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.

MAP OF VANCOUVER SEWERAGE AREA

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

Vancouver Sewerage Area by the numbers:

- **750,000** people served today
- **950,000** people served by 2051
- Treats **40%** of the region's wastewater
- Built in **1963**
- **~130 km²** service area
- **496 ML** of flow treated each day
- Treats more than **triple** its original capacity

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

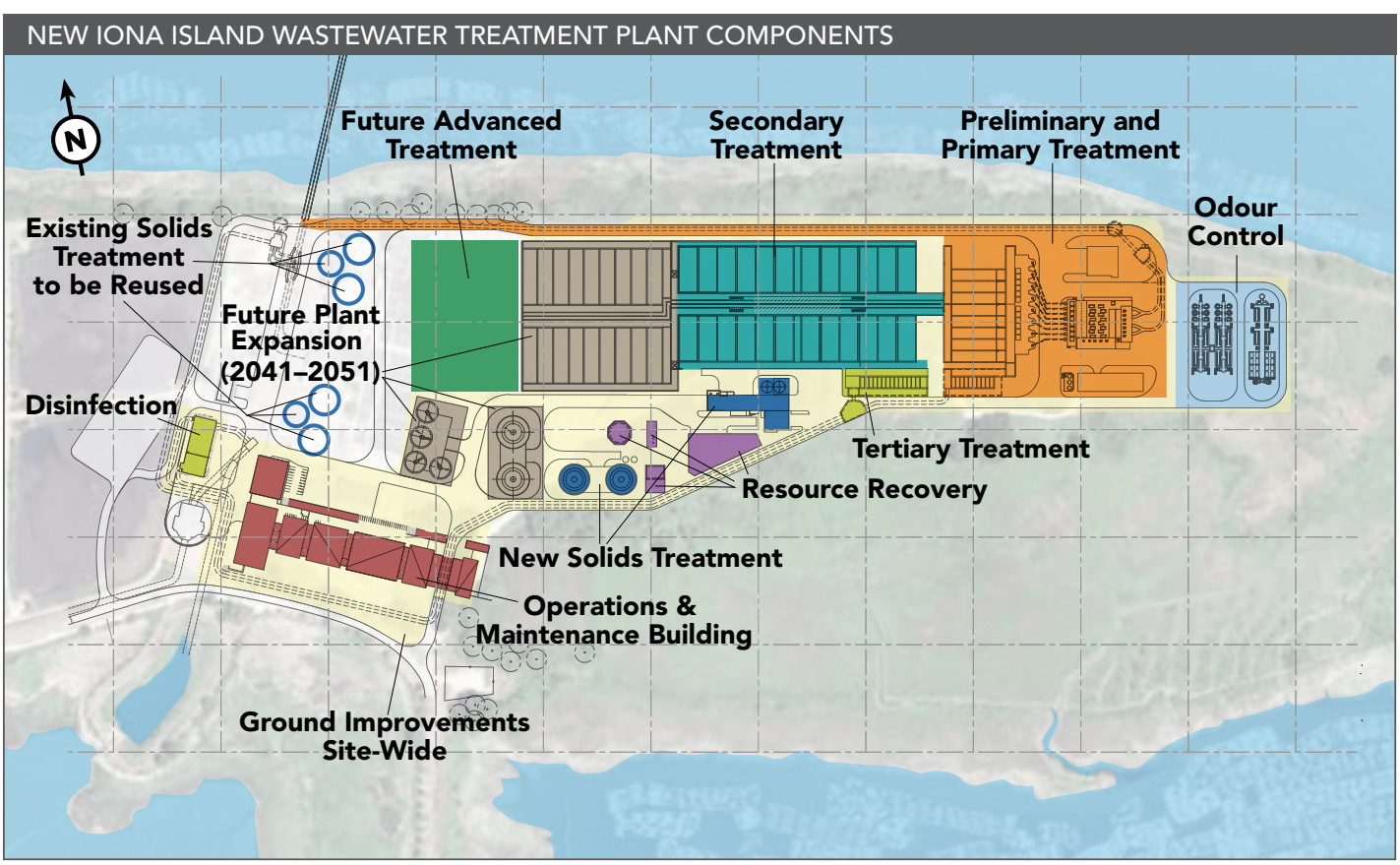
Wastewater treatment is the process of removing contaminants and pollutants from wastewater, ensuring it is safe for release into the environment. This helps to mitigate environmental and public health risks associated with untreated wastewater.

