GREATER VANCOUVER WATER DISTRICT (GVWD)
BOARD OF DIRECTORS

BOARD MEETING
Friday, November 29, 2024
9:00 am
28th Floor Boardroom, 4515 Central Boulevard, Burnaby, British Columbia
Webstream available at https://metrovancouver.org

Membership and Votes

A G E N D A[1]

A. ADOPTION OF THE AGENDA

1. November 29, 2024 Meeting Agenda
That the GVWD Board adopt the agenda for its meeting scheduled for November 29, 2024 as circulated.

B. ADOPTION OF THE MINUTES

1. November 1, 2024 Meeting Minutes *pg. 3*
That the GVWD Board adopt the minutes for its meeting held November 1, 2024 as circulated.

C. DELEGATIONS

D. INVITED PRESENTATIONS

E. CONSENT AGENDA
Note: Directors may adopt in one motion all recommendations appearing on the Consent Agenda or, prior to the vote, request that an item be removed from the Consent Agenda for debate or discussion, voting in opposition to a recommendation, or declaring a conflict of interest with an item.

1. WATER COMMITTEE REPORTS

1.1 Update on the Development of a Construction Impact Mitigation Framework *pg. 9*
That the GVWD Board receive for information the report dated October 18, 2024, titled "Update on the Development of a Construction Impact Mitigation Framework".

[1] *Note: Recommendation is shown under each item, where applicable. All Directors vote unless otherwise noted.*

F. ITEMS REMOVED FROM THE CONSENT AGENDA

G. REPORTS NOT INCLUDED IN CONSENT AGENDA

H. MOTIONS FOR WHICH NOTICE HAS BEEN GIVEN

I. OTHER BUSINESS

1. GVWD Board Committee Information Items and Delegation Summaries *pg. 65*

J. RESOLUTION TO CLOSE MEETING

Note: The Board 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.

K. ADJOURNMENT

That the GVWD Board adjourn its meeting of November 29, 2024.

GREATER VANCOUVER WATER DISTRICT
BOARD OF DIRECTORS

Minutes of the Regular Meeting of the Greater Vancouver Water District (GVWD) Board of Directors held at 10:19 am on Friday, November 1, 2024, in the 28th Floor Boardroom, 4515 Central Boulevard, Burnaby, British Columbia.

MEMBERS PRESENT:

Burnaby, Chair, Director Mike Hurley
Anmore, Vice Chair, Director John McEwen
Belcarra, Director Jamie Ross
Burnaby, Director Pietro Calendino
Burnaby, Director Sav Dhaliwal
Coquitlam, Director Craig Hodge
Coquitlam, Director Teri Towner
Delta, Director Rod Binder*
Delta, Director Dylan Kruger
Electoral Area A, Director Jen McCutcheon
Langley City, Director Paul Albrecht
Langley Township, Director Eric Woodward
Langley Township, Alternate Director Tim Baillie for Director Steve Ferguson
Maple Ridge, Director Dan Ruimy
New Westminster, Director Patrick Johnstone
North Vancouver City, Director Linda Buchanan
North Vancouver District, Director Lisa Muri
Pitt Meadows, Director Nicole MacDonald
Port Coquitlam, Director Brad West*
Port Moody, Director Meghan Lahti*
Richmond, Director Chak Au
Richmond, Director Malcolm Brodie
Richmond, Director Bill McNulty
Surrey, Director Harry Bains
Surrey, Director Doug Elford
Surrey, Director Gordon Hepner*
Surrey, Director Pardeep Kooner
Surrey, Director Brenda Locke
Surrey, Director Rob Stutt
Vancouver, Director Rebecca Bligh
Vancouver, Director Lisa Dominato
Vancouver, Director Sarah Kirby-Yung
Vancouver, Director Mike Klassen
Vancouver, Director Peter Meiszner
Vancouver, Alternate Director Brian Montague for Director Ken Sim
Vancouver, Director Lenny Zhou
West Vancouver, Alternate Director Sharon Thompson for Director Mark Sager
Commissioner Jerry W. Dobrovolny (Non-voting member)

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

MEMBERS ABSENT:

sc̓əwaθən məsteyəxʷ (Tsawwassen First Nation), Director Laura Cassidy

STAFF PRESENT:

Dorothy Shermer, Corporate Officer
Rapinder Khaira, Legislative Services Coordinator, Board and Information Services

A. ADOPTION OF THE AGENDA

1. November 1, 2024 Meeting Agenda

It was MOVED and SECONDED
That the GVWD Board adopt the agenda for its meeting scheduled for November 1, 2024 as circulated.

CARRIED

B. ADOPTION OF THE MINUTES

1. September 27, 2024 Meeting Minutes

It was MOVED and SECONDED
That the GVWD Board adopt the minutes for its meeting held September 27, 2024 as circulated.

CARRIED

2. October 16, 2024 Special Joint Meeting Minutes

It was MOVED and SECONDED
That the GVWD Board adopt the special joint minutes for its meeting held October 16, 2024 as circulated.

CARRIED

C. DELEGATIONS

No items presented.

D. INVITED PRESENTATIONS

No items presented.

E. CONSENT AGENDA

It was MOVED and SECONDED
That the GVWD Board adopt the recommendations presented in the following items as presented in the November 1, 2024 GVWD Consent Agenda:

1.1 Drinking Water Management Plan Update and Report on Phase 1 Engagement
1.2 Award of RFP 24-006A Component 1 – Program Management Services for the Coquitlam Lake Water Supply Project (CLWSP) and Consulting Engineering Services for the Treatment Pilot Testing Program
1.3 Award of RFP 24-006B Component 2 – Program Management and Consulting Engineering Services for Coquitlam Main No. 4 Project
2.1 Jericho Reservoir Phase 2 – Dissolution of Water Supply Agreements

CARRIED

The items and recommendations referred to above are as follows:

1.1 Drinking Water Management Plan Update and Report on Phase 1 Engagement

Report dated September 16, 2024, from Vanessa Anthony, Director, Policy, Planning, and Analysis, Water Services, and Lena Zordan, Community Engagement Program Manager, External Relations, providing the GVWD Board with a progress update on the *Drinking Water Management Plan,* and the results of Phase 1 engagement on the draft guiding principles and goals.

Recommendation

That the GVWD Board receive for information the report dated September 16, 2024, titled "Drinking Water Management Plan Update and Report on Phase 1 Engagement."

Adopted on Consent

1.2 Award of RFP 24-006A Component 1 – Program Management Services for the Coquitlam Lake Water Supply Project (CLWSP) and Consulting Engineering Services for the Treatment Pilot Testing Program

Report dated September 10, 2024, from George Kavouras, Director, Procurement, Procurement and Real Estate Services, and Bob Cheng, Director, Major Projects, Project Delivery, providing the GVWD Board with an opportunity to approve the award of RFP 24-006A Component 1 – Program Management Services for the Coquitlam Lake Water Supply Projects and Consulting Engineering Services for the Treatment Pilot Testing Program, in the amount of up to $74,512,561 (exclusive of taxes) to Jacobs Consultancy Canada Inc., for an initial term of six years, with options for two additional two-year terms.

Recommendation

That the GVWD Board:

a) approve the award of RFP 24-006A Component 1 – Program Management Services for the CLWSP and Consulting Engineering Services for the Treatment Pilot Testing Program, in the amount of up to $74,512,561 (exclusive of taxes) to Jacobs Consultancy Canada Inc., for an initial term of six years, with options for two additional two-year terms, subject to final review by the Commissioner; and

b) authorize the General Manager, Procurement and Real Estate to execute the required documentation once the General Manager, Procurement and Real Estate is satisfied that the award should proceed.

Adopted on Consent

1.3 Award of RFP 24-006B Component 2 – Program Management and Consulting Engineering Services for Coquitlam Main No. 4 Project

Report dated September 9, 2024, from George Kavouras, Director, Procurement, Procurement and Real Estate Services, and Bob Cheng, Director, Major Projects, Project Delivery, providing the GVWD Board with an opportunity to approve the award of RFP 24-006B Component 2 – Program Management and Consulting Engineering Services for Coquitlam Main No. 4 Project, in the amount of up to $17,424,401 (exclusive of taxes) to CIMA Canada Inc., for an initial term of five years, with an option for one additional four-year term.

Recommendation

That the GVWD Board:

a) approve the award of RFP 24-006B Component 2 – Program Management and Consulting Engineering Services for Coquitlam Main No. 4 Project, in the amount of up to $17,424,401 (exclusive of taxes) to CIMA Canada Inc., for an initial term of five years, with an option for one additional four-year term, subject to final review by the Commissioner; and

b) authorize the General Manager, Procurement and Real Estate to execute the required documentation once the General Manager, Procurement and Real Estate is satisfied that the award should proceed.

Adopted on Consent

2.1 Jericho Reservoir Phase 2 – Dissolution of Water Supply Agreements

Report dated September 30, 2024, from Sonu Kailley, Director, Financial Planning, Financial Services, providing the GVWD Board with an opportunity to approve the dissolution of the Water Supply Agreements between the GVWD, Township of Langley, and City of Surrey for Phase 2 of the Jericho Reservoir and authorize the refund of payments made in relation to Jericho Reservoir Phase 2 Project.

Recommendation

That the GVWD Board approve the dissolution of the Water Supply Agreements between the GVWD, Township of Langley, and City of Surrey for Phase 2 of the Jericho Reservoir and authorize the refund of payments made in relation to Jericho Reservoir Phase 2 Project.

Adopted on Consent

F. ITEMS REMOVED FROM THE CONSENT AGENDA

No items presented.

G. REPORTS NOT INCLUDED IN CONSENT AGENDA

1.1 GVWD 2025 Budget and 2025 – 2029 Financial Plan

Report dated October 25, 2024, from Harji Varn, Chief Financial Officer/General Manager, Financial Services, providing the GVWD Board with an opportunity to consider and approve the 2025 GVWD Annual Budget for Water Services and endorse the GVWD 2025 – 2029 Financial Plan.

It was MOVED and SECONDED

That the GVWD Board:

a) approve the 2025 Annual Budget and endorse the 2025 – 2029 Financial Plan as shown in Attachment 1 of the report dated October 25, 2024, titled "GVWD 2025 Budget and 2025 – 2029 Financial Plan", in the following schedules:
   - Revenue and Expenditure Summary
   - Water Services
   - Capital Portfolio – Water Services

b) approve the 2025 Reserve Applications as shown in Attachment 2 of the report dated October 25, 2024, titled "GVWD 2025 Budget and 2025 – 2029 Financial Plan"; and

c) set the Water Rate for 2025 at:
   $1.4214 per cubic metre for June through September; and
   $0.7119 per cubic metre for January through May and October through December.

CARRIED

Director Buchanan voted against

H. MOTIONS FOR WHICH NOTICE HAS BEEN GIVEN

No items presented.

I. OTHER BUSINESS

No items presented.

J. RESOLUTION TO CLOSE MEETING

It was MOVED and SECONDED

That the GVWD Board close its meeting scheduled for November 1, 2024 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:

(g) litigation or potential litigation affecting the municipality.

