



# City of Richmond

## Report to Committee

**To:** Public Works and Transportation Committee      **Date:** September 22, 2023  
**From:** Milton Chan, P.Eng.      **File:** 10-6060-01/2023-Vol  
 Director, Engineering      01  
**Re:** Iona Island Wastewater Treatment Plant – Update September 2023

### Staff Recommendation

That the proposed comments for the use of barges as the primary mode of transportation for construction materials and equipment for the Iona Island Wastewater Treatment Plant Upgrade project, as outlined in the staff report titled “Iona Island Wastewater Treatment Plant – Update September 2023,” dated September 22, 2023 from the Director, Engineering be endorsed for submission to Metro Vancouver.



Milton Chan, P.Eng.  
 Director, Engineering  
 (604)-276-4377

Att. 2

REPORT CONCURRENCE		
<b>ROUTED TO:</b>	<b>CONCURRENCE</b>	<b>CONCURRENCE OF GENERAL MANAGER</b>
Parks Services	<input checked="" type="checkbox"/>	<i>[Signature]</i>
Sustainability and District Energy	<input checked="" type="checkbox"/>	
<b>SENIOR STAFF REPORT REVIEW</b>	<b>INITIALS:</b>	<b>APPROVED BY CAO</b>
	<i>[Signature]</i>	<i>[Signature]</i>

## Staff Report

### Origin

The Iona Island Wastewater Treatment Plant is owned and operated by Metro Vancouver. It serves approximately 750,000 residents in the Vancouver Sewerage Area, including Vancouver, UBC Endowment Lands, and parts of Burnaby and Richmond. For Richmond, the Iona Plant only provides treatment for sewage originating from Mitchell Island and Richmond Island.

The Iona Island Wastewater Treatment Plant Upgrade involves the construction of a new facility to replace the existing primary treatment plant located on Iona Island. The upgrade is intended to comply with the updated Federal regulations of achieving a minimum of secondary level wastewater treatment by 2030. The new facility will provide a higher level of treatment and will be located in the same location as the existing wastewater treatment plant. The footprint of the new treatment plant will be larger than that of the existing.

At the November 20, 2019 Public Works and Transportation Committee Meeting, Metro Vancouver presented preliminary project design concepts. City comments on these design concepts were endorsed by Council at the January 27, 2020 Regular Council Meeting (Attachment 1) and submitted to Metro Vancouver. The response from Metro Vancouver has been largely positive, and staff will continue to communicate these comments to Metro Vancouver through the remainder of the design and construction process.

This report provides an update on the project, and outlines proposed comments on the potential use of barges during construction.

This report supports Council's Strategic Plan 2022-2026 Focus Area #2 Strategic and Sustainable Community Growth:

*2.3 Ensure that both built and natural infrastructure supports sustainable development throughout the city.*

This report supports Council's Strategic Plan 2022-2026 Focus Area #3 A Safe and Prepared Community:

*3.4 Ensure civic infrastructure, assets and resources are effectively maintained and continue to meet the needs of the community as it grows.*

This report supports Council's Strategic Plan 2022-2026 Focus Area #5 A Leader in Environmental Sustainability:

*5.1 Continue to demonstrate leadership in proactive climate action and environmental sustainability.*

## **Current Update**

### Project Status

In July 2020, following additional design work and stakeholder engagement, the Greater Vancouver Sewerage and Drainage District (GVS&DD) Board endorsed a design concept that included tertiary treatment, resource recovery opportunities, ecological enhancement opportunities, community and park integration, and interpretive programs.

Subsequently, Metro Vancouver implemented a project definition process for stakeholder and public engagement, and conducted engineering assessments to refine the design concept. Through this process, the conceptual design was further developed and later approved at the GVS&DD Board Meeting on March 25, 2022.

The project is currently in the early works and preliminary design phase, with work to prepare the site underway.

The preliminary project schedule identifies completion of the upgrade to secondary treatment by 2035, five years beyond the regulatory deadline of 2030. The ecological enhancements and remaining construction are expected to be completed by 2038.

### Project Funding

The total estimated cost of the project is \$9.9 billion (including cost escalation), based on the conceptual design that was approved by the GVS&DD Board in March 2022. In March 2023, the provincial government announced a \$250M funding contribution for the project. Metro Vancouver will continue exploring senior government funding opportunities as the project progresses.

### Project Governance

During the GVS&DD Board Meeting on February 3, 2022, the GVS&DD Board discussed the need to develop a more robust project governance to limit the potential for significant cost increases. As such, Metro Vancouver has established dedicated project delivery, procurement and real estate departments to improve the management and delivery of critical projects. Metro Vancouver staff provided an update to the Metro Vancouver Regional District (MVRD) Board on their process improvements in an information report titled “Due Diligence Improvements for Major Projects” at the July 28, 2023 MVRD Board meeting.

The Iona Island Wastewater Treatment Plant Upgrade is proposed to be delivered in accordance with Metro Vancouver’s stage gate framework. The framework defines five stage gates that capture key milestones associated with the project initiation, definition, design, and construction phases. All project tasks within each phase of the project are required to be completed before the next stage gate can begin. Metro Vancouver staff have advised that this project delivery method will clearly define project objectives, roles and responsibilities, and promote risk management and efficient reporting to project stakeholders and decision makers.

### Community Engagement

Metro Vancouver began community engagement for the project in 2018 to receive feedback on the conceptual design and associated ecological projects. The engagement included member jurisdictions, the public, key stakeholders and First Nations. Many of the concerns that were raised during the engagement were addressed through the project conceptual design phase, and Metro Vancouver has indicated that the remaining concerns will be addressed during the ongoing project early works and preliminary design phase.

Project updates and community engagement events are regularly updated on Metro Vancouver's webpage for the project.

### **Temporary Barge Facility**

During the project definition stage, Metro Vancouver identified the potential use of barges to transport materials and equipment during construction of the project. Using barges will reduce construction traffic on Ferguson Road, thereby improving safety for cyclists, pedestrians, and vehicles. In addition, greenhouse gas emissions will be significantly reduced as Metro Vancouver anticipates that the barge facility will replace over 500 dump trucks per day. If barges are not used, City-owned roads would be subject to large volumes of heavy truck traffic, which could significantly accelerate the deterioration of the roadways.

To facilitate this mode of transportation, a temporary barge facility is proposed to be constructed near the northeast portion of the site (Attachment 2). In an information report included on the March 25, 2022 GVS&DD Board Agenda, Metro Vancouver staff indicated that Deering Island residents had expressed concerns about the proposed barge facility location.

On October 5, 2023, Metro Vancouver is hosting an information session that will provide an opportunity for residents in the region to share their feedback on potential impacts of the barge facility. The engagement event will include updates on mitigation measures that Metro Vancouver will undertake for impacted nearby communities.

### **Analysis**

The use of barges is in alignment with the Council endorsed comments on this project relating to road safety and additional loading of roads. Staff propose that the comment below be forwarded to Metro Vancouver:

- That the City supports the use of barges to transport materials and equipment during construction to reduce traffic congestion, enhance safety for cyclists accessing Iona Beach Park, and reduce greenhouse gas emissions.