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.

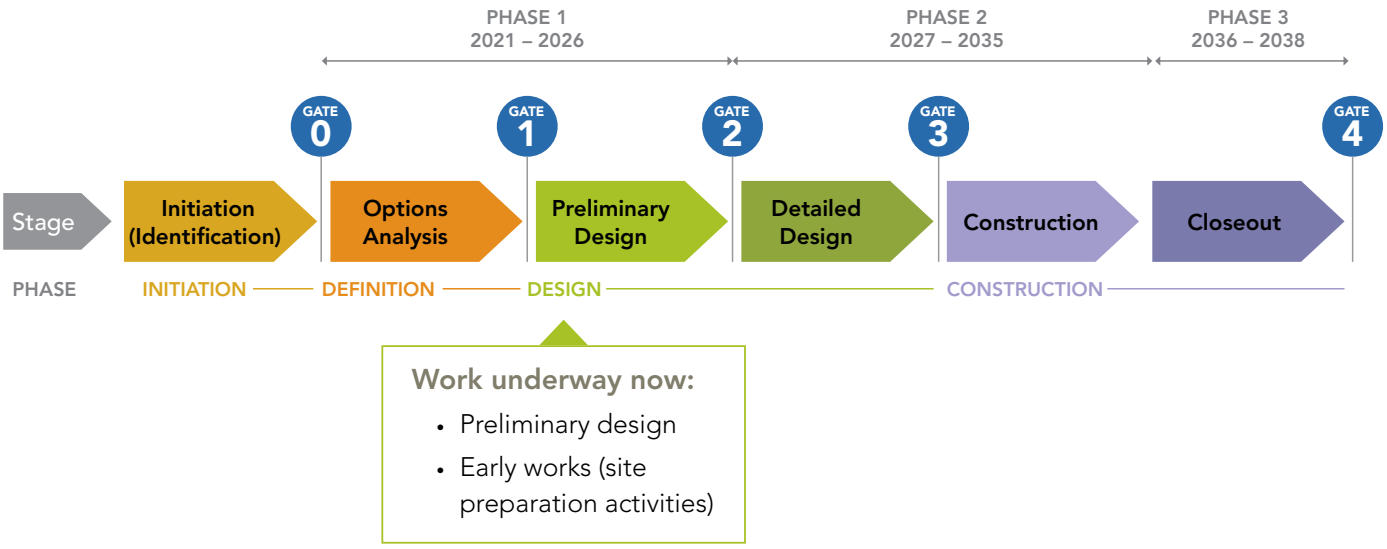
We have heard that xʷməθkʷəy̓əm (Musqueam) priorities include:

- 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 2027, 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.

This panel was updated on November 30, 2023 to reflect the preliminary design phase timeline of the Iona Island Wastewater Treatment Plant.