CARRIED

K. ADJOURNMENT

It was MOVED and SECONDED
That the GVWD Board adjourn its meeting of November 1, 2024.

CARRIED
(Time: 10:21 am)

CERTIFIED CORRECT

Dorothy Shermer, Corporate Officer

Mike Hurley, Chair

71601128

To: Water Committee

From: Jennifer Crosby, Director - Project Management Office, Project Delivery

Date: October 18, 2024 Meeting Date: November 6, 2024

Subject: **Update on the Development of a Construction Impact Mitigation Framework**

RECOMMENDATION

That the GVWD/GVS&DD Boards receive for information the report dated October 18, 2024, titled "Update on the Development of a Construction Impact Mitigation Framework".

EXECUTIVE SUMMARY

Metro Vancouver staff continue to work with member jurisdictions to review practices to improve how member jurisdictions and Metro Vancouver staff coordinate and liaise on regional infrastructure projects in member jurisdictions.

Construction impacts of Metro Vancouver utility capital projects on member jurisdictions are currently mitigated through case-by-case negotiations directly between Metro Vancouver staff and the member jurisdiction where the project is located. This results in varied levels of mitigation as well as unpredictable and often significant impacts on project scope, cost and schedule.

The Construction Impact Mitigation Framework (the Framework) has been developed as a transparent, consistent, equitable, and fiscally responsible approach to mitigating impacts on member jurisdictions (members) during construction of region-serving utility infrastructure. The Framework enables collaboration between Metro Vancouver staff and members by following a standard approach to assessing and mitigating construction-related impacts. This will support discussions with members in seeking mutually agreeable solutions and reduce risks and uncertainty for project delivery.

PURPOSE

To update the GVWD/GVS&DD Boards on the development of a Construction Impact Mitigation Framework for member jurisdictions as related to Metro Vancouver utility capital project construction.

BACKGROUND

Each year Metro Vancouver delivers utility capital projects to ensure that the region has reliable access to high-quality drinking water, safe wastewater removal and treatment, and waste disposal and recycling. The purpose of delivering these services on behalf of the members is to provide infrastructure at a scale that is more efficient than if each jurisdiction delivered the services separately. As a result, the services offer efficiencies that benefit all members. Members participate in the core services based on the understanding that not only will the benefits of the service be equitably shared amongst participants, but the impacts and costs of delivering those services are also equitably shared.

In 2018, the Metro Vancouver Board rescinded the existing Capital Projects Policy and recommended that Metro Vancouver staff work with advisory committees to develop a capital projects framework, which would capture the approach and process of how Metro Vancouver utility capital projects are planned, managed, and communicated. Metro Vancouver initially engaged with member jurisdictions through a Regional Engineers Advisory Committee (REAC) working group. The working group recommended developing tools to improve the process and communication between Metro Vancouver and member jurisdictions, which include:

Tool Name	Development Status
Utility Capital Projects Guide	Complete
Project Coordination Reference Guide	Complete
Noise and Vibration Guide	Complete
Social Impact Assessment Guide	Complete
Construction Impact Mitigation Framework	Complete

An update on the development of these tools was provided to this committee in a report dated June 21, 2023 (see Attachment 3). The next section provides a further update on the development of the Framework including the Impact Assessment Tool, Mitigation Library and supporting materials.

UPDATE ON THE DEVELOPMENT OF THE CONSTRUCTION IMPACT MITIGATION FRAMEWORK

The development of the Construction Impact Mitigation Framework has been completed, leveraging feedback from Regional Engineers Advisory Committee, Regional Administrators Advisory Committee (RAAC) and Metro Vancouver staff and following the guiding principles of equitability, transparency, consistency, and fiscal responsibility.

The objectives of the Construction Impact Mitigation Framework are:

- To clarify expectations for how Metro Vancouver (MV) and member jurisdictions work together to deliver regional infrastructure.
- To standardize the process for assessing and mitigating the impact of utility capital projects on member jurisdictions.
- To reduce risk and uncertainty related to the delivery of Metro Vancouver utility capital projects, which in turn reduces impacts on costs and schedules.

The Construction Impact Mitigation Framework is comprised of a guide for users, a permitting fact sheet, a template to facilitate use of the Framework and two core deliverables used to assess impacts and plan a construction impact mitigation strategy for a utility capital project (see Attachments 1 and 2):

1. An Impact Assessment Tool that categorizes construction project impacts, and defines impact levels based on high, medium, and low impact; and
2. An Impact Mitigation Library that provides impact-specific mitigation measures that can be used to minimize, offset, or avoid impacts.

Feedback from member jurisdictions on the draft Framework was collected through three rounds of engagement with REAC and RAAC as well as through a workshop and Open House events during MV Conference Day in 2023 and 2024 and an online feedback survey. Overall positive feedback was

received including appreciation for the development of the Framework and support for a consistent, transparent, equitable and fiscally responsible approach to mitigating impacts to all members.

Below is a summary of the changes made to the Framework based on member feedback:

- Clarified impacts to non-MV utilities to include roadway infrastructure including reference to MV Board Policy *Pavement Restoration for Sewer and Water Main Installations*.
- Expanded traffic mitigation examples to include intersection modification, signal changes, enhanced intersection control.
- Revised access mitigation examples to reference access for emergency services and waste/ recycling collection.
- Revised bike trail/routes impact category to include pedestrian trails/ routes.

Based on feedback received, the following language was incorporated into the Framework guide:

- The Framework provides a clear process for MV and members to follow to enable expedited decision-making.
- The guide outlines the process whereby it is the collective suite of impacts and mitigations for the given projects; it is not necessary for each impact and mitigation intensity to match.
- Each MV utility capital project has an assigned liaison.
- The Framework outlines a collaborative process to avoid, minimize or mitigate construction impacts which in some cases will result in a "build back better" approach.
- The Framework guide speaks to monitoring quality and effectiveness of the impact mitigation measures during construction. MV is to refine mitigation measures if initial plans are insufficient, or when there is change in construction schedule or scope.
- Early collaboration with member jurisdictions on MV utility capital projects is enabled through various activities throughout the project lifecycle, as outlined in the Guide to Metro Vancouver Utility Capital Projects for Member Jurisdictions available on the MV internet site.

The feedback summarized in the table below is either out of scope for the Framework or is addressed elsewhere.

Feedback	**Response**
Broaden scope to include impacts or opportunities related to municipal planned work such as streetscape and greenway projects.	MV engages annually on the capital program with members at municipal coordination meetings which enables coordination of schedules. MV works with member jurisdictions to align restoration efforts with municipal plans for streetscapes and greenways. MV considers incorporation of member jurisdiction requested and funded scope into MV utility capital projects through Coordinated Works Agreements where appropriate.

Feedback	Response
Assessing and managing cumulative impacts of multiple MV projects on a member jurisdiction.	The Framework is intended to support individual projects. Accounting for impacts across a portfolio of projects to a member jurisdiction is out of scope for this initial version of the Framework.
Provision of funding for facilitating, approving and monitoring member permitting processes.	Permit fees are intended to cover these costs. Members have the option to delegate BC Building Code oversight to a qualified professional. In the guide to the Framework, it is noted that for large projects, custom agreements can be developed to formalize submission requirements, approvals, fees, timelines and resource commitments.
Consistent, transparent and equitable approach for quantifying land use impacts related to: • Concerns related to compensation for hosting infrastructure on land not designated for profitable development e.g. parkland • Concerns for the unfair burden of hosting multiple MV infrastructure projects	MV is considering establishing principles for assessing above-ground loss of use methodology. Currently, compensation may be payable if the land in question is investment land or if they are required for future municipal development lands. If compensation is payable, Metro Vancouver will compensate member jurisdictions for acquisition of land rights following the guiding principles of consistency, equity, transparency, and fiscal responsibility. In cases where Metro Vancouver requires land rights from members for a project, the tax payer should not be expected to pay for those lands which are already in the public realm, and where lands will be returned to the same general use following the project's completion.
Weighting criteria for the impact categories.	The Framework is intended to be a tool to enable collaboration between MV and members. Due to the variability in impacts felt by members for each project scope and location, no weighting criteria has been included at this time.
Compensation in lieu of mitigations(s) or transferring responsibility for impact mitigation (e.g. site restoration) to member jurisdictions.	MV is responsible for mitigating construction impacts due to utility capital projects. Requests for compensation in lieu of mitigations(s) will be handled on a case-by-case basis.

The Framework is expected to be refined over time as projects are completed and mitigations are monitored and documented.

ALTERNATIVES
This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

The development of standardized, region-wide approach to mitigation of impacts for projects undertaken in member jurisdictions will help to manage project costs, maintain project schedules, mitigate scope creep and change orders on construction projects, as well as ensure a consistent, transparent and equitable approach across all member jurisdictions.

CONCLUSION

Metro Vancouver is committed to the continuous improvement of its processes to deliver region-serving utility infrastructure projects efficiently and cost effectively, and to mitigate the construction impacts of these projects on member jurisdictions.

Metro Vancouver has liaised with the REAC and the RAAC to develop the Construction Impact Mitigation Framework based on the guiding principles of consistency, equity, transparency and fiscal responsibility. The Framework enables collaboration between Metro Vancouver staff and members by following a standard approach to assessing and mitigating construction-related impacts. This will support discussions with members in seeking mutually agreeable solutions and reduce risks and uncertainty for project scope, schedule and cost.

The Framework is being presented to Water Committee and the GVWD/GVS&DD Boards in November followed by a launch to Metro Vancouver and member staff in the first quarter of 2025.

ATTACHMENTS

1. MV Utility Capital Projects - Construction Impact Mitigation Framework Overview.
2. Construction Impact Mitigation Framework Guide.
3. Guide to Metro Vancouver Utility Capital Projects for Member Jurisdictions and Impact Mitigation Framework, report dated June 21, 2023.
4. MV Utility Capital Projects – Construction Impact Mitigation Framework - Presentation

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MV Utility Capital Projects - Construction Impact Mitigation Framework

The Construction Impact Mitigation Framework (the framework) is a transparent, consistent, equitable, and fiscally responsible approach to mitigating impacts on member jurisdictions (members) during construction of region-serving utility infrastructure. The framework supports the delivery of MV utility capital projects and enhances coordination and communication with members and member permitting processes.

The framework enables collaboration between MV staff and members by following a standard approach to assessing and mitigating construction-related impacts. This will support discussions with members in seeking mutually agreeable solutions and reduce risks and uncertainty for project delivery. This framework increases the ability for projects to stay on time and on schedule and will enable improved delivery of capital projects across the region.

The Framework will achieve this by:

- Identifying categories of impacts experienced by members
- Establishing common and consistent language
- Providing examples of mitigation measures
- Providing a template to document and refine anticipated impacts and planned mitigation measures in an iterative manner
- Enabling the creation of a common database of impacts and mitigation measures

To support the development of the framework, Metro Vancouver has regularly liaised with the Regional Engineers Advisory Committee (REAC) and the Regional Administrators Advisory Committee (RAAC) and leveraged feedback from REAC, RAAC and Metro Vancouver staff to develop the framework.