### **Financial Impact**

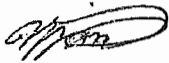
None at this time.



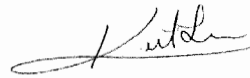
**Conclusion**

The Metro Vancouver Iona Island Wastewater Treatment Plant Upgrade Project will replace the existing primary treatment plant located in Richmond with a new facility that provides a higher level of treatment. The project conceptual design has been approved by the GVS&DD Board, and the total estimated cost of the project is \$9.9 billion. The project is currently in the early works and preliminary design phase, and construction is anticipated to be completed by 2038.

The use of barges during construction is consistent with the Council endorsed comments on this project, and staff recommend that the proposed comment be endorsed for submission to Metro Vancouver.



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Senior Project Manager  
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Keith Lam, P.Eng., PMP  
Project Manager  
(604)-204-8516

Att.1: Iona WWTP Comments Endorsed January 27, 2020

Att.2: Iona Island Wastewater Treatment Plant Projects Summary



City of  
Richmond



To: Mayor & Each Councillor  
From: City Clerk's Office  
Materials Relating to an Agenda Item  
Meeting: PWT  
Date: Oct. 18, 2023 Item#: 6

**Memorandum**  
Engineering and Public Works  
Engineering

**To:** Mayor and Councillors  
**From:** Eric Sparolin, P.Eng.  
Acting Manager, Engineering Planning  
**Re:** Supplemental Information – Iona Island Wastewater Treatment Plant – Update  
September 2023  
**Date:** October 12, 2023  
**File:** 10-6060-01/2023-Vol 01

The purpose of this memorandum is to provide supplemental information relating to the staff report titled, “Iona Island Wastewater Treatment Plant – Update September 2023” dated September 22, 2023, for Committee’s consideration at the Public Works and Transportation Committee meeting to be held on October 18, 2023.

The Iona Island Wastewater Treatment Plant Upgrade project involves the construction of a new facility to replace the existing primary treatment plant located on Iona Island which is owned and operated by Metro Vancouver. Through the project definition stage, Metro Vancouver identified the potential use of a temporary barge berth to transport materials and equipment during construction of the project.

On October 5, 2023, Metro Vancouver hosted an open house to provide information about the project and allow interested participants to share their feedback. Metro Vancouver shared three potential sites for the temporary barge berth as shown in Figure 1. The display boards from the open house contained further detailed information on the project and are included in Attachment 1.

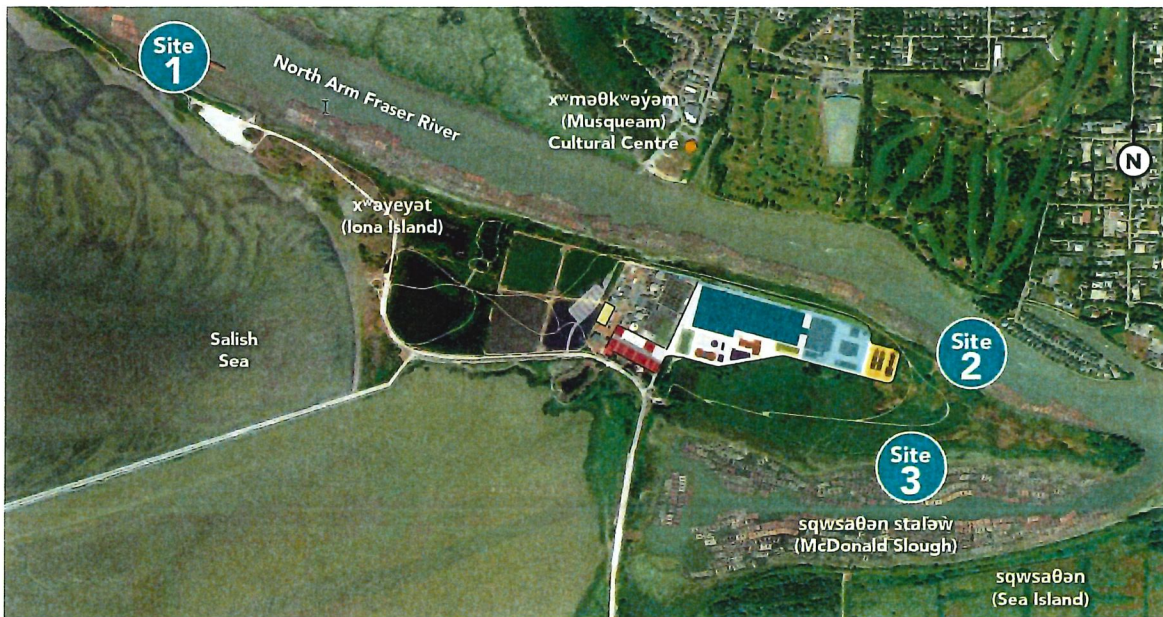


Figure 1: Metro Vancouver's Potential Temporary Barge Berth Sites on Iona Island

October 11, 2023

- 2 -

Site 1 is located northwest of Iona Island. Site 2 is located near the northeast portion of the construction site for the project and is across the river from Deering Island. Site 3 is located in McDonald Slough. During the open house, Metro Vancouver staff advised that Site 2 was identified during the project definition stage given that it served as the original barge berth location for the treatment plant in the 1950s and is classified as disturbed land.

City staff attended the open house and observed that about 100 attendees were present. Although Metro Vancouver outlined mitigation measures that will be implemented to reduce impacts from the barge berth, many of the attendees at the open house expressed concerns for the barge berth regarding environmental impacts, dust, noise, air quality and light pollution. In addition, the majority of attendees had concerns with Site 2 due to its proximity to Deering Island.

Ongoing and upcoming next steps for engagement from Metro Vancouver include the following:

- Metro Vancouver has engaged a third-party to conduct a site selection study to evaluate the identified sites including the environmental and health impacts at each of the three locations;
- Metro Vancouver is compiling the feedback received during the open house into a summary report that will be shared publicly on the project webpage and with the Metro Vancouver Liquid Waste Committee and Board; and
- Metro Vancouver plans to host an online engagement session in the near future and will share the results of the site selection study.

Should you have any questions, please contact the undersigned.



Eric Sparolin, P.Eng.  
Manager, Engineering Planning  
(604-247-4915)

ES:kckl

Att. 1: Metro Vancouver Open House Presentation Boards

pc: SMT  
Milton Chan, P.Eng., Director, Engineering  
Todd Gross, Director, Parks Services  
Peter Russell, Director, Sustainability and District Energy



## Rules of Engagement

We're very glad you've taken the time to join us and to engage on important issues for your community.

Around the room you'll find lots of information and friendly and well-informed Metro Vancouver staff who are here to speak with you and answer your questions.

We are committed to listening carefully, engaging constructively, and addressing concerns you may have as fully as we can.

There will be zero tolerance for any intimidating, confrontational, or discriminatory language or behaviour at this event.

*Thank you.*



## About Metro Vancouver

Metro Vancouver is a diverse organization that plans for and delivers regional utility services, including water, sewers and wastewater treatment, and solid waste management.