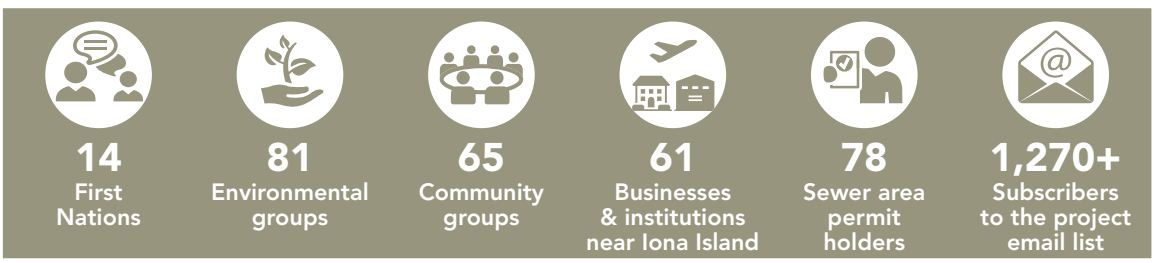
Community Engagement

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**

- Air quality
- Light
- Timing of construction
- Impacts on human health
- Noise
- Marine safety
- Dust
- Odours
- Environmental impacts

Environmental and Social Benefits

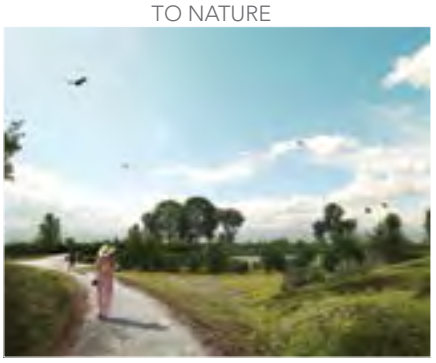
Future Advancement Treatment: Can increase the removal of contaminants of emerging concern (CECs) such as pharmaceuticals and micro-plastics.

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 XʷMƏƟKʷƏẎƏM (MUSQUEAM)

RESTORE ESTUARY HEALTH AND FISH HABITAT

ENHANCE TERRESTRIAL AND FRESHWATER HABITATS

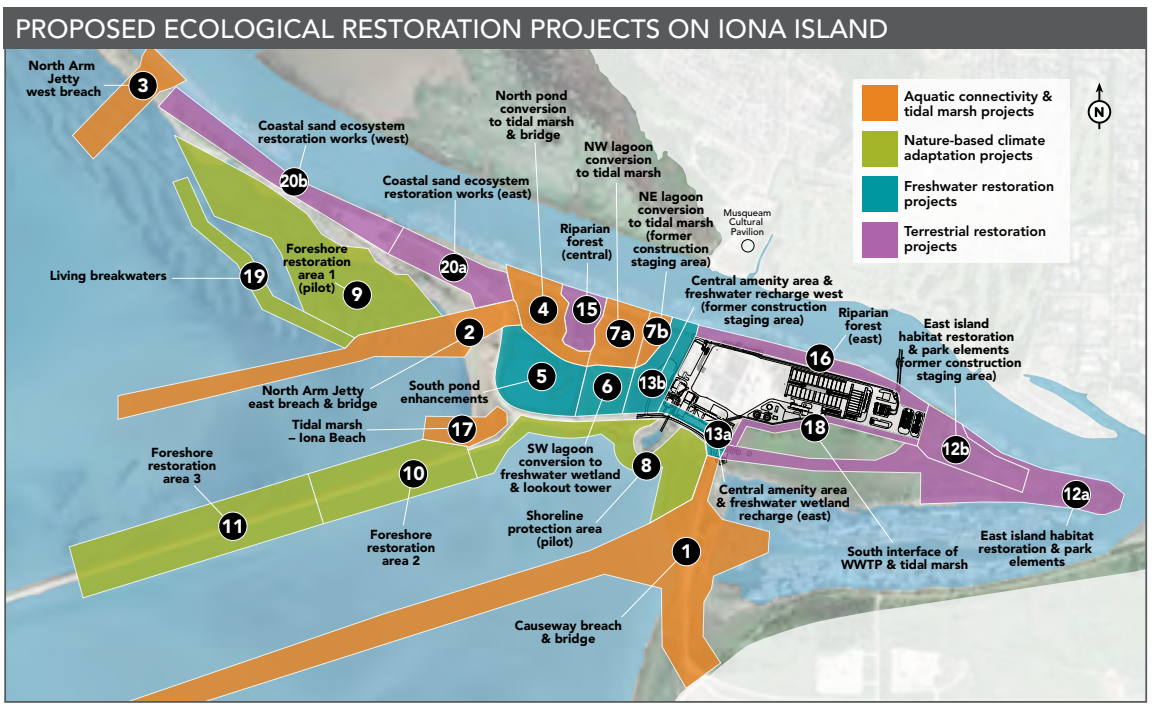
IMPROVE WATER QUALITY

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:

- xʷməθkʷəy̓əm (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 IIWWTP 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
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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.