Structure of the Framework

The framework consists of **two core deliverables**:

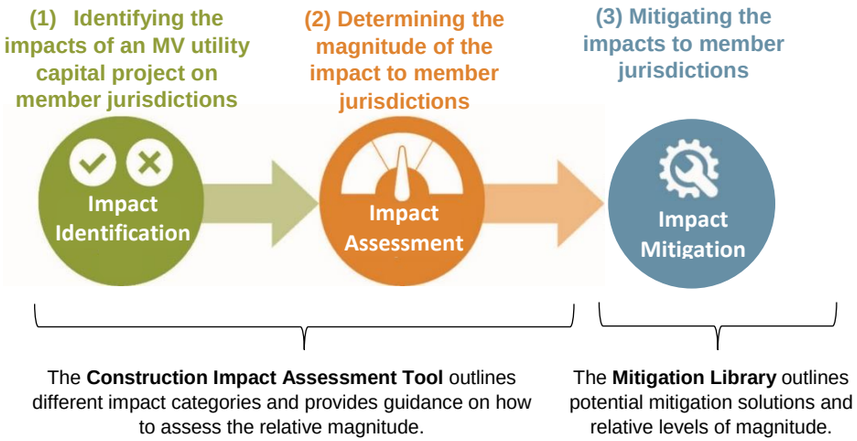
- A **Construction Impact Assessment Tool** containing a list of potential construction impacts and criteria for classifying each impact as either low, medium or high.
- A **Mitigation Library** that provides impact-specific mitigation measures that can be used to avoid, minimize or offset impacts.

Supporting deliverables for implementation of the framework include:

- **Framework Guide**: Introduction to the framework and guidance on implementation.
- **Permitting Fact Sheet**: Information on permitting requirements for Metro Vancouver utility capital projects in member jurisdictions.
- **Standardized template**: to facilitate use of the framework and document impacts and mitigation measures.

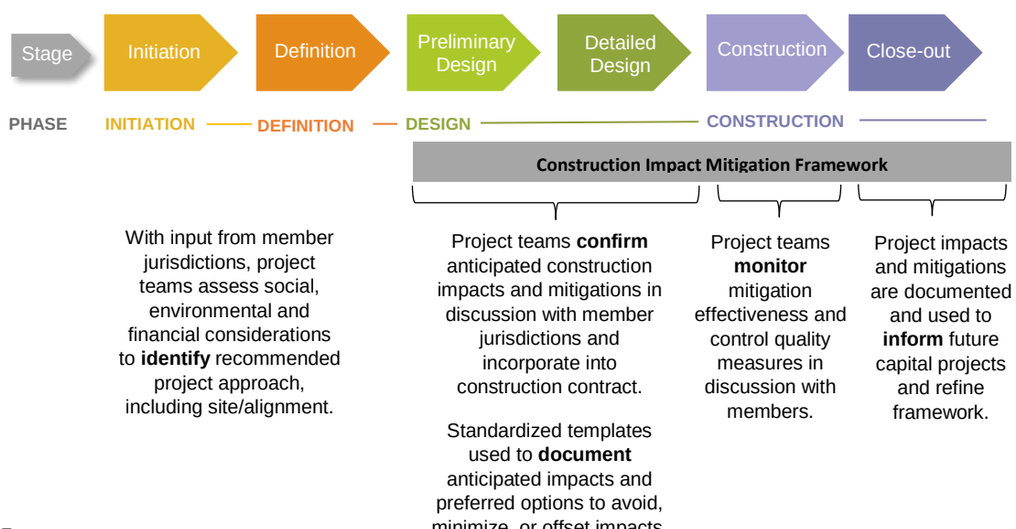
OVERVIEW

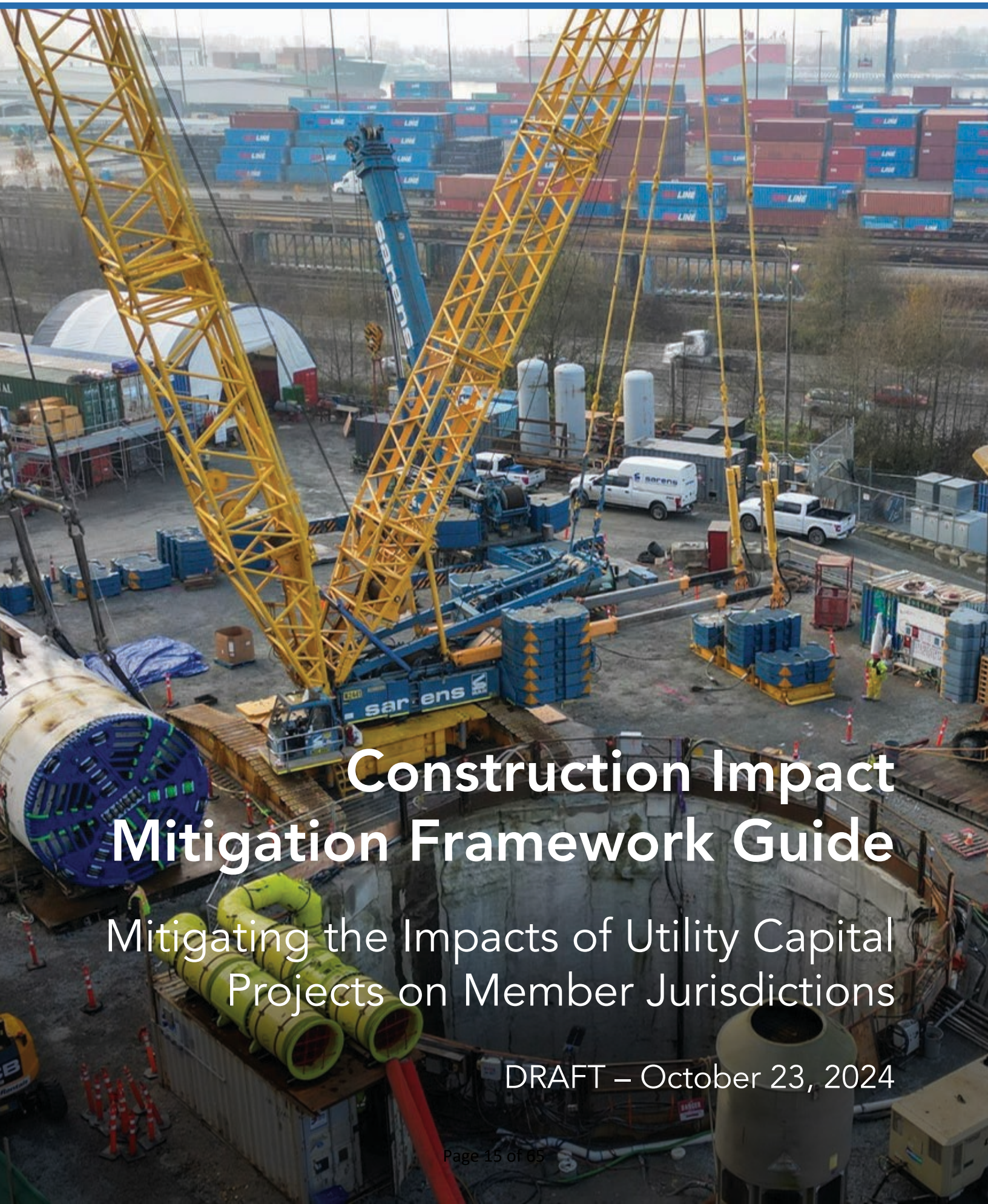
A 3-step **approach** using the core deliverables is the basis for the framework:



How will the Framework be Used?

Metro Vancouver project teams undertaking Preliminary Design and Detailed Design stages will utilize this Construction Impact Mitigation Framework in collaboration with members to identify, assess and document impacts and planned mitigation solutions that will be implemented during the construction stage and monitored for quality and effectiveness.





Construction Impact Mitigation Framework Guide

Mitigating the Impacts of Utility Capital Projects on Member Jurisdictions

DRAFT – October 23, 2024

Metro Vancouver acknowledges that the region's residents live, work, and learn on the shared territories of many Indigenous peoples, including 10 local First Nations: q̓i̓c̓əy̓ (Katzie), q̓ʷɑːn̓ƛ̓ən̓ (Kwantlen), kʷikʷəƛ̓əm (Kwikwetlem), máthxwi (Matsqui), xʷməθkʷəy̓əm (Musqueam), qiqéyt (Qayqayt), se'mya'me (Semiahmoo), Sḵwx̱wú7mesh Úxwumixw (Squamish), scəẃaθən məsteyəxʷ (Tsawwassen) and səlilwətaɬ (Tsleil-Waututh).

Metro Vancouver respects the diverse and distinct histories, languages, and cultures of First Nations, Métis, and Inuit, which collectively enrich our lives and the region.

Construction Impact Mitigation Framework Guide
Mitigating the Impacts of Utility Capital Projects on Member Jurisdictions

DRAFT – October 23, 2024

Developed for Metro Vancouver by:

KPMG

For more information or to provide feedback please contact Metro Vancouver Information Centre.
Phone: 604-432-6200
Email: icenter@metrovancouver.org

Metrotower III, 4515 Central Boulevard, Burnaby, BC, V5H 0C6
metrovancouver.org

Cover: Annacis Water Supply Tunnel construction

Table of Contents

Executive Summary

The Construction Impact Mitigation Framework is a transparent, consistent, equitable, and fiscally responsible approach to mitigating impacts on member jurisdictions during construction of region-serving utility infrastructure. The framework supports the delivery of Metro Vancouver utility capital projects and enhances coordination and communication with members and member permitting processes.

The framework enables collaboration between Metro Vancouver staff and members by following a standard approach to assessing and mitigating construction-related impacts. This will support discussions with members in seeking mutually agreeable solutions and reduce risks and uncertainty for project delivery.

Annacis Water Supply Tunnel construction

Central Park Water Main construction

Introduction

This guide refers to the Metro Vancouver utility capital projects for water, liquid waste, and solid waste. Metro Vancouver utility capital projects include construction of new infrastructure as well as the expansion or replacement of existing infrastructure.

Metro Vancouver plans and delivers utility capital projects to meet the needs of a growing population, maintain, upgrade and replace aging infrastructure, and increase the region's resilience to the impacts of climate change, seismic events, wildfires, power failures, and natural disasters. These projects are required to maintain the quality and reliability of the region's drinking water, wastewater, and solid waste management systems and continue to protect public health and the environment. Utility capital projects can be site-specific, such as a wastewater treatment plant, or a linear alignment, such as a water main.

Metro Vancouver delivers these services on behalf of our members to provide infrastructure at a scale that is more efficient than if each jurisdiction delivered the services separately. As a result, the services offer efficiencies that benefit all members. Members participate in these services based on the understanding that not only will the benefits of the services be shared amongst participants, but the impacts and costs of delivering those services are also shared.