Metro Vancouver also regulates air quality, plans for urban growth, manages a regional parks system, provides affordable housing, and serves as a regional federation. The organization is a federation of 21 municipalities, one electoral area, and one treaty First Nation located in the region of the same name. The organization is governed by a Board of Directors of elected officials from each member jurisdiction.



## Mission

Metro Vancouver's mission is framed around three broad roles:

### Serve as a Regional Federation

Serve as the main political forum for discussion of significant community issues at the regional level and facilitate the collaboration of members in delivering the services best provided at the regional level.

### Deliver Core Services

Provide regional utility services related to drinking water, liquid waste, and solid waste to members. Provide regional services, including parks and affordable housing, directly to residents and act as the local government for Electoral Area A.

### Plan for the Region

Carry out planning and regulatory responsibilities related to the three utility services as well as air quality, climate action, regional planning, regional parks, Electoral Area A, affordable housing, labour relations, regional economic prosperity, and regional emergency management



## About the Current Iona Island Wastewater Treatment Plant Projects

The Iona Island Wastewater Treatment Plant is being upgraded to ensure continued protection of public health and the environment in a growing region.

Metro Vancouver wants to ensure that by upgrading the wastewater treatment plant, we are making a positive contribution to the health and well-being of people and the environment. A number of ecological restoration projects are planned in coordination with the plant upgrades.

The current plant is a primary treatment facility that serves approximately 750,000 residents in the Vancouver Sewerage Area. Built in 1963, the existing treatment facility is one of the last plants on the west coast of North America to provide only primary level wastewater treatment. It is highly vulnerable to both earthquakes and sea level rise. Much of the existing plant is reaching the end of its service life.



### Project Goals

-  Improve the level of treatment from primary to tertiary to protect water quality and the marine environment
-  Recover sustainable energy and resources from wastewater
-  Withstand earthquakes and sea level rise
-  Integrate with Iona Beach Regional Park and the surrounding environment
-  Restore estuary health and fish habitat, protect bird habitat, and enhance terrestrial and freshwater ecosystems
-  Minimize odours
-  Connect people to nature
-  Integrate xʷməθkʷəy̓əm (Musqueam) interests



## Current Iona Island Wastewater Treatment Plant



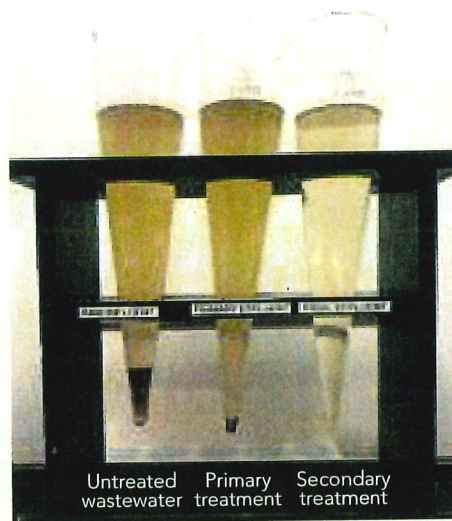


## Improving Wastewater Treatment Levels

To ensure the health of the approximately 750,000 residents who rely on this service, a new secondary treatment plant will replace the current primary facility. This advanced plant will provide tertiary treatment to significantly improve the treated wastewater quality being discharged to the Salish Sea. The new facility will not only meet future population demands, but will comply with national regulations that help protect our waters.

### Regulatory requirements

Metro Vancouver's 2011 Liquid Waste Management Plan (approved by the provincial Minister of Environment), and federal Wastewater Systems Effluent Regulation, legislated in 2012, require that the plant be upgraded to secondary treatment no later than December 31, 2030.



### Wastewater Treatment Process

Wastewater treatment is the process of removing contaminants and pollutants from wastewater, ensuring it is safe for release into the environment. This helps to mitigate environmental and public health risks associated with untreated wastewater.

Wastewater treatment plants can provide primary, secondary, and tertiary treatment services. Currently the Iona Island Wastewater Treatment Plant provides primary treatment.

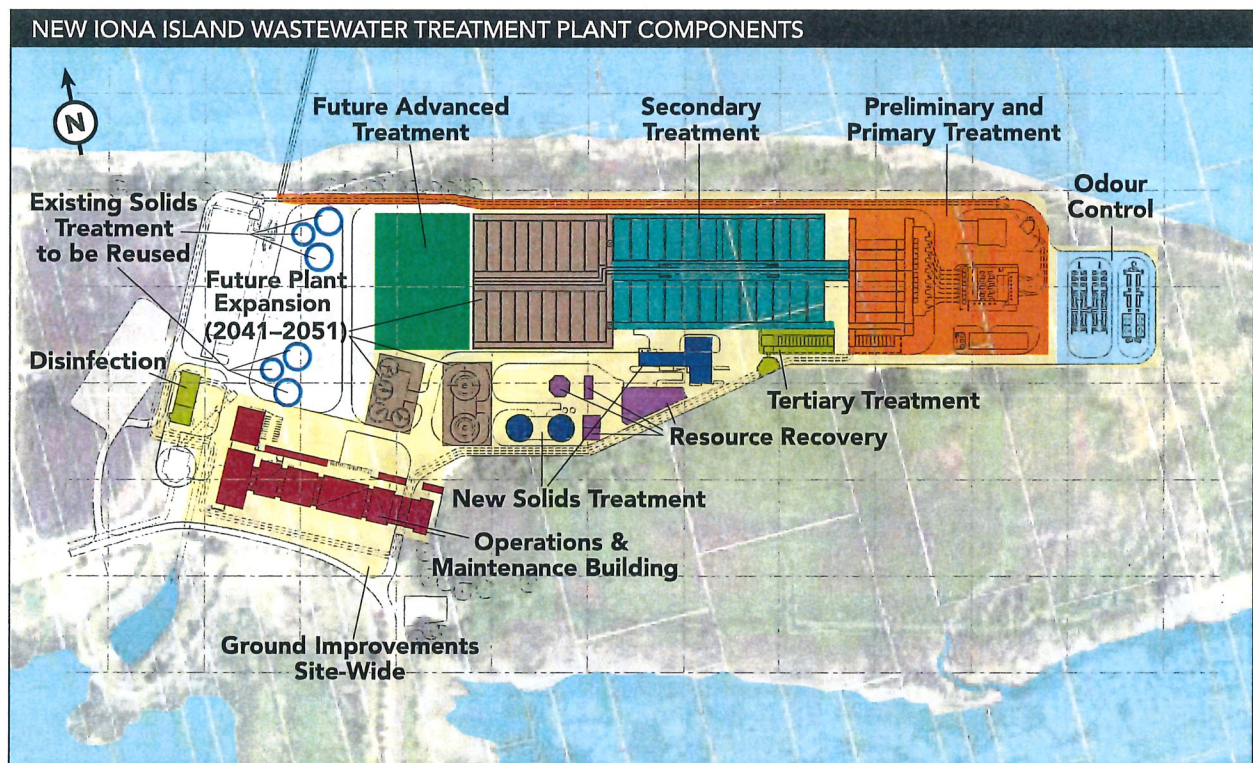
- **Primary treatment** typically removes around 30-40% of pollutants from wastewater.
- **Secondary treatment** is more effective and can remove up to 85-90% of pollutants.
- **Tertiary treatment** can achieve a much higher level of pollutant removal, often exceeding 90%.