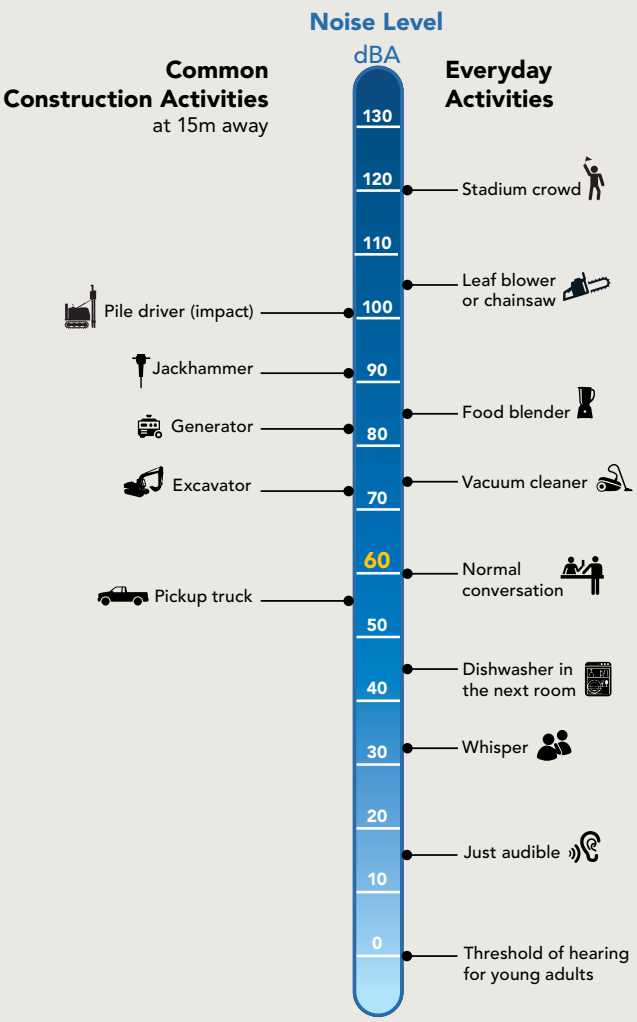
What We Heard: Reduce Noise

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

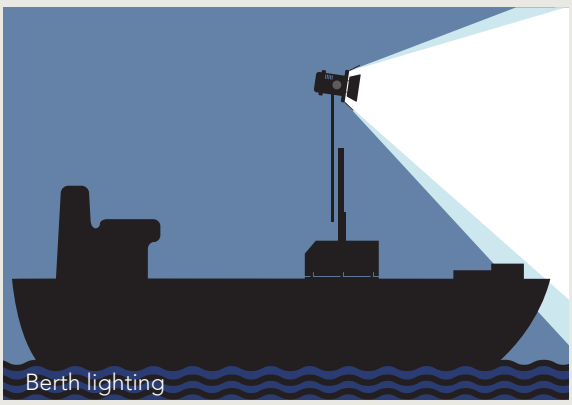
Metro Vancouver implementing dust control measures

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



Berth lighting

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

Recreational boaters in Fraser River

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

Great Blue Heron photo by Mike Baird

Aerial of Iona Island and Estuary (photo by Emma Webster)

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 **metrovancouver.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@metrovancouver.org
- **Phone:** 604-432-6610
- **Website:** metrovancouver.org/iona

TOGETHER
WE MAKE OUR REGION
STRONG