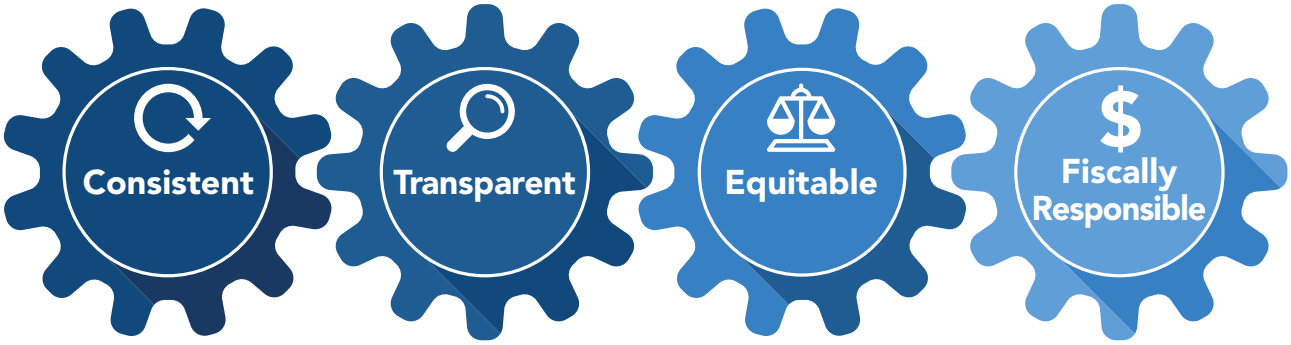
Metro Vancouver's Member Jurisdictions

- Village of Anmore
- Village of Belcarra
- Bowen Island Municipality
- City of Burnaby
- City of Coquitlam
- City of Delta
- Electoral Area A
- City of Langley
- Township of Langley
- Village of Lions Bay
- City of Maple Ridge
- City of New Westminster
- City of North Vancouver
- District of North Vancouver
- City of Pitt Meadows
- City of Port Coquitlam
- City of Port Moody
- City of Richmond
- City of Surrey
- Tsawwassen First Nation
- City of Vancouver
- District of West Vancouver
- City of White Rock

Purpose of the Construction Impact Mitigation Framework

The Construction Impact Mitigation Framework is intended to provide guidance for Metro Vancouver project teams and member staff for assessing construction impacts and applying mitigations to regional capital utility projects by:

- Establishing a **transparent process**;
- Maintaining a **consistent approach** for all capital utility projects regardless of location, size or complexity;
- Providing an **equitable framework** with structured but flexible tools; and
- Being **fiscally responsible** to maintain project schedules and budgets through proactive integration of mitigations.



The framework supports the delivery of utility capital projects, enhances coordination and communication with members and supports member permitting processes (see **Appendix A**). It also supports discussions with members in seeking mutually agreeable solutions to mitigate construction impacts and reduces risk and uncertainty for capital project delivery, which in turn reduces impacts to project costs and schedules. The framework will achieve this by:

- Identifying categories of impacts experienced by members (see **Appendix B**).
- Establishing common and consistent language.
- Providing examples of mitigation measures (see **Appendix C**).
- Providing a template for Metro Vancouver to document and refine anticipated impacts and planned mitigation measures in an iterative manner (see **Appendix D**).
- Enabling the creation of a common database of impacts and mitigation measures.

Collaboration with Members

This framework has been developed to better support collaboration with members for construction impact assessment and mitigation options by simplifying the process of reaching consensus, while providing flexibility to apply mitigations appropriate for each utility capital project.

Metro Vancouver project teams should use judgement for the scale and complexity of the project in assessing impacts and mitigations, and on seeking alignment with members. In some cases, exceptional circumstances may lead to a mitigation beyond common practice. Depending on the cost and complexity, some mitigations may result in reviews and approvals outside the project team, including possible Board approval.

Metro Vancouver may also incorporate member-requested and funded work into a utility capital project through a Coordinated Works Agreement.

The intent of the framework is to consider the combined project impacts and mitigations so the combined suite of mitigation measures balances the project's construction impacts.

Benefits to Metro Vancouver and Members

This framework has inherent benefits to Metro Vancouver and members. By establishing a common approach to impacts and mitigations, and clarifying the process to develop mutually agreeable solutions, project risks and uncertainty will be reduced overall. This approach will increase the ability for projects to stay on time and on schedule, improving the stability and predictability of utility rates, and will bring overall transparency to capital project delivery across the region.

Global Mitigations

This framework is focused on project-specific impacts and mitigations with the understanding that several 'global' mitigations will be integrated into any project regardless of size, scale, complexity, or location. These global mitigations include compliance with regulatory requirements and professional responsibilities, and are intended to minimize disturbance and align with best practices.

The examples of impacts and mitigations provided in the framework are a starting point. As new tools, information, and approaches on construction impacts and mitigations become known, Metro Vancouver will update this framework to reflect those practices.

Examples of global mitigation measures to be applied to all projects include:

- Compliance with environmental regulations
- Adherence to required permits, licensing, and approvals
- A Metro Vancouver point-of-contact to liaise with member jurisdictions in the respective project area
- Engaging with the public through community meetings, surveys, signage and outreach events to raise awareness about the upcoming construction project
- Refining the mitigation strategy if mitigations are insufficient, or if there is change in construction schedule or scope

Framework Exclusions

There are some items that are not addressed in the framework. These are outlined below with the rationale for each exclusion.

Exclusion	Rationale
Operational, maintenance and emergency response impacts associated with Metro Vancouver infrastructure in member jurisdictions	Framework addresses construction related impacts only
Impacts associated with perceived or realized loss of opportunity (e.g., taxes, amenity cost charges) related to private lands acquired by Metro Vancouver for the project	GVSDD and GVWD are exempted from paying property taxes* Amenity cost charges are not applicable to Metro Vancouver utility capital projects
Provision of net new community amenities (e.g., trails, playgrounds, public art)	Mandate of Metro Vancouver utility capital projects are to provide regional services. Requests for provision of net new community amenities in lieu of mitigation measures will be handled on a case-by-case basis
Impacts on Metro Vancouver projects due to member decisions/actions	Framework is focused on mitigating impacts of utility capital projects on members
Cumulative impacts of Metro Vancouver utility capital projects	Framework is for use on individual utility capital projects. Metro Vancouver liaises regularly with members to coordinate where there are multiple concurrent projects in an area
Compensation in lieu of mitigations(s) or transferring responsibility for impact mitigation (e.g., site restoration) to member jurisdiction	Metro Vancouver is responsible for mitigating construction impacts due to utility capital projects. Requests for compensation in lieu of mitigations(s) will be handled on a case-by-case basis

* Section 65 of the Greater Vancouver Sewerage and Drainage District Act and Section 81 of the Greater Vancouver Water District Act

How to Use the Framework

The following section outlines the structure of the framework, available tools, roles for Metro Vancouver and members, and additional guidance on assessing impacts and mitigations.

Structure of the Framework

The framework consists of two core components:

1. The **Construction Impact Assessment Tool (Appendix B)** breaks down construction impacts into categories, and each category into a 'level of impact': low, medium, and high. Each level provides a description of a low, medium and high scenario for the respective category, along with an example to provide insight for determining the impact metric.
2. The **Mitigation Library (Appendix C)** consists of the same categories identified in the Construction Impact Assessment Tool, with metrics looking at how different solutions can balance the magnitude of the impact identified for a construction project. The metrics look at the 'level of mitigation solution(s)' through three levels: low intensity, medium intensity, and high intensity. Similar to the assessment tool, each level consists of a description of the mitigation solution for the category, along with examples of what the solution could look like through application.

Note: while an impact category may have been rated as high, this does not mean the respective mitigation solution would automatically be high intensity. The collective impacts and collective mitigations need to be considered for any given construction project. When assessing mitigation measures, consider what would be reasonable for the member itself to implement as a mitigation measure when carrying out its own publicly funded utility construction projects.

Supporting materials are included to provide additional guidance in the identification, review and integration of construction impacts and mitigations. These include:

- A **Permitting Fact Sheet (Appendix A)** to provide information on member jurisdiction permitting processes that may inform the impacts or mitigations.
- A **Project Impact Mitigation Template (Appendix D)** to document the impacts and mitigations. Metro Vancouver project teams will document and maintain records on discussions and decisions as part of the project records.

Project Lifecycle Application

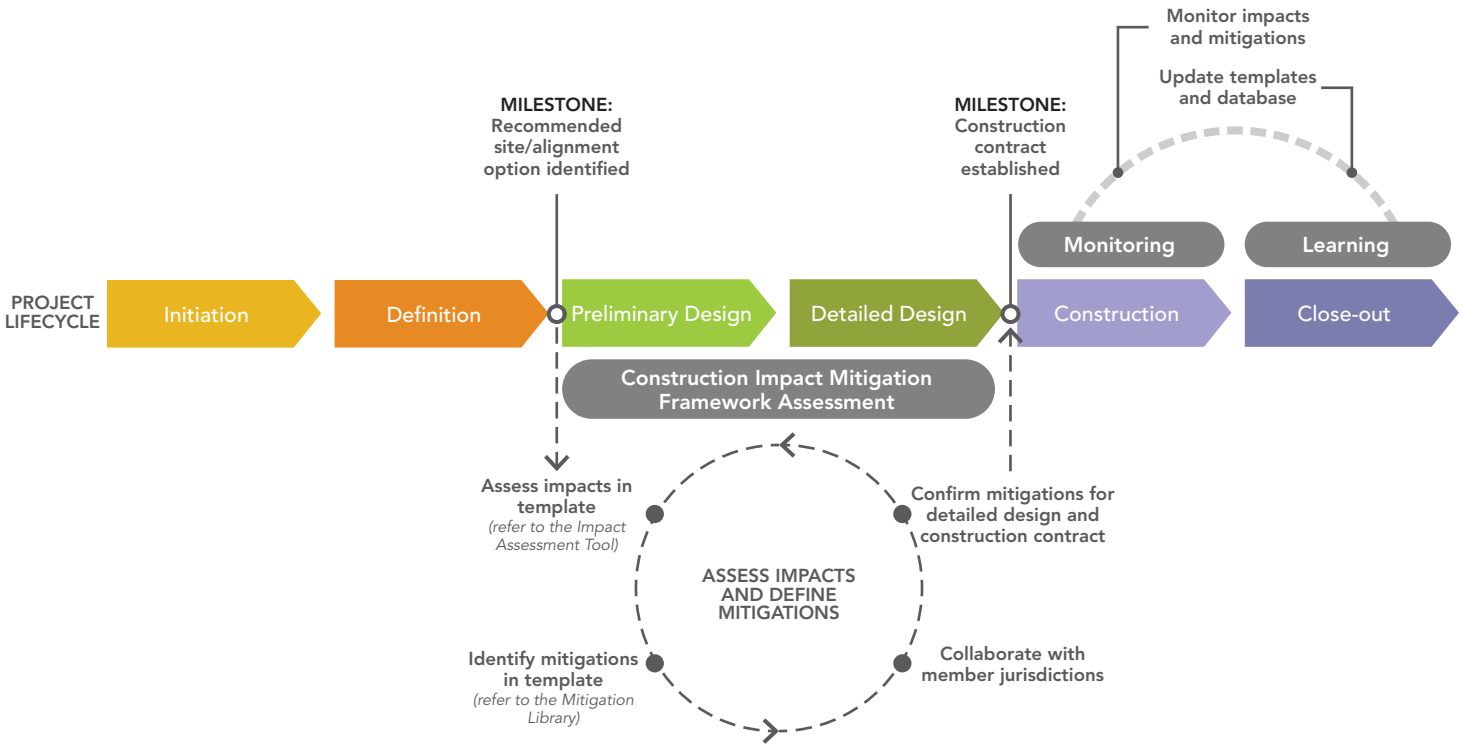
The application of the Construction Impact Mitigation Framework within the project lifecycle is illustrated below.