## Key Components and Features of the New Plant

- Early and enabling works
- Ground improvements
- Preliminary and primary treatment
- Secondary treatment
- Tertiary treatment and disinfection
- Solids treatment
- Odour control
- Operations and maintenance building (including regional laboratory and welcome centre)
- Resource recovery opportunities (including biogas generation, reclaimed water distribution, district energy heating, and biosolids beneficial use)
- Future advanced treatment
- Ecological restoration projects (designed to improve water quality, restore fish habitat, improve and protect bird habitat, and enhance terrestrial ecosystems)
- Transportation and utility upgrades
- Integration with Iona Beach Regional Park and surrounding communities





## Reconciliation and First Nations Community Engagement

Metro Vancouver is engaging 14 First Nations on the projects and is working closely with the xʷməθkʷəy̓əm (Musqueam) Indian Band, whose primary reserve lands are directly across from the treatment plant. Metro Vancouver has incorporated the ecological priorities and interests shared by xʷməθkʷəy̓əm (Musqueam) into the conceptual design.

We have heard that xʷməθkʷəy̓əm (Musqueam) priorities include:

- Supporting fish and fish habitat
- Designing xʷəyeyət (Iona Island) ecosystems that support traditional harvesting
- Breaching the jetties (man-made coastal structures for wave control) and causeway
- Allowing xʷməθkʷəy̓əm (Musqueam) access for traditional resource use, cultural practices, and knowledge transfer

The ecological restoration projects are also part of our work to redress the effect of the plant's construction in the 1960s and on-going operation on the well-being and cultural practices of xʷməθkʷəy̓əm (Musqueam). Acknowledging those impacts and beginning to remedy them are part of Metro Vancouver's reconciliation journey with xʷməθkʷəy̓əm (Musqueam) and other First Nations.

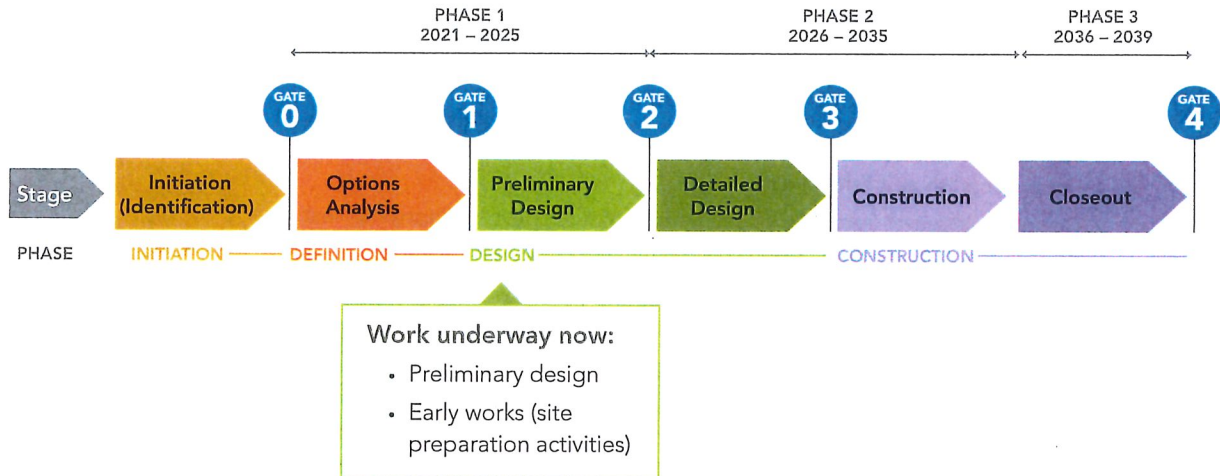


xʷəyeyət (Iona Island) 2019





## Project Timeline



- Currently we are in Phase 1. In this phase we are doing all our preliminary planning, estimated schedule, and cost and risk assessments.
- We plan to start Phase 2 in 2026, during which we'll begin detailed design of all the sub-projects.
- In Phase 3 we will begin demolition of existing treatment plant and restoration of the site.



## Community Engagement

Engagement for the project definition phase began in 2018 and included member jurisdictions, the public, key stakeholders, and First Nations.

Public engagement periods during project definition and options analysis:

- 2018 to 2019 – Listen & Learn
- 2019 to 2021 – Initial Design Concept
- 2021 to 2022 – Revised Design Concept

### Who We Talked To



### What We Did



### What We've Heard to Date: Common Themes





## Environmental and Social Benefits

**Future Advancement Treatment:** Can increase the removal of contaminants of emerging concern (CECs) such as pharmaceuticals and micro-plastics.

**Ecological Restoration Projects:** Existing treatment plant has disrupted the natural estuary processes. The proposed park and ecological projects will restore estuary health and fish habitat.

**Climate Adaptation:** Project will restore the foreshore and implement ecosystem-based flood protection strategies such as building to keep pace with sea level rise.

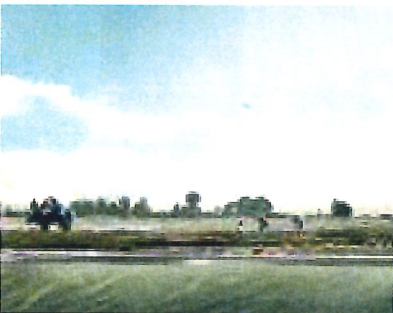
FOSTER RESILIENCE TO  
SEA-LEVEL RISE



CONNECT PEOPLE  
TO NATURE



COLLABORATE WITH ɣ\*Μᾰθκ\*ᾰῖῖᾰΜ  
(MUSQUEAM)



