, Implementation and Electoral Area Services, Regional Planning and Housing Services

Date: April 16, 2025 Meeting Date: May 15, 2025

Subject: **Manager's Report**

RECOMMENDATION
That the Electoral Area and Small Communities Committee receive for information the report dated April 16, 2025, titled "Manager's Report".

ELECTORAL AREA AND SMALL COMMUNITIES COMMITTEE 2025 WORK PLAN
The Electoral Area and Small Communities Committee's Work Plan for 2025 is attached to this report (Attachment 1). The status of work program elements is indicated as pending, in progress, or complete. The listing is updated as needed to include new issues that arise, items requested by the committee, and changes to the schedule.

BARNSTON ISLAND FERRY DOCK REPAIRS AND SERVICE DISRUPTIONS
Starting on February 11, 2025, the Ministry of Transportation and Infrastructure's Marine Branch began construction work to repair areas of deterioration at the Barnston Island ferry docks on the Surrey side. This work resulted in ferry service disruptions at different times each day that have resulted in Island residents being unable to rely on a regular schedule to go on and off the Island.

On March 5, 2025, the Electoral Area A Director wrote a letter to the Minister to convey the impacts to residents and to request that disruptions be minimized and communication be improved (Attachment 2).

On March 13, Metro Vancouver staff set up a virtual meeting for Ministry staff to provide an update on the repairs. Attendees included residents, the Electoral Area A Director, Chief Grace George and staff from q̓icəy̓ (Katzie First Nation), a representative from the Honourable Garry Begg, M.L.A.'s office. Ministry staff and Western Pacific Marine, the ferry operator, presented information on the repairs and service impacts and were able to hear firsthand how the disruptions were affecting the lives and businesses of residents. Concerns related to emergency responses during ferry disruptions were also brought up.

On April 23, Metro Vancouver and q̓icəy̓ (Katzie First Nation) staff organized an in-person meeting for Ministry and Western Pacific Marine (ferry operator) staff to provide residents with the latest update on the dock repairs and upcoming ferry service disruptions. The meeting was well attended, and in addition to expressing on-going concerns about impacts, residents appreciated the Ministry and ferry operator coming out to meet with the community in-person and their commitment to better communication moving forward.

On May 1, 2025, the Minister provided a response letter (Attachment 2) noting the recent positive meeting and improved communication and coordination.

The repairs are ongoing and continue to affect the ferry service, primarily for commercial vehicles due to weight restrictions during repair work. Metro Vancouver staff have and will continue to work with Ministry staff to facilitate communication with residents, the q̓icəy̓ (Katzie First Nation), and emergency responders, including Surrey Fire, BC Ambulance, and Langley RCMP.

SHARING RESOURCES AND SERVICES

At the February 20, 2025 Electoral Area and Small Communities Committee meeting, members discussed and passed a recommendation, which was supported to by the MVRD Board, to gauge interest in developing a business case regarding the formalization of sharing resources and services between Metro Vancouver and small communities (Village of Anmore, Village of Belcarra, Village of Lions Bay, Electoral Area A, Bowen Island Municipality and Tsawwassen First Nation).

Since then, staff have engaged with small communities to assess their interest and identify key areas of focus. Metro Vancouver staff are now gathering more detailed information from staff at small communities to ensure a comprehensive understanding of the types of support these communities wish to explore. This information, along with draft principles and proposed next steps, will be presented to the Committee and MVRD Board at the next available opportunity.

ATTACHMENTS

1. Electoral Area and Small Communities Committee 2025 Work Plan.
2. Letter to the Minister of Transportation and Transit regarding Barnston Island ferry service disruptions, dated March 5, 2025.
3. Response letter from the Minister of Transportation and Transit regarding Barnston Island ferry service disruptions, dated May 1, 2025.

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Electoral Area and Small Communities Committee 2025 Work Plan
Report Date: April 16, 2025

Priorities

1st Quarter	**Status**
2025 Electoral Area Committee Work Plan	Complete
Barge Clean-up Events – Summary Report	Complete
Barnston Island Dike Improvement Project – Update	In Progress
Liquor and retail cannabis licenses, development variance permits, and rezoning applications, as applicable	Complete
2nd Quarter	**Status**
Community Works Fund Projects – Consideration	In Progress
Barnston Island Dike Improvement Project – Update	In Progress
Community Wildfire Resilience – Next Steps	Pending
Liquor and retail cannabis licenses, development variance permits, and rezoning applications, as applicable	In Progress
3rd Quarter	**Status**
Building Administration Bylaw Review - Update	Pending
Barnston Island Dike Improvement Project – Update	Pending
Liquor and retail cannabis licenses, development variance permits, and rezoning applications, as applicable	Pending
4th Quarter	**Status**
2026-2030 Electoral Area Services Financial Plan	Pending
Emergency Preparedness Activities – Report Out	Pending
Liquor and retail cannabis licenses, development variance permits, and rezoning applications, as applicable	Pending

metrovancouver | ELECTORAL AREA A

Electoral Area A
Tel. 604-432-6200 or via Email
ElectoralAreaADirector@metrovancouver.org

March 5, 2025

File: CR-07-16

The Honourable Mike Farnworth, M.L.A.
Minister of Transportation and Transit
Parliament Buildings
Victoria, BC V8V 1X4
VIA EMAIL: TT.Minister@gov.bc.ca

Dear Minister Farnworth:

Barnston Island Ferry Service Disruptions

I am writing to you in my capacity as the Director for Metro Vancouver's Electoral Area A, which includes the community of Barnston Island, and as Chair of Metro Vancouver's Electoral Area A and Small Communities Committee.