The Construction Impact Mitigation Framework is used during the design stages in preparation for construction activities. It is intended to be used once a preferred site or alignment is confirmed during the project definition stage, where Metro Vancouver assesses social[1], environmental and financial considerations to evaluate various project options.

Metro Vancouver project teams undertaking Preliminary Design and Detailed Design stages should utilize this Construction Impact Mitigation Framework in collaboration with members to identify, assess and document impacts and planned mitigation solutions that will be implemented during the construction stage and monitored for quality and effectiveness.

As part of the project close-out, both impacts and mitigation solutions will be documented in a database of impacts and mitigation measures for others to learn from, and to further refine the framework.

An iterative and collaborative approach to assessing and mitigating impacts during project lifecycle stages



1 The Metro Vancouver Social Impact Assessment Guide informs site/alignment options analysis. Should the project site or alignment be revisited in the course of Preliminary Design or Detailed Design, Metro Vancouver will re-evaluate social, environmental and financial considerations

Preliminary Design and Detailed Design stages

Starting at the Preliminary Design stage, the project team will complete the Construction Impact Mitigation Template (**Appendix D**) by:

A. Referring to the Construction Impact Assessment Tool (**Appendix B**) and the social, environmental and financial assessments completed during the Definition stage to identify which impacts are applicable to the project and their relative level of magnitude.

B. Referring to the Mitigation Library (**Appendix C**) to identify potential mitigation solution(s) that can offset the identified impacts. The high, medium, and low intensity categories are a guide to help assess the overall order of magnitude of the mitigation solutions.

C. Collaborating with members to discuss initial options and considerations related to potential impacts and mitigation solutions.

D. Confirming impacts and, specifically, mitigation solutions that will be integrated into the construction contract.

Once completed, the template establishes a baseline impact mitigation strategy. Depending on the scope, scale and complexity of the project, the strategy may need to be revised throughout the design phase in an iterative manner until design is complete.

Note: While the order of magnitude levels is intended for general guidance, a high impact does not necessarily require a high intensity mitigation solution. The intent of the framework is to identify a suite of mitigation solutions that collectively balance out the projects' construction impacts. For example, a high impact in one category may have multiple low intensity mitigation solutions.

Construction and Close-out stages

Metro Vancouver should monitor and refine the mitigation strategy to ensure quality and effectiveness and communicate with members through regular progress updates. Upon completion of construction, Metro Vancouver will update project templates with impact assessment(s) and mitigation solutions utilized.

Roles

The following roles for Metro Vancouver and members are outlined for each stage of the project lifecycle. Depending on the scope, scale and complexity of the project, the mitigation strategy may need to be revised throughout the design phase in an iterative manner until design is complete.

Lifecycle Stage	Initiation/ Definition	Preliminary Design/ Detailed Design	Construction	Close-out
		Construction Impact Mitigation Framework		
Overview	Project teams assess social[2], environmental and financial considerations to identify recommended site/alignment option.	Project team will identify and confirm anticipated construction impacts and mitigations based on a confirmed design and incorporate into construction contract. Standardized templates will be used to document anticipated impacts and preferred options to avoid, minimize, or offset impacts.	Project team will monitor mitigation effectiveness and control quality measures in discussion with members.	Completed templates and database used to inform future capital project delivery and refine framework.
Metro Vancouver Role	Gather and analyse social, environmental and financial information to assess site/alignment options.	Use the Construction Impact Assessment Tool and Mitigation Library to fill out the Project Impact Mitigation Template to identify and assess impacts, mitigations, estimated cost of mitigations, and an estimated timeframe. Liaise with member(s) to review and assess potential impacts and mitigations.	Monitor and refine the mitigation strategy to ensure quality and effectiveness and communicate with members through regular project progress updates.	Update templates and database with impact assessment(s) and final mitigation solutions.
Member Jurisdiction Role	Share information related to local considerations.	Review the identified impacts and mitigations and provide input.	Proactively communicate quality issues with mitigation solutions as they arise.	Share reflections on what worked and what could be improved to refine the framework.

2 The Metro Vancouver Social Impact Assessment Guide informs site/alignment options analysis. Should the project site or alignment be revisited in the course of Preliminary Design or Detailed Design, Metro Vancouver will re-evaluate social, environmental and financial considerations

Assessing Levels of Impacts and Mitigations

When determining whether the level of impact is low, medium or high for a category, or whether a mitigation is low, medium, or high intensity, it is necessary to consider two concepts:

1. The assessment is based on the best information available at the time
2. Impacts and mitigations will be monitored during construction and updated as required.

Furthermore, when a potential mitigation option is identified, it may not be appropriate for other projects.

Project managers have overall accountability for projects; they are responsible for ensuring appropriate and qualified individuals are engaged and involved in discussion of impact identification and mitigation planning. Metro Vancouver project teams need to exercise judgement and work with members to come up with a suite of appropriate mitigation strategies based on the combination of impacts.

Each category undergoing impact and mitigation evaluations should maintain the guiding principles of equity, transparency, consistency, and fiscal responsibility.

Tracking Impacts and Mitigations

Metro Vancouver, in collaboration with member jurisdictions, consultants, and contractors, actively and continuously improves its capital delivery practices. With this approach, the framework will be updated periodically to reflect these changes.

The ongoing use of this framework will contribute to the improvement of construction projects by tracking impacts and mitigations over time, and build a deeper understanding of what works and what can be improved. Metro Vancouver will collect feedback as part of the close-out stage of the project lifecycle, which will be used to update this framework, and contribute to continuous improvement of capital project delivery.

References to the completed project impact mitigation templates is intended to be a resource for Metro Vancouver and member jurisdiction staff. The impact assessment intensity and agreed upon mitigation solutions will vary from project to project.

Appendix A – Permitting Fact Sheet

metrovancouver

Metro Vancouver obtains permits from members for utility capital projects. This fact sheet is an informational document to support collaboration between Metro Vancouver and member jurisdiction staff to navigate member jurisdiction permitting requirements. The purpose of this fact sheet is to:

1. Clarify responsibilities and provide resources to help project teams. This information is applicable to all capital projects, however, project-specific variances may be needed.
2. Supplement the Construction Impact Mitigation Framework by providing an outline of applicable member jurisdiction permits that may be required for utility capital projects.
3. Recognize that regulatory and permitting processes can be significant cost and schedule drivers, and to outline permitting considerations that support the framework's guiding principles of providing a transparent, consistent, equitable, and fiscally responsible approach to mitigations during construction of essential region-serving infrastructure.

Note: In addition to permits issued by members, utility capital projects may require permits or approvals from other levels of government, Technical Safety BC, Port of Vancouver, BC Hydro, etc. Authorizations or approvals from other agencies may be prerequisites to acquiring member jurisdiction permits.

Why are members involved in regulating the construction of buildings for Metro Vancouver projects?

Metro Vancouver Regional District does not regulate the construction of buildings outside Electoral Area A as the Greater Vancouver Sewerage & Drainage District and Greater Vancouver Water Districts do not have statutory authority to regulate the construction of buildings.

Metro Vancouver's member municipalities typically regulate in respect to the construction of buildings within their areas, pursuant to the Community Charter and the Vancouver Charter. Metro Vancouver Regional District regulates in respect of the construction of buildings in Electoral Area A, pursuant to the Local Government Act. Tsawwassen First Nation regulates in respect to the construction of buildings within its treaty area pursuant to the Tsawwassen Land Use Planning and Development Act. Typically, regulation includes issuing permits to build and occupy, establishing permit fees, carrying out inspections, and the like.

Early and ongoing collaboration is key to efficient permitting and project success.

Metro Vancouver works closely with members on the planning and delivery of utility capital projects to identify impacts and mitigation measures, and seek approvals for required permits. Early collaboration between Metro Vancouver and members is necessary to align on which permits, approvals, and related processes are needed so that these requirements can be considered in project schedules, budgets, and contracts. As the project progresses, ongoing and proactive management of the permitting process reduces delays and schedule-related costs for delivery of Metro Vancouver projects.

Member jurisdiction permitting processes are often related to potential impacts on the member jurisdiction (e.g., road use, noise). Permitting requirements vary depending on the nature of the utility capital project. In some cases, a member's bylaws may allow it to exercise discretion to allow for exceptions to, or exemptions from, specific permits and approvals.

Why is Metro Vancouver required to pay fees to submit permit applications?

Permit application fees are charged by members to offset their internal costs for administering permit applications and enforcing permit conditions. Permit application fees are not compensation for mitigating project impacts.

Under Section 55(2)(b) of the Community Charter, member jurisdictions may, by bylaw, authorize a building inspector to require building permit applicants to provide a certification by a qualified professional that the submitted plans comply with the BC Building Code and other legal requirements. Under Section 743 of the Local Government Act, municipal liability is limited when relying on the certification of a qualified professional. If a qualified professional is engaged to provide a compliance certification, permit application fees must be reduced.

Preliminary Design | Detailed Design | Construction

KEY CONSIDERATIONS

At the preliminary design phase, it is critical that Metro Vancouver and member jurisdiction staff meet to align on matters such as:

- **Collaboration and ongoing coordination** expectations throughout the design and construction phases
- **Required permits, approvals, and other mechanisms** that allow members to provide input and oversight
- **Submission requirements, resource commitments, and timelines** that allow for cost-effective and timely approval processes

Most permit applications are submitted during the detailed design phase. To maintain project timelines, collaboration and communication should continue through:

- **Active oversight** by Metro Vancouver and member jurisdiction staff to address potential roadblocks
- **Regular meetings** between Metro Vancouver project team and member jurisdiction staff to align expectations, resourcing, and timelines
- **Site visits and regular meetings** during permit application review to address issues early, monitor timelines, and avoid unnecessary delays

After tender award(s), Metro Vancouver oversees the project through the completion of construction. Some permits will be obtained during construction by contractors just prior to undertaking the activity that triggers the permit or approval.

Regular communication between Metro Vancouver and members should continue during this phase to oversee construction-related permits and approvals and actively manage issues, including public concerns and inquiries.

Note: For highest value, risk, and complexity utility capital projects, a signed Project Agreement between Metro Vancouver and a member may be suitable. Project Agreements can be leveraged to formalize certain aspects of the permitting process, including submission requirements, approvals, fees, timelines, and resource commitments. By formalizing the permitting process, Project Agreements can add certainty to the roles and responsibilities of Metro Vancouver and member jurisdiction staff, reducing the potential for increased costs and delays.