RESTORE ESTUARY HEALTH AND  
FISH HABITAT



ENHANCE TERRESTRIAL AND  
FRESHWATER HABITATS



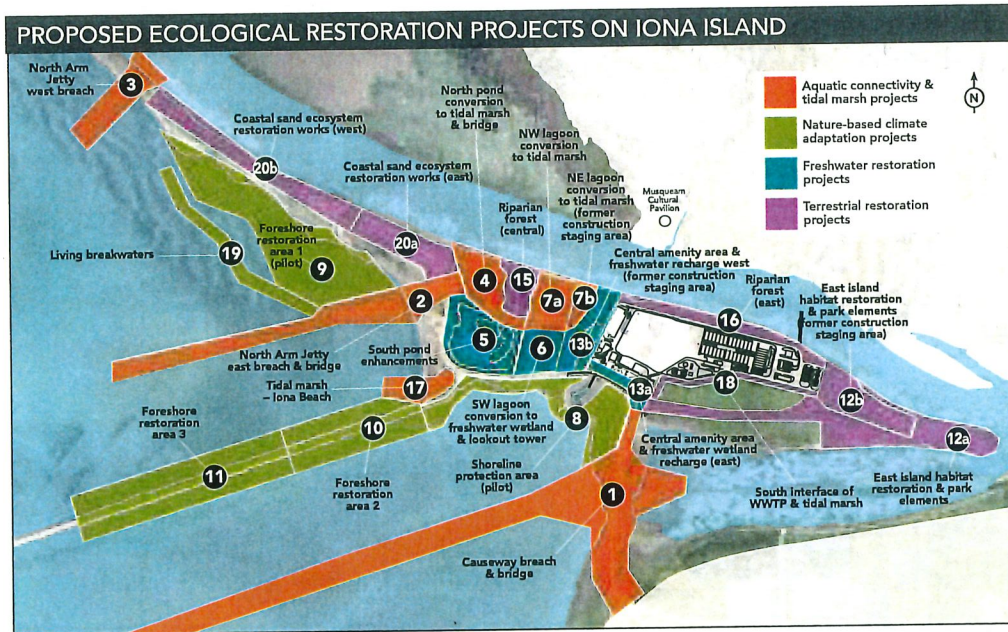
IMPROVE WATER QUALITY

## Environmental and Social Goals

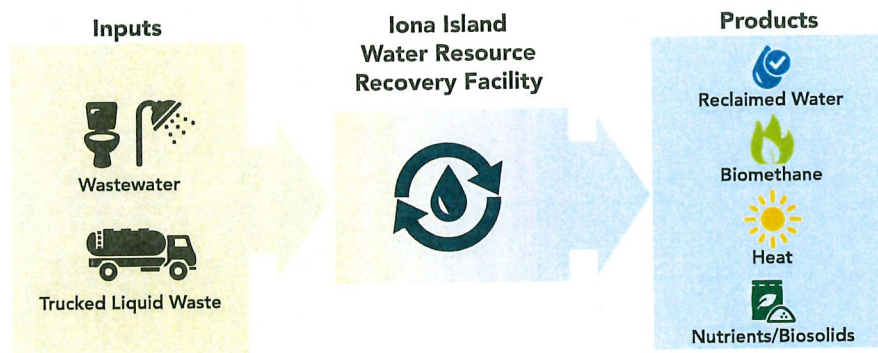
The proposed ecological restoration projects will support:

- Increased connection to nature for park visitors
- Nature-based climate change adaptation
- Restoration of the Island's diverse and sensitive ecosystems
- Integration of the wastewater treatment plant with Iona Beach Regional Park and the community

## Ecological Restoration Projects



## Resource Recovery Opportunities



### Achieving Carbon Neutrality by 2050

The overall project is expected to result in a net reduction of regional emissions of approximately **5,800 tonnes of CO2 per year**. This is equivalent to **removing almost 1,600 passenger vehicles from the roads for one year** or reducing the energy-based emissions from nearly 1,250 homes for one year.

The reduction is attributed to:

- Producing renewable natural gas from biogas processing, which offsets the emissions from biogas flaring
- Upgrading the biogas system
- Offsite production of electricity for the plant
- Residuals hauling
- Chemical consumption



## Purpose of the Barge Berth

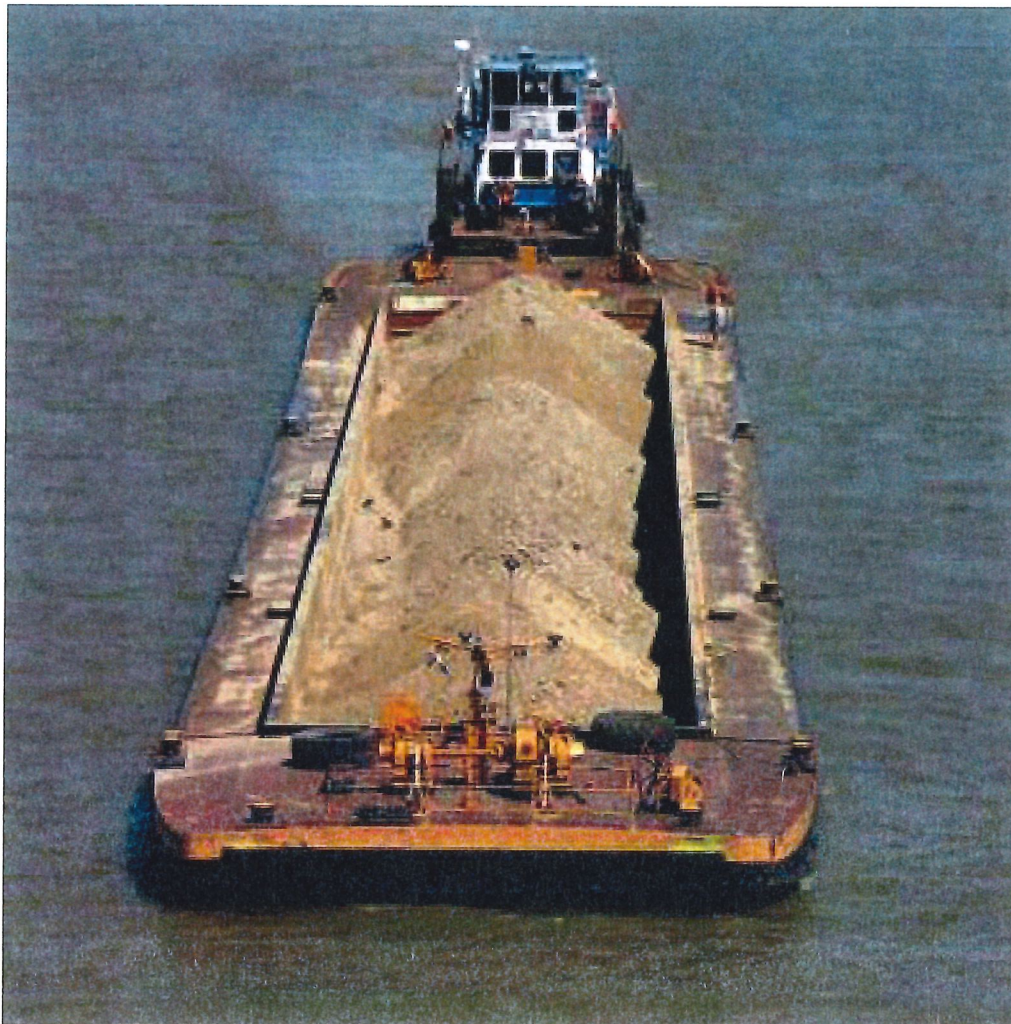
The Iona Island Wastewater Treatment Plant Projects combined are the region's largest infrastructure projects and will require significant movement of goods and people for construction over the next 15 years.

The site requires extensive ground improvements because it is in the Fraser River Delta. With limited road access, the barge berth will facilitate movement of materials so that we can build a strong and reliable foundation. The ground improvements will allow the future treatment plant to withstand a large magnitude earthquake and future rising sea levels.

### Selection Criteria

The proposed locations were identified after careful review and used the following criteria:

- x̣ṃəθḳẉəỵəm (Musqueam) interests
- Impact on stakeholders and the community
- Functionality
- Cost
- Schedule
- Ecological impact



An example of the type of barge expected to berth and supply materials to the construction site



## Barge Berth Location Selection Criteria

The proposed locations were identified after careful review and used the following criteria:

### xʷməθkʷəy̓əm (Musqueam) Interests

- Consider xʷməθkʷəy̓əm (Musqueam) interests and perspectives including cultural, health impacts, and disruptions.