Metro Vancouver is the local government for Barnston Island, a farming community of over 100 residents located in the Fraser River between Surrey and Pitt Meadows and home to Katzie First Nation Reserve No. 3. The island's sole link to the mainland is by the Barnston Island ferry, which connects to 104 Avenue in Surrey. In addition to residences and farms, there are several businesses that operate on the Island, and their employees and suppliers use the ferry. Many residents work off-island and rely on the ferry to get to work and to access basic goods and services, as there are no commercial or health services on the Island.

Starting on February 11, 2025, your Ministry's Marine Branch began construction work to repair areas of deterioration at the Barnston Island ferry docks. This work has resulted in ferry service disruptions at different times each day. Metro Vancouver has facilitated the communication of the service disruption schedule provided by Ministry staff to Barnston Island residents and Katzie First Nation staff. Sometimes the schedule for the coming week has been provided with less than 48 hours' notice. More recently, residents have noted that the actual service disruption times varies substantially from what was communicated.

Understandably, residents have been frustrated by the disruptions, the changing schedule, and the either short-notice or lack of communication. I have seen several emails from residents expressing dismay of not being able to make it to work on time, having to wait more than one hour for the ferry during regular business hours, and as of March 5, 2025, some last minute changes to the schedule that mean residents do not know if they will be able to make important appointments on

the mainland or get back home at all in the evening. To add to the frustration and confusion, residents and q̓i̓c̓əy̓ (Katzie First Nation) staff have said they have not been receiving any responses from Ministry staff to emails and phone calls. I am sure you agree this situation is problematic and needs to be addressed.

In addition, Metro Vancouver and q̓i̓c̓əy̓ (Katzie First Nation) are jointly responsible for emergency management on the island. Katzie First Nation Chief Grace George and I have concerns about the potential for these ferry disruptions to complicate emergency responses to the Island.

I request your urgent attention to this matter and specifically request that you direct Ministry staff to:

- Minimize the Barnston Island ferry service disruptions by doing repairs during low water levels and at night after the ferry shuts down;
- Respond to Barnston Island residents and q̓i̓c̓əy̓ (Katzie First Nation) questions and concerns; and
- Communicate more frequently and give residents proper notice of upcoming ferry service disruptions.

Several residents have requested, and I support, a community meeting to discuss the situation as soon as possible. Metro Vancouver offers its services to facilitate such a meeting with Ministry staff and Barnston Island residents, including the q̓i̓c̓əy̓ (Katzie First Nation).

If you or your staff have any questions, please contact Marcin Pachcinski, Division Manager, Electoral Area and Implementation Services, by phone at 604-451-6562 or by email at marcin.pachcinski@metrovancouver.org.

Yours sincerely,

Jen McCutcheon
Chair, Electoral Area A and Small Communities Committee
Metro Vancouver

JM/JC/mp

cc: The Honourable Garry Begg, M.L.A., Minister of Public Safety and Solicitor General, Surrey-Guildford
Chief Grace George, q̓i̓c̓əy̓ (Katzie First Nation)
Elisabeth Charmley, Director, Marine Operations and Corporate Priorities, Marine Branch, Ministry of Transportation and Infrastructure
Jerry W. Dobrovolny, Commissioner/Chief Administrative Officer, Metro Vancouver

May 1, 2025

Jen McCutcheon, Chair
Electoral Area A and Small Communities Committee
Metro Vancouver Regional District
4515 Central Boulevard
Burnaby BC V5H 0C6

Reference: 331958
Your File: CR-07-16

Dear Chair McCutcheon:

Re: Barnston Island ferry

Thank you for your letter of March 5, 2025, regarding the Barnston Island ferry.

I recognize the critical role of the Barnston Island ferry, and the ministry has worked closely with the ferry operator and its engineering and construction consultants to minimize service disruptions while repairs are completed to ensure the safe operation of the ferry. Where possible, we have scheduled repairs to take place overnight or overlap with service pauses to minimize impacts for the travelling public.

The ministry is committed to continuing to improve its communication with Barnston Island residents, the Katzie First Nations and other local stakeholders. Building on the community session held on March 13, we have been providing weekly communications to residents, including updates on construction, service restrictions, mitigations and key contacts. On March 23, a follow-up community session was held on Barnston Island to share information about the next phase of construction repairs, which began on April 28. I understand this session was well received, and staff have incorporated suggestions from community members into the construction process to reduce the impact to residents.

I appreciate the support Metro Vancouver has offered in this process as well as your suggestions for how the ministry can improve its coordination moving forward. Feel free to direct further correspondence on this matter to Francois Bertrand, Executive Director of the Marine Branch, at Francois.Bertrand@gov.bc.ca.

…/2

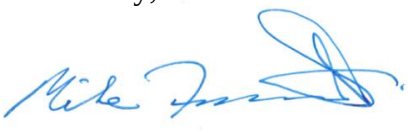
Ministry of Transportation and Transit

Office of the Minister

Mailing Address:
Parliament Buildings
Victoria BC V8V 1X4

Thank you again for taking the time to write.

Sincerely,



Mike Farnworth
Minister

Copy to: Honourable Garry Begg
Minister of Public Safety and Solicitor General
MLA, Surrey-Guildford

Chief Grace George
Katzie First Nation

Francois Bertrand, Executive Director
Marine Branch

Elisabeth Charmley, Director, Marine Operations and Corporate Priorities
Marine Branch

Jerry W. Dobrovolny, Commissioner/Chief Administrative Officer
Metro Vancouver