Preliminary Design	Detailed Design	Construction
KEY OUTCOMES		
• Permitting assessment and permit summary prepared by Metro Vancouver and reviewed by member • Meetings and workshops between Metro Vancouver and member • Engagement with First Nations, the public, and senior government officials, as required	• Engagement with First Nations, the public, and senior government officials, as required. • Permit applications submitted by Metro Vancouver • Permits and approvals issued by member jurisdiction • Presentations to Mayor and Council, as appropriate	• Regular meetings and site visits • Engagement with First Nations, the public, and senior government officials, as required • Construction permit applications submitted by contractors or Metro Vancouver • Permits and approvals issued by member jurisdiction • Respond to public inquiries

Note: All Metro Vancouver utility capital project permit application forms must be signed by Metro Vancouver's Chief Administrative Officer/Commissioner or delegate. Permit applications will be approved by member jurisdiction staff or by Mayor and Council and may require public engagement and First Nations consultation processes.

Note: Metro Vancouver and members can enter into an Operation Agreement that covers a variety of operations and maintenance activities of a particular utility to formalize the parties' ongoing relationship by, among other things, establishing a set of mutual expectations for notifications, approvals, and submissions.

Typical Member Jurisdiction Permits

Below are examples of typical permits that member jurisdictions may require for utility capital projects. Metro Vancouver and members should work together to identify the permits that are necessary for a given utility capital project and reduce typical review times as much as possible. Permit application review timelines are driven by several factors, such as:

1. Availability of staff
2. Backlog of permit applications
3. Timing of review panel or council meetings
4. Complexity of project and issues
5. Requirements for public engagement and First Nations consultation
6. Departments involved in application review (e.g., engineering, parks, planning, fire department)
7. Coordination with other permitting agencies (e.g., federal, provincial, other utilities, etc.)
8. Coordination with other utilities

Permit or Approval	What is it required for?	When is it applied for?	Typical review timelines
Building Permit	To construct buildings or structures as specified in a bylaw.	Prior to construction of buildings and structures that require permit per member bylaws or BC Building Code	6 months to 2 years
Building Occupancy Permit	Prior to occupying a building.	During construction, prior to building occupancy	2 to 3 months
Development Permit	If the project site is within a designated Development Permit Area and no exemptions apply.	During detailed design	3 to 6 months
Demolition Permit	Demolishing a building or structure as specified in a bylaw.	During construction, prior to demolition of buildings and structures	3 to 6 months
Discharge Permit[3,4]	If activities during construction or operation result in the discharge of wastewater, contaminated groundwater, or stormwater into sewer or surrounding environment.	Prior to or during construction, in advance of any activities that may result in discharge	1 to 2 months
Noise Bylaw Exemption	If construction activities do not adhere to Noise Bylaw (e.g., outside of hours or above decibel levels).	During construction, prior to activity requiring exemption	3 to 4 months
Rezoning Approval	If current zoning on the property does not allow for planned site use.	During detailed design	6 months to 2 years
Road/Highway Use Permit	If member jurisdiction roads will be required for material or equipment storage, or as workspace or use for transporting equipment (e.g., where traffic controls involved to enter/exit site).	During construction, prior to activity requiring road use	1 to 2 months
Soil Removal Permit	If soil is removed from site, or if fill is brought to site above an amount specified in a soil bylaw.	During construction, prior to soil removal or addition of fill above amount specified in bylaw	1 to 2 months
Subdivision Approval	Subdividing a property or consolidating two or more properties into one lot.	During detailed design	6 months to 2 years
Tree Removal Permit	Removal of trees that are above the size specified in a tree bylaw.	Prior to tree removal	2 to 4 months
Various occupancy permits: safety, electrical, gas, plumbing, water/ wastewater connection permits	To complete commissioning of building and site infrastructure to meet the building code and connect to member jurisdiction services.	During construction, prior to completing building and site infrastructure construction	1 to 2 months

3 Issuing agency depends on discharge location (i.e., Metro Vancouver or member jurisdiction sewer, receiving environment)

4 A waste discharge authorization may also be required under the Environmental Management Act

Appendix B – Construction Impact Assessment Tool

The Construction Impact Assessment Tool guides identification of impacts and assessment of impact magnitude.

#	Impact Category	Low Level of Impact	Medium Level of Impact	High Level of Impact
1.	**Access disruption to businesses and residential properties**	Minimal or limited access disruption to businesses or residential properties are anticipated as a result of the planned works. **Example:** Some businesses or residential properties may experience some impact to reduced access points. Access disruptions can be resolved with minimal detours or accommodations.	Moderate/notable access disruption to businesses or residential properties are anticipated as a result of the planned works. **Example:** A substantial number of businesses or residential properties in the impacted area are anticipated to experience some reduction in access points. Access disruptions can be resolved with reasonable detours (e.g., no substantive change to business operation plans).	Substantial access disruption to businesses or residential properties are anticipated as a result of the planned works. **Example:** The majority of businesses and residential properties in the impacted area are anticipated to experience substantially less access via previous access points. Only available resolutions include major detours or accommodations (e.g., changing access hours, mode of access,etc.).
2.	**Traffic congestion impacting businesses and residents**	Limited additional traffic congestion is anticipated to impact businesses, residents or commuters as a result of planned works. **Example:** Some businesses within impacted area are anticipated to experience some impacts to business operations which require limited accommodations during construction period.	Moderately more severe traffic congestion is anticipated to impact businesses, residents or commuters as a result of planned works. **Example:** Some businesses within impacted area are anticipated to experience some impacts to business operations which can be reasonably accommodated.	Substantially more severe traffic congestion is anticipated to impact businesses, residents or commuters as a result of planned works. **Example:** The majority of businesses within the impacted area are anticipated to experience prolonged (e.g. >6 months) impacts to business operations (e.g., requiring major retooling of business operations) as a direct result of planned works.
3.	**Dust or odour**	Few complaints related to dust or odour are anticipated as a result of planned works. **Example:** Some complaints are anticipated to be received over the construction period with limited to no recurrence observed.	Moderately high number of complaints related to dust or odour are anticipated as a result of planned works. **Example:** Periodic instances of higher-than-normal complaints are anticipated to be received during construction, from a variety of parties. There may be occasional recurrences over the same period.	Substantially high number of complaints related to dust or odour are anticipated as a result of planned works. **Example:** Higher-than-normal volume of similar complaints are anticipated to be received consecutively (same impact or same originating party) for a prolonged period (e.g. > 6 consecutive months).

#	Impact Category	Low Level of Impact	Medium Level of Impact	High Level of Impact
4.	**Noise**	The Noise and Vibration Risk Screening* does not indicate a risk that people or buildings in the vicinity of planned construction activities will be impacted by noise.	The Noise and Vibration Risk Screening* indicates a potential risk that people or buildings in the vicinity of planned construction activities will be impacted by noise, and the impact assessment conducted by an acoustical professional anticipates that the noise from the planned construction activities may have a medium impact.	The Noise and Vibration Risk Screening* indicates a potential risk that people or buildings in the vicinity of planned construction activities will be impacted by noise, and the impact assessment conducted by an acoustical professional anticipates that the noise from the planned construction activities may have a high impact.
5.	**Vibrations**	The Noise and Vibration Risk Screening* does not indicate a risk that people or buildings in the vicinity of planned construction activities will be impacted by vibration.	The Noise and Vibration Risk Screening* indicates a potential risk that people or buildings in the vicinity of planned construction activities will be impacted by vibration and the impact assessment conducted by an acoustical professional anticipates that the vibration from the planned construction activities may have a medium impact.	The Noise and Vibration Risk Screening* indicates a potential risk that people or buildings in the vicinity of planned construction activities will be impacted by vibration and the impact assessment conducted by an acoustical professional anticipates that the vibration from the planned construction activities may have a high impact.
6.	**Parking**	Minimal to no parking reduction where there is high parking demand (for construction site or in vicinity of construction site for staff).	Moderate levels of parking reduction where there is high parking demand (for construction site or in vicinity of construction site for staff) are anticipated with some alternatives available.	Major levels of parking reduction where there is high parking demand (for construction site or vicinity of construction site for staff) are anticipated with limited alternatives available.
7.	**Disruption in access to bike/pedestrian trails and routes**	Minimal to no incremental levels of access disruption or duration of disruption are anticipated as a result of planned works. **Example:** Small percentage (or less) of impacted bike trail(s)/route(s) are closed off to cyclists, and a range of alternate solutions could be accommodated.	Moderate level of access disruption or duration of disruption are anticipated as a result of planned works. **Example:** Some bike trail(s)/ route(s) with normally high traffic are closed off to cyclists for short periods but there are some options for detours.	Major level of access disruption or duration of disruption are anticipated as a result of planned works. **Example:** Substantial percentage of impacted bike trail(s)/route(s) are closed off to cyclists entirely and few options exist for detours or alternate arrangements.

*The Noise and Vibration Risk Screening is contained in the Metro Vancouver Construction Noise and Vibration Guide and is completed at the beginning of a utility capital project by the project team.

#	Impact Category	Low Level of Impact	Medium Level of Impact	High Level of Impact
8.	**Disruption to special events operations**	Limited to no incremental disruptions to known special events operations (e.g., parade, annual festival) as a result of planned works are anticipated. **Example:** The number or magnitude of special events impacted is low or municipal revenues generated via special events may decrease, though average total impacts are marginal.	Moderate disruptions to known special events operations (e.g., parade, annual festival) as a result of planned works are anticipated. **Example:** The number or magnitude of special events impacted is moderate or municipal revenues generated via special events may decrease.	Substantial disruptions to known special events operations (e.g., parade, annual festival) as a result of planned works are anticipated. **Example:** The number or magnitude of special events impacted is substantial and municipal revenues generated via special events are anticipated to materially decrease.
9.	**Assessment of and protection against impacts on existing non-Metro Vancouver utilities and roadway infrastructure**	Limited to no net impacts on member jurisdiction(s) utilities and roadway infrastructure are anticipated as a result of planned works. **Example:** No, or minor, modifications are needed to protect existing utilities serving member jurisdiction(s) and minimal disruption to non-Metro Vancouver utility services is anticipated.	Moderate impacts on member jurisdiction(s) utilities and roadway infrastructure are anticipated as a result of planned works. **Example:** Some work is required to protect existing non-Metro Vancouver utilities serving member jurisdiction(s) and minor disruption in non-Metro Vancouver services is anticipated.	Substantial impacts on member jurisdiction(s) utilities and roadway infrastructure are anticipated as a result of planned works. **Example:** Major work is required to protect or relocate existing non-Metro Vancouver utilities serving member jurisdiction(s). Material disruption in non-Metro Vancouver services is anticipated.
10.	**Temporary or permanent statutory rights of way**	Land required for temporary or permanent right of way already designated for utility or public use and unlikely to encumber needs for other utility or public use.	Land required for temporary or permanent right of way already designated for utility or public use but could encumber needs for other utility or public use.	Land required for temporary or permanent right of way is on investment property (i.e., lands that can be sold to third parties for development) or municipal development lands for future development (e.g., physical buildings such as community centres if directly affected by the presence of a right of way).
11.	**Official Community Plan (OCP) form and character**	Limited to no deviations from planned design and character of the impacted area as a result of and at completion of planned works anticipated. **Example:** Planned design of the project will result in limited to no change or deviation from character for the site as outlined in the OCP for that area.	Moderate deviations from planned design and character of the impacted area as a result of or at completion of planned works anticipated. **Example:** Planned design of the project will result in moderate character change or deviation for the site as outlined in the OCP for that area.	Substantial deviations from planned design and character of the impacted area as a result of and at completion of planned works anticipated. **Example:** Planned design of the project will result in substantial character change or deviation for the site as outlined in the OCP for that area.