### Impact on Stakeholders and the Community

- Examine how the selected site will affect residents, businesses, park users, and organizations in the area; including health impacts and disruptions.
- Evaluate noise, air, light and associated health impacts on the surrounding community.

### Functionality

- Assess if the proposed site can effectively accommodate a barge berth, considering constructability, ability to operate effectively, permitting, land availability, and transportation of materials.

### Cost

- Evaluate the financial implications, including acquisition, construction, ongoing operation, maintenance, and potential unexpected expenses.

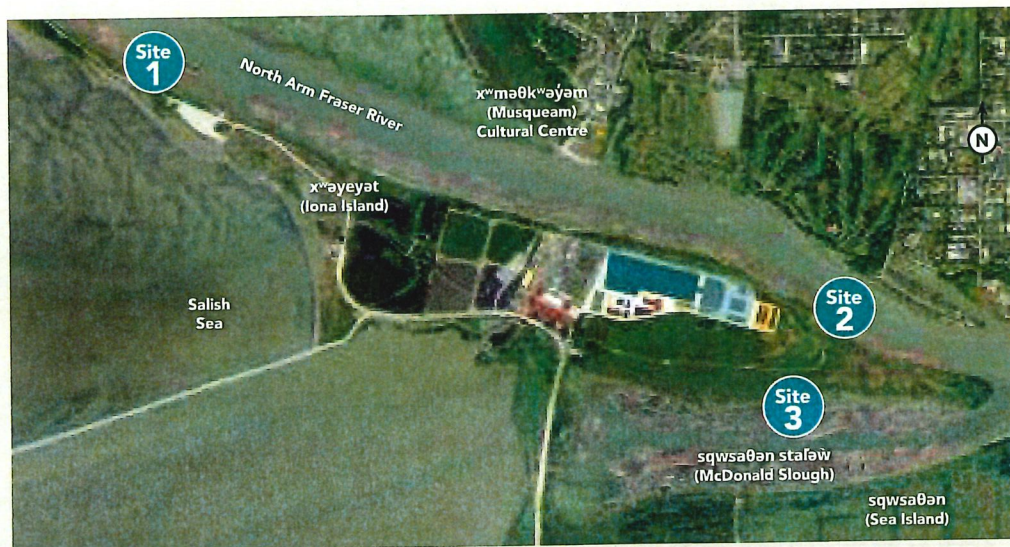
### Schedule

- Ensure timely progress to avoid significant financial and operational delays; assess the feasibility of meeting project milestones.

### Ecological Impact

- Evaluate the environmental consequences of the site selection, including effects on habitats, water bodies, air quality, biodiversity, and necessary mitigation measures for sustainable development.

Metro Vancouver has engaged a third-party to conduct a site analysis and if the most optimal barge berth site.



Site 1 – Northwest of Iona Island



Site 2 – Adjacent to the Construction Laydown Area



Site 3 – McDonald Slough



## Barge Berth – Proposed Site Location 1: Northwest of Iona Island

### Initial Site Analysis

- Advantages:**
- + Wider section of the river and good channel depth for navigation
  - + Currently permitted for industrial use
  - + Adequate space for construction laydown materials
- Constraints/Risks:**
- 2 km away from construction space that will require additional transport of materials
  - Limited road access and only other alternative is a public parking lot which is a safety hazard
  - May result in increased construction durations due to location of barge berth to construction area
  - Night construction may result in increased cost
  - Requires agreement from Vancouver Fraser Port Authority
  - Close proximity to Musqueam Primary Reserve
  - Impact to ecological habitat due to site location and transport of materials to construction area



Rendering of barge berth northwest of Iona Island



## Barge Berth – Proposed Site Location 2: Adjacent to Construction Laydown Area

### Initial Site Analysis

**Advantages:**

- + Close proximity to construction site and sufficient space to laydown construction materials
- + Site of the original barge berth location for the Iona Island Wastewater Treatment Plant in the 1950s and classified as disturbed land
- + Site is not in proximity to publicly accessible area
- + Minimal impacts on current site and ecological surrounding

**Constraints/Risks:**

- Close proximity to Deering Island and Southland residents



Rendering of barge berth adjacent to construction laydown area



## Barge Berth – Proposed Site Location 3: McDonald Slough

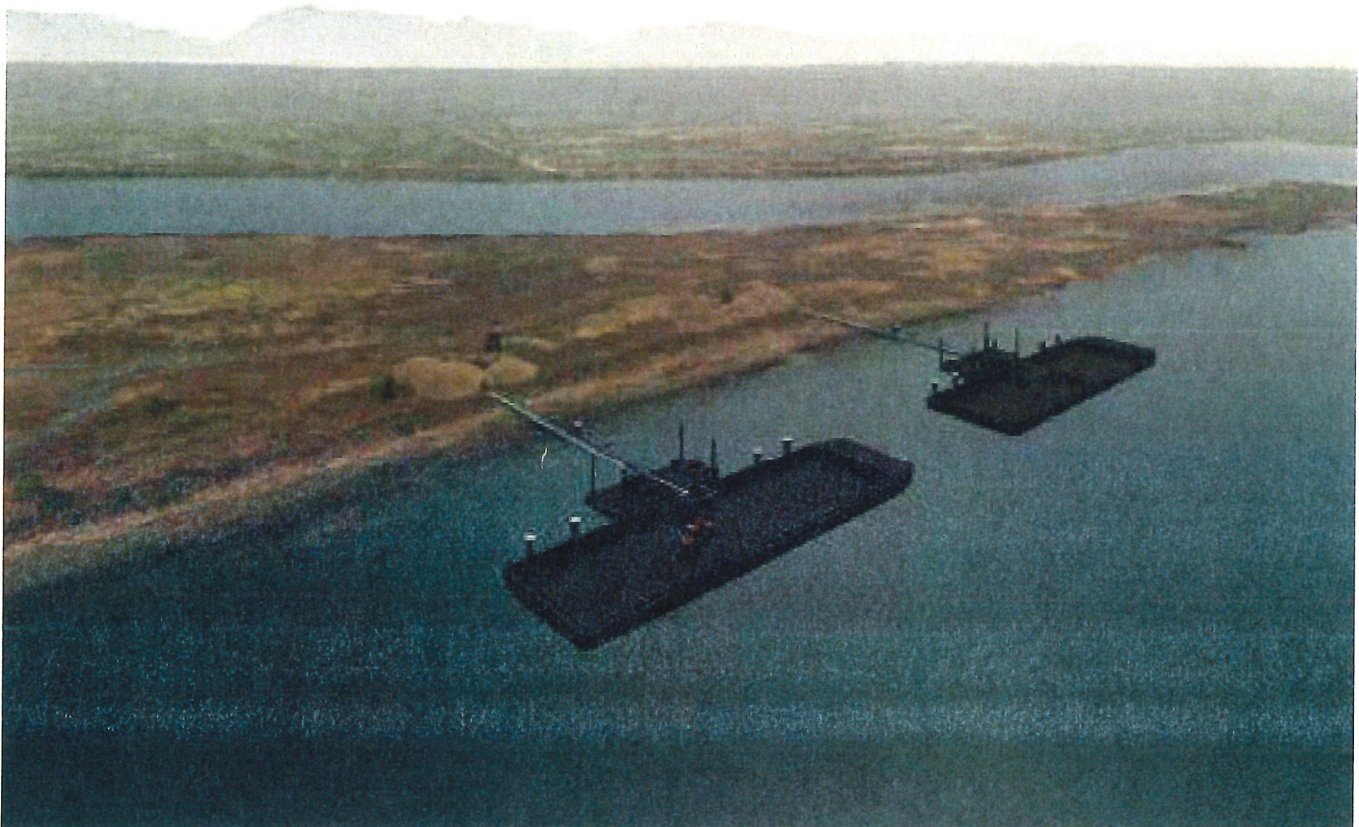
### Initial Site Analysis

**Advantages:**

- + Minimal impact on current navigation channels
- + Low impact to neighbours and park users