#	Impact Category	Low Level of Impact	Medium Level of Impact	High Level of Impact
12.	**Existing community amenities**	Limited or no net change to access or availability of community amenities (e.g. ., park bench, water fountain, community art, playground, etc.) As a result of planned works anticipated. **Example:** A small number of community amenities are inaccessible, and alternative amenities are available.	Moderate net change to access or availability of community amenities (e.g., park bench, water fountain, community art, playground, etc.) As a result of planned works anticipated. **Example:** Some community amenities with high use/ visitation are inaccessible for brief periods of time, but there are some alternative amenities available.	Major net change to access and availability of community amenities (e.g., park bench, water fountain, community art, playground, etc.) As a result of planned works anticipated. **Example:** Permanent removal of high use/visitation amenities and long term (>6 months) lack of access with minimal alternatives available.
13.	**Permit application processing**	Minimal/limited staff capacity or technical expertise required for member jurisdiction(s) to process permit applications for planned works. **Example:** The permit application is not anticipated to require specialized expertise or training to review.	Moderate staff capacity or technical expertise required for the member jurisdiction(s) to process permit applications for planned works. **Example:** The permit application may require specialized expertise or training to review.	Substantial staff capacity and technical expertise required for the member jurisdiction(s) to process permit applications for planned works. **Example:** The permit application is anticipated to require substantial staff capacity and specialized expertise and training to review.
14.	**Site ecological disturbance**	Minimal/limited ecological disturbance anticipated with the planned works.	Moderate/material ecological disturbance anticipated with the planned works.	Substantial ecological disturbance anticipated with the planned work.

Appendix C – Mitigation Library

The Mitigation Library guides the identification of mitigation solutions for construction-related impacts.

#	Mitigation Category	Low Intensity Level of Mitigation Solution	Medium Intensity Level of Mitigation Solution	High Intensity Level of Mitigation Solution
1.	**Access disruption to businesses and residential properties**	Mitigation measures seek to better understand and provide advance notice of access disruptions to businesses and residential properties within the impacted area. **Example:** • Providing ample notice to businesses and residents about upcoming construction projects, including details about the duration, scope, and potential traffic impacts. • Requiring a public impact plan prepared by Metro Vancouver – including traffic, noise, air quality, preservation of existing utilities, site cleanliness, restoration. • Providing advance notice to affected neighbourhoods in the form of letters or dedicated webpage. • Conduct pre- and post-construction condition assessments on affected properties and make repairs as needed.	Mitigation measures seek to implement temporary measures which offset or provide alternative access options to businesses and residential properties within the impacted area. **Example:** In addition to the potential low intensity mitigation solutions, examples can include: • Implementing temporary access during construction such as bridges or pedestrian walkways to ensure continuous access to businesses and residences, including maintaining accessibility. • Conduct studies to understand rerouting options and implement mitigations which prioritize highest-impact/most vulnerable populations. • Coordinate with public transit agencies to reduce impacts on bus routes or relocate bus stops. • Coordinate with emergency services to ensure access and alternate routes are feasible. • Coordinate with waste and recycling collectors to ensure continued service. • Moderate adjustments to project schedule. • Moderate change to standard work hours/days.	Mitigation measures require major changes to standard or typical construction schedule and methodology, requiring additional costs and management oversight. **Example:** In addition to the potential moderate and low intensity mitigation solutions, examples can include: • Utilize alternate construction methodology. • Changing project alignment or site location after Project Definition phase. • Alternate material delivery/ removal methods (e.g., barging, re-use) in order to reduce traffic impacts. • Substantial change to standard work hours/days. • Making substantial adjustments to project schedule.

#	Mitigation Category	Low Intensity Level of Mitigation Solution	Medium Intensity Level of Mitigation Solution	High Intensity Level of Mitigation Solution
2.	**Traffic congestion impacting businesses and residents**	Mitigation measures seek to provide advance notice and generate public awareness of upcoming traffic congestion. **Example:** • Providing ample notice to businesses and residents about upcoming construction projects, including details about the duration, scope, and potential traffic impacts. • Enhancing reference checks when awarding construction contracts. • Requiring contractors to attend public meetings. • Engaging with member jurisdiction(s) in development and review of traffic management strategies.	Mitigation measures seek to implement temporary relief measures to reduce dust or odour impacts, or establish more responsive, ongoing dialogue to understand and resolve impacts of dust or odour. **Example:** In addition to the potential low intensity mitigation solutions, examples can include: • Liaising with member jurisdiction(s) and other utilities to minimize collective impacts in the area. • Temporary works to facilitate traffic movement, such as intersection modifications, signal changes, enhanced intersection control. • Conduct studies to understand rerouting options and implement mitigations which prioritize highest-impact/most vulnerable populations. • Coordinate with public transit agencies to reduce impacts on bus routes or relocate bus stops. • Moderate adjustments to project schedule. • Moderate changes to standard work hours/days.	Mitigation measures seek to provide advance notice and generates public awareness of upcoming traffic congestion. **Example:** In addition to the potential moderate and low intensity mitigation solutions, examples can include: • Utilize alternate construction methodology. • Changing project alignment or site location after Project Definition phase. • Use alternative material delivery/removal options (e.g., barging). • Substantial changes to standard work hours/days (e.g., to avoid peak traffic, expedite construction, etc.). • Substantial adjustments to project schedule.

#	Mitigation Category	Low Intensity Level of Mitigation Solution	Medium Intensity Level of Mitigation Solution	High Intensity Level of Mitigation Solution
3.	**Dust or odour**	Mitigation measures seek to avoid/reduce impacts or to provide greater notice and public awareness of upcoming dust/odour nuisances. **Example:** • Providing ample notice to businesses and residents about upcoming construction projects, including details about the duration, scope, and potential impacts. • Incentivizing construction methods which reduce or minimize dust and odour. • Regular cleaning of construction equipment, vehicles, and work areas to prevent the buildup of dust and odours and minimize their dispersion off-site. • Conducting baseline and continuing dust and odour studies throughout construction.	Mitigation measures seek to implement temporary relief measures to reduce dust or odour impacts, or establish more responsive, ongoing dialogue to understand and resolve impacts. **Example:** In addition to the potential low intensity mitigation solutions, examples can include: • Applying dust control products such as water or other dust suppressants, or biodegradable soil stabilizers, on exposed soil surfaces to prevent dust generation. • Regular street sweeping. • Locating dust or odour generating construction equipment (e.g., diesel generators) as far as practical from nearby residents and businesses. • Moderate change to standard work hours/days.	Mitigation measures require major changes to standard or typical construction schedule and methodology, requiring additional costs and management oversight. **Example:** In addition to the potential moderate and low intensity mitigation solutions, examples can include: • Substantial change to standard work hours/days. • Utilize alternate construction methodology. • Revise project schedule to avoid dry season for dust producing activities.

#	Mitigation Category	Low Intensity Level of Mitigation Solution	Medium Intensity Level of Mitigation Solution	High Intensity Level of Mitigation Solution
4.	**Noise**	Mitigation measures seek to avoid/reduce impacts or to provide greater advanced notice and public awareness of upcoming noise nuisances. **Example:** • Providing ample notice to businesses and residents about upcoming construction projects, including details about the duration, scope, and potential noise impacts. • Conducting baseline and continuing noise studies throughout construction. • Specifying noise limits during construction.	Mitigation measures seek to implement temporary relief measures to reduce noise impacts, or establish more responsive, ongoing dialogue to understand and resolve impacts of noise. **Example:** In addition to the potential low intensity mitigation solutions, examples can include: • Non-standard construction methods during periods of peak activity. • Installing soundproofing materials on construction equipment, machinery or structures to reduce noise emissions (e.g., noise blankets, dampening panels, hush kits, mufflers, or enclosures). • Selecting low noise equipment (e.g., hospital grade diesel generators, or white noise back-up signals). • Locating noise generating equipment as far as practical from businesses and residents. • Installing noise monitoring equipment at sensitive locations to continuously monitor during construction. • Moderate change to standard work hours/days.	Mitigation measures require major changes to standard or typical construction schedule and methodology, requiring additional costs and management oversight. **Example:** In addition to the potential moderate and low intensity mitigation solutions, examples can include: • Utilizing alternate construction methodology or site design which would substantially reduce or eliminate noise-related nuisances. • Moving larger construction zones (e.g., chambers) away from residents as much as possible. • Installing sound barriers during construction. • Substantial change to standard work hours/days. • Opting for alternative construction materials that produce less noise during installation and construction activities. (e.g., prefabricated materials, such as steel or concrete panels are often installed with less noise compared to traditional methods like pouring concrete on-site). • Changing project alignment or site location after Project Definition phase.

#	Mitigation Category	Low Intensity Level of Mitigation Solution	Medium Intensity Level of Mitigation Solution	High Intensity Level of Mitigation Solution
5.	**Vibrations**	Mitigation measures seek to avoid/reduce impacts or to provide greater advanced notice and public awareness of upcoming vibration occurrences. **Example:** • Providing ample notice to businesses and residents about upcoming construction projects, including details about the duration, scope, and potential vibration impacts. • Looking at alignment/ equipment placement to reduce proximity to businesses/residents. • Specifying vibration limits during construction. • Establishing buffer zones between construction sites and sensitive structures to mitigate the effects of vibrations. • Conduct baseline studies and regular monitoring and reporting during construction.	Mitigation measures seek to implement temporary relief measures to reduce vibration impacts, or establish more responsive, ongoing dialogue to understand and resolve impacts of vibrations. **Example:** In addition to the potential low intensity mitigation solutions, examples can include: • Installing isolation measures such as dampening materials or isolators between machinery and the ground to minimize vibration transmission. • Installing monitoring equipment at sensitive locations to continuously monitor vibration levels during construction activities. • Installing vibration reduction materials on construction equipment, machinery and structures to reduce vibration (e.g., vibration isolation mounts).	Mitigation measures require major changes to standard or typical construction schedule and methodology, requiring additional costs and management oversight. **Example:** In addition to the potential moderate and low intensity mitigation solutions, examples can include: • Using alternative construction techniques such as precast elements or off-site construction where possible to reduce on-site activities and associated vibrations. • Employing low-impact construction methods (e.g., hydraulic breakers instead of traditional methods like pneumatic breakers, or vibratory rather than impact piling). • Changing project alignment or site location after Project Definition phase.