**Constraints/Risks:**

- Site surrounded by a sensitive inter-tidal marsh, including salmon bearing fish channels, and local habitat would be disturbed; fish channels would be disturbed impacting future salmon runs
- Shallow and narrow access that makes it difficult for construction
- Requires extensive dredging to create a full navigation channel in the slough would impact local environment
- McDonald Slough has significant wooden debris on the bottom and has never been dredged. There is a potential for contaminated materials to be present in the areas that would require dredging
- McDonald Slough facilitates 20 percent of the Province's logging and would have major negative impacts to the logging industry



Rendering of barge berth in McDonald Slough

## Benefits of Barging

-  **Reduce construction traffic** by replacing approximately 500 dump trucks each day
-  **Improve safety** for over 370,000 annual park visitors
-  **Reduce greenhouse gas emissions** through traffic reduction and align with regional sustainability objectives
-  **Maintain the project schedule** which will minimize costs and delays to comply with regulatory requirements

## Barge Activities

- **Barges would not be powered** (would be pulled by tug)
- **Would bring materials for ground improvements:**
  - Sand
  - Crushed stone
  - Aggregate for concrete
- **Average of one barge per day** (sometimes two barges)
- **Hours of work**
  - 7:00 am – 8:00 pm
  - Monday – Friday



The Iona barge berth will replace approximately 500 dump trucks a day., That many trucks is the equivalent of lining up the trucks the length of the Grouse Grind.



## Barge Berth Timeline

Mid-2023 – Early 2024	Fall 2025 (for six months)	2026 – 2030	2030 – 2038
Location selection	Barge berth construction	Barge berth in peak operation	Barge berth usage decreases year-by-year until IWWTP projects are complete



Rendering of barge berth Site 2 adjacent to construction laydown area



Previous barge berths off of Iona Island (1959)

### Similar Barge Berth in Vancouver: Heidelberg Materials

- There is a barge berth at Granville Island in False Creek approximately the same distance from residential areas
- 4-5 self-unloading barges unloaded per week
- Reduces 470 dump truck loads off the roads every week



View across from Heidelberg Materials on Granville Island, Vancouver

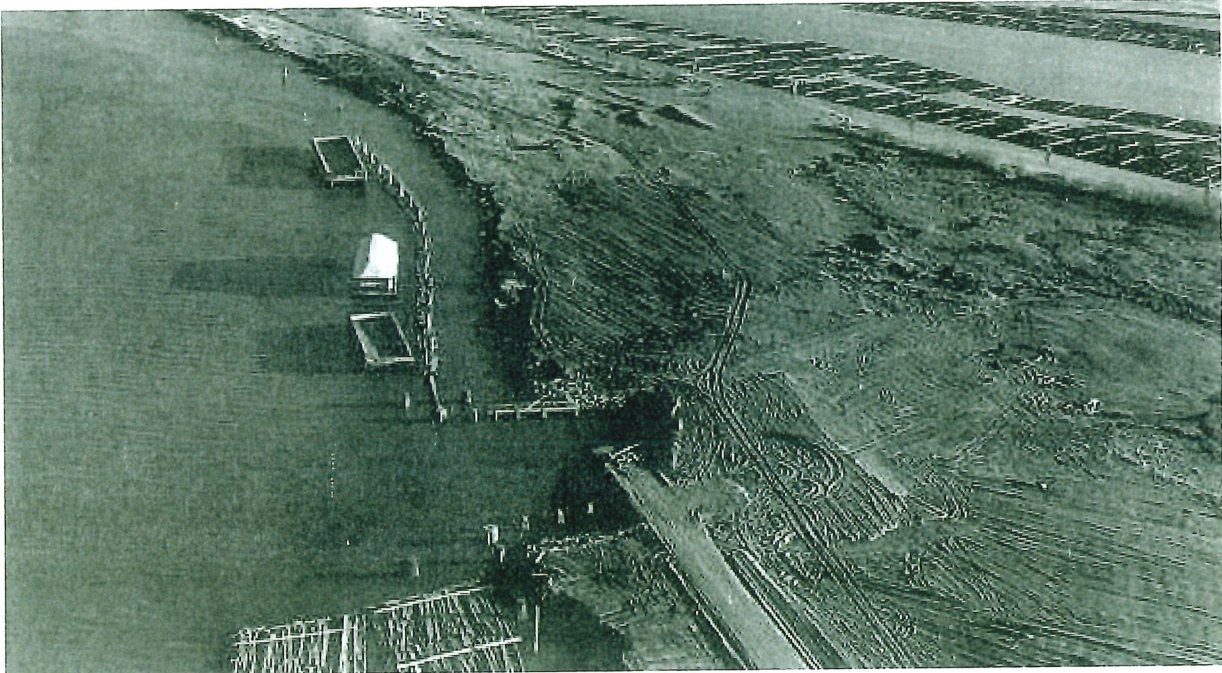


## Barge Berth Timeline

Mid-2023 – Early 2024	Fall 2025 (for six months)	2026 – 2030	2030 – 2038
Location selection	Barge berth construction	Barge berth in peak operation	Barge berth usage decreases year-by-year until IWWTP projects are complete



Rendering of barge berth Site 2 adjacent to construction laydown area



Previous barge berths off of Iona Island (1959)



# Minimizing Impacts on Community

## Air & Noise Monitoring

Metro Vancouver will install a noise and air quality monitoring station prior and the duration of project construction. Locations will be determined with input from the community.

### What We Heard: Reduce Noise

Barge construction and operations will:

- Follow City of Richmond’s noise by-law (7:00 am – 8:00 pm, Monday–Friday)
- Not exceed 85 dBA

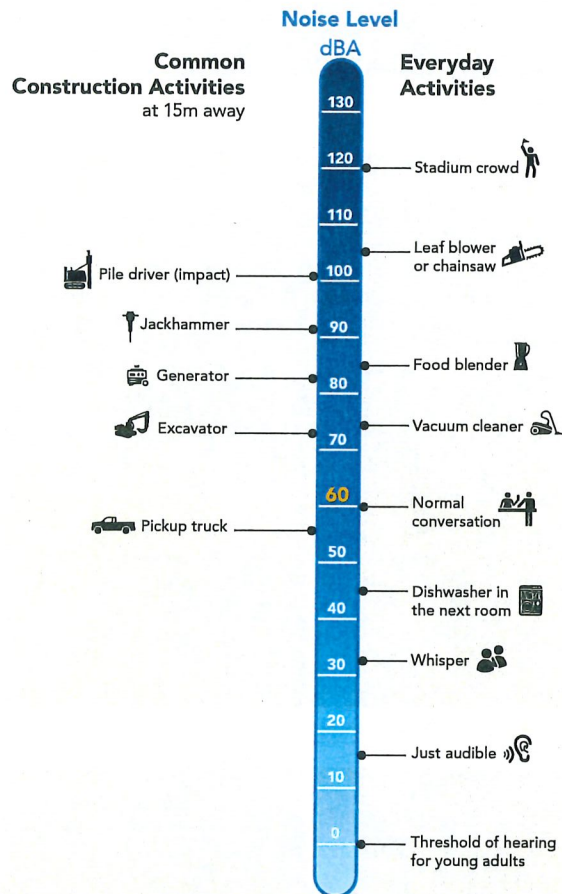
Mitigation measures will include:

- Noise reducing linings at material transfer points
- Low speed conveyors
- Sound baffles

### What We Heard: Reduce Dust

Dust control measures include:

- Misting material on barges to control dust emissions from the barge
- Misting incoming supplier materials to meet mandated dust control requirements
- Methods to capture and limit dust emissions



Metro Vancouver implementing dust control measures

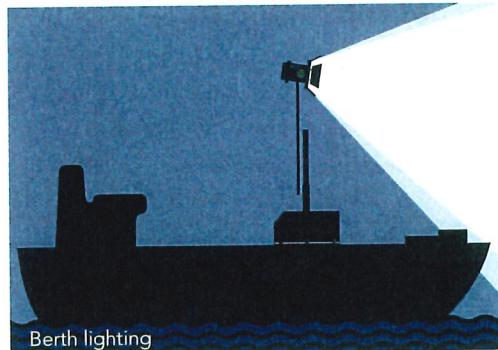


## Minimizing Impacts on Community

### What We Heard: Reduce Light Pollution

Mitigation measures will include:

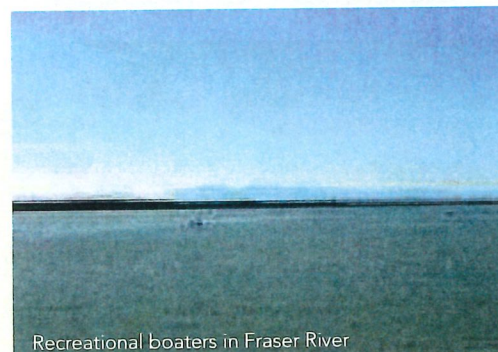
- Operational lights outside of mobile equipment to be shielded and directed on the barge only
- Other than navigational lights, nighttime (non-operational) lighting on the barge berth not expected



### What We Heard: Ensure Marine Safety

Metro Vancouver is working with regulators and North Arm Fraser River Marine users to ensure the project considers all marine user safety standards.

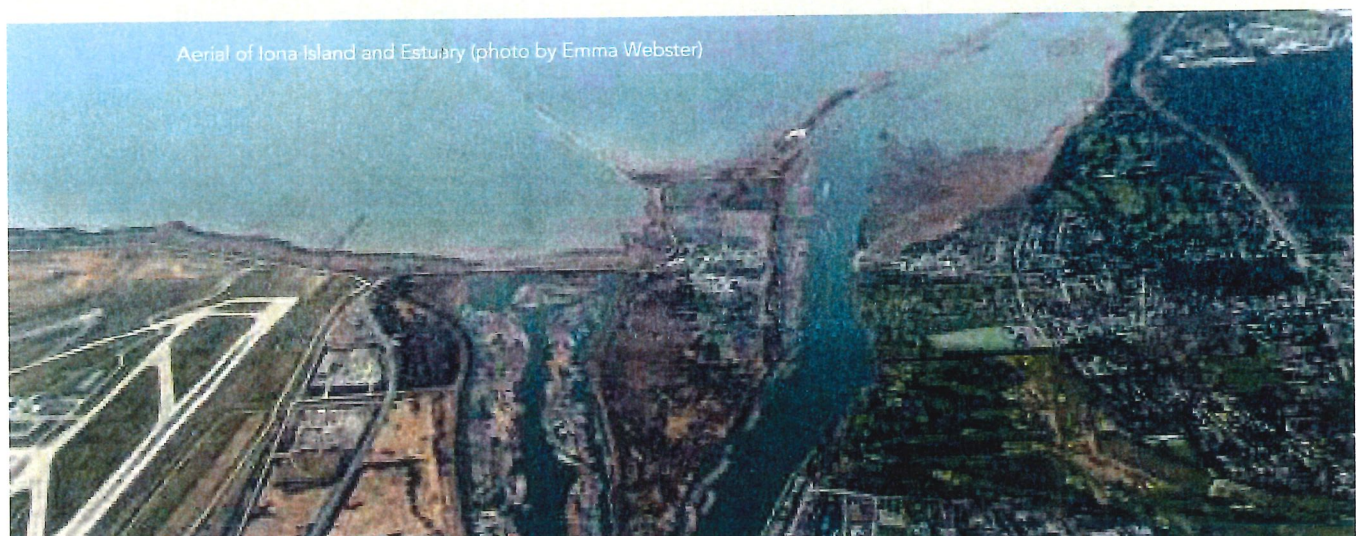
- Barge berth will be located outside the active navigation channel
- Metro Vancouver is engaging with:
  - Transport Canada
  - North Arm Fraser River marine users
  - Recreational marine users



### What We Heard: Reduce Environmental Impacts

Metro Vancouver will ensure that the berth is:

- Constructed in accordance with provincial environmental standards
- Permitted by Transport Canada and Fisheries and Oceans Canada





## Our Commitment to Community

### We are committed to:

- **Accountability** – Metro Vancouver upholds the commitments it makes to the public and demonstrates that the results and outcomes of the engagement processes are consistent with the approved plans for engagement
- **Inclusiveness** – Metro Vancouver makes its best efforts to reach, involve and hear from those who are impacted. Plain language will be used in all engagement materials
- **Transparency** – Metro Vancouver provides clear and timely information, and endeavours to ensure decision processes, procedures, and constraints are understood
- **Commitment** – Metro Vancouver, within its ability and work plans, allocates sufficient resources for effective engagement
- **Responsiveness** – Metro Vancouver seeks to understand and be receptive to the public's input



### Next steps:

- Summary report of today's engagement session will be available at [metrovancover.org/iona](http://metrovancover.org/iona)
- Metro Vancouver will provide an executive summary of the third-party study on the proposed barge berth locations once completed

Our community engagement team is here to listen to you and answer your questions. You can reach us at:

- **Email:** [ionawwtp@metrovancover.org](mailto:ionawwtp@metrovancover.org)
- **Phone:** 604-432-6610
- **Website:** [metrovancover.org/iona](http://metrovancover.org/iona)