#	Mitigation Category	Low Intensity Level of Mitigation Solution	Medium Intensity Level of Mitigation Solution	High Intensity Level of Mitigation Solution
6.	**Parking**	Mitigation measures seek to avoid/reduce impacts or to provide greater notice and public awareness of upcoming parking disruptions and alternate solutions. **Example:** • Reviewing contractor parking plan with member jurisdiction(s) early in project planning. • Consider parking requirements during route alignment or site selection.	Mitigation measures seek to implement temporary relief measures to reduce or provide alternate solutions for business/resident parking during peak construction periods. **Example:** In addition to the potential low intensity mitigation solutions, examples can include: • Reducing contractor parking requirements. • Making contractor vehicles more visible for monitoring (e.g., requiring contractor to clearly identify vehicles of work crews during construction period). • Set limits on public roadway use by contractor vehicles. • Securing short-term, temporary free parking alternates for designated businesses and residents during peak construction activities when the most contractors are expected to be onsite. • Request Highway Use Permit (or other agreement) from member jurisdiction to designate part of public roadway for construction vehicle parking. • Alternate shift scheduling for construction activities to minimize parking requirements during peak hours, and concentrate activity/onsite parking availability for contractors during off-peak hours.	Mitigation measures require changes or material adjustments to construction schedule, methodology, or location of work, requiring additional costs and management oversight. **Example:** In addition to the potential moderate and low intensity mitigation solutions, examples can include: • Considering offsite parking and shuttle options. • Reducing peak parking by contractors by changing construction methodology, approach or scheduling of work. • Securing long-term free parking alternates for designated businesses and residents during construction period.

#	Mitigation Category	Low Intensity Level of Mitigation Solution	Medium Intensity Level of Mitigation Solution	High Intensity Level of Mitigation Solution
7.	**Disruption in access to bike/pedestrian trails and routes**	Mitigation measures seek to avoid/reduce impacts and to provide advance notice and generate public awareness of upcoming disruption to bike/ pedestrian trails and routes. **Example:** • Identify, map, and communicate affected areas, the duration, and alternative routes to the public. • Installing temporary signage along affected trails to notify users of the construction and redirect them to alternative routes or detours.	Mitigation measures provide and signal users to detour options, and act as temporary relief for impacted bike/ pedestrian trails and routes. These mitigation measures may not be of complete comparable capacity and function as to the bike/ pedestrian trail or route experiencing disruption. **Example:** In addition to the potential low intensity mitigation solutions, examples can include: • Maintain reduced-traffic bike/pedestrian trails or routes during construction and ensure safety of cyclists is actively managed. Ensure the original trail/route is restored or improved after construction. • Creating temporary bike/ pedestrian trails or routes to offset those closed during construction, and ensuring the original trail or route is restored or improved after construction.	Mitigation measures replace bike/ pedestrian trails or routes made inaccessible during construction. **Example:** In addition to the potential moderate and low intensity mitigation solutions, examples can include: • Creating new permanent bike/pedestrian trails or routes within close proximity of those closed for duration of construction; these routes will continue to be available after construction. • Changing project alignment after Project Definition phase.

#	Mitigation Category	Low Intensity Level of Mitigation Solution	Medium Intensity Level of Mitigation Solution	High Intensity Level of Mitigation Solution
8.	**Disruption to special events operations**	Mitigation measures will seek to better coordinate activities between Metro Vancouver project team and member jurisdiction(s), or to provide ample active notice to affected vendors and the public. **Example:** • Providing timely and clear communication to the member jurisdiction(s) about upcoming construction activities, including the duration, affected areas, and alternative routes. • Implementing traffic management plans to mitigate congestion caused by construction-related closures or detours. • Coordinating with member jurisdiction(s) to manage traffic flow and ensure smooth access to the event venue.	Mitigation measures may continue to accommodate special event operations in the member jurisdiction(s), though some reduction of event scale or programming is to be expected. **Example:** In addition to the potential low intensity mitigation solutions, examples can include: • Designating multiple entry and exit points to the venue to accommodate any access restrictions. • Scheduling work which may temporarily free up or delay works at particular sites allowing event to still proceed but with some restrictions/reduced programming. • Ask for temporary alternate options to host special event operations using Metro Vancouver's existing portfolio without substantial incremental investments to ready the site.	Mitigation measures will allow special event operations to continue with limited disruptions, by securing alternate sites or working with the member jurisdiction(s) to deliver the event through other means. **Example:** In addition to the potential moderate and low intensity mitigation solutions, examples can include: • Metro Vancouver to explore and fund opportunities to co-host events with member jurisdiction(s) virtually. • Changing project alignment or site location after Project Definition phase. • Work with member jurisdiction(s) to identify alternate location/routing for event while site is unavailable. • Revise project schedule or stop work temporarily to accommodate the event.

#	Mitigation Category	Low Intensity Level of Mitigation Solution	Medium Intensity Level of Mitigation Solution	High Intensity Level of Mitigation Solution
9.	**Assessment of and protection against impacts on existing non-Metro Vancouver utilities and roadway infrastructure**	Mitigation measures seek to provide ample notice to business and residents affected during construction, and enhances coordination between contractor, member jurisdiction(s) and Metro Vancouver project team. **Example:** In addition to restoration guidance for roadways outlined in Metro Vancouver's Pavement Restoration Policy, examples can include: • Engaging with utilities and BC 1 Call early in the planning process to understand the location and specifications of existing infrastructure to consider in design and show on drawings as required. • Require use of advanced mapping technologies like GIS (Geographic Information Systems) to create accurate records of underground and above-ground utilities. • Minimal offset required (e.g., no other utilities or plans for new infrastructure) from existing infrastructure to new infrastructure to reduce proximity and mitigation measures required. • Providing ample notice to residents and businesses of upcoming utility disruptions.	Mitigation measures include temporary protection methods and monitoring, and early detailed planning to avoid and minimize disruptions or damage to non-Metro Vancouver utilities and roadway infrastructure. **Example:** In addition to the potential low intensity mitigation solutions, examples can include: • Implementing safe excavation practices to avoid accidental damage to underground utilities (e.g., techniques like hand digging or vacuum excavation in sensitive areas where utilities are present). • Providing temporary physical supports or rerouting for utility services during construction to maintain uninterrupted service to customers and neighbouring properties. • Obtaining necessary easements or right-of-way permissions from utility owners to protect their infrastructure. • Installing protective barriers or warning signage to prevent accidental damage to utility infrastructure. • Using methods like utility markers, barricades, or temporary fencing to define construction zones. • Requiring substantial offsets from existing to new infrastructure to reduce proximity and mitigation measures required. • Pre-excavate utilities to confirm location.	Mitigation measures require changes to project alignment and location, seeks to eliminate any non-Metro Vancouver utilities and roadway infrastructure disruptions, or will enhance the state of utility protection for member jurisdiction(s) after construction. **Example:** In addition to the potential moderate and low intensity mitigation solutions, examples can include: • Providing alternate or temporary utility supply during periods of disruption. • Changing project alignment or site location after Project Definition phase.

#	Mitigation Category	Low Intensity Level of Mitigation Solution	Medium Intensity Level of Mitigation Solution	High Intensity Level of Mitigation Solution
10.	**Temporary or permanent statutory rights of way** Note: Metro Vancouver will not pay for land rights for member-owned public lands which will be returned to the same general use following the project's completion and will not pay land rental costs for rights of way.	Mitigation measures seek to minimize and restore impact areas. **Example:** • Address damage caused by the construction and restoration of disturbed areas. • Conducting thorough surveys of the statutory right of way and surrounding areas to identify potential risks, sensitive features, and existing infrastructure. • Existing replaced Metro Vancouver infrastructure abandoned in place.	Mitigation measures seek to address and/or compensate member for loss of use of area due to project activities. **Example:** In addition to the potential low intensity mitigation solutions, examples can include addressing: • Damage caused by the construction. • Restoration of disturbed areas. • Loss of revenue during construction (e.g., parking fees). • Relocation costs (permanent or temporary). • Loss of use during construction. • Removal of replaced Metro Vancouver infrastructure.	Mitigation measures seek changes to project alignment, location, or construction methods or payment for acquisition for permanent rights of way. **Example:** In addition to the potential moderate and low intensity mitigation solutions, examples can include: • Changes to project alignment, siting, or construction methodology after Project Definition phase to minimize area of statutory rights-of-way but not to be considered as compensation for acquisition of temporary or permanent rights-of-way. • Provision of multi-use pathways, property enhancements, or landscaping improvements, where deemed reasonable in the overall context of the project, but not considered as compensation for acquisition of temporary or permanent rights-of-way. • For permanent rights-of-way, Metro Vancouver to pay member jurisdiction(s) fair market value acquisition costs for investment properties (i.e., lands that can be sold to third parties for development) and municipal development lands designated for future use (e.g., physical buildings such as community centres if directly affected by the presence of a right-of-way).

#	Mitigation Category	Low Intensity Level of Mitigation Solution	Medium Intensity Level of Mitigation Solution	High Intensity Level of Mitigation Solution
11.	**Official Community Plan (OCP) form and character**	Mitigation measures to align with form and character requirements outlined in the OCP of the member jurisdiction(s) as part of initial site selection and planning discussions. **Example:** • Consider OCP in route alignment or site selection planning. • Accommodate minor changes (no net change to project cost or schedule) into project design to align with form and character of area as outlined in the OCP.	Mitigation measures will seek to limit or manage deviations from the form and character requirements outlined in the OCP of the member jurisdiction(s) for the selected site or alignment. **Example:** In addition to the potential low intensity mitigation solutions, examples can include: • Accommodating minor changes (minimal project cost or schedule implications) into project design to align with form and character of area. • Minor adjustment to route alignment or site selection.	Mitigation measures to limit deviations from form and character requirements outlined in the OCP of the member jurisdiction(s) involving changes to the design and site location. **Example:** In addition to the potential moderate and low intensity mitigation solutions, examples can include: • Changing project alignment or site location after Project Definition phase. • Altering the proposed design of the facility or infrastructure building(s) to align with form and character requirements within the OCP (e.g., building features such as a green roof, interpretive elements, higher end finishes, or project site features such as paths, tennis courts).
12.	**Existing community amenities** Note: Metro Vancouver will consider provision of net new community amenities in lieu of impact mitigation on a case-by-case basis.	Mitigation measures seek to provide advance notice and generate public awareness of upcoming amenity disruption. **Example:** • Identify, map, and communicate affected areas, the duration, and alternative amenity locations to the public.	Mitigation measures provide and signal users to alternative amenities. These mitigation measures may not be of comparable capacity and function. **Example:** • Providing maps to similar amenities. • Enhanced communication with the public on where and how to access alternative amenities. • Installing temporary signage to notify users of the construction and redirect them to alternative amenities.	Mitigation measures seek to maintain a similar experience of amenity in a temporary or alternate location. **Example:** • Creating a temporary amenity to offset those removed or made inaccessible during construction. • Ensuring the original amenity is restored after construction. • Providing a similar amenity in an alternate location. • Changing project alignment or site location after Project Definition phase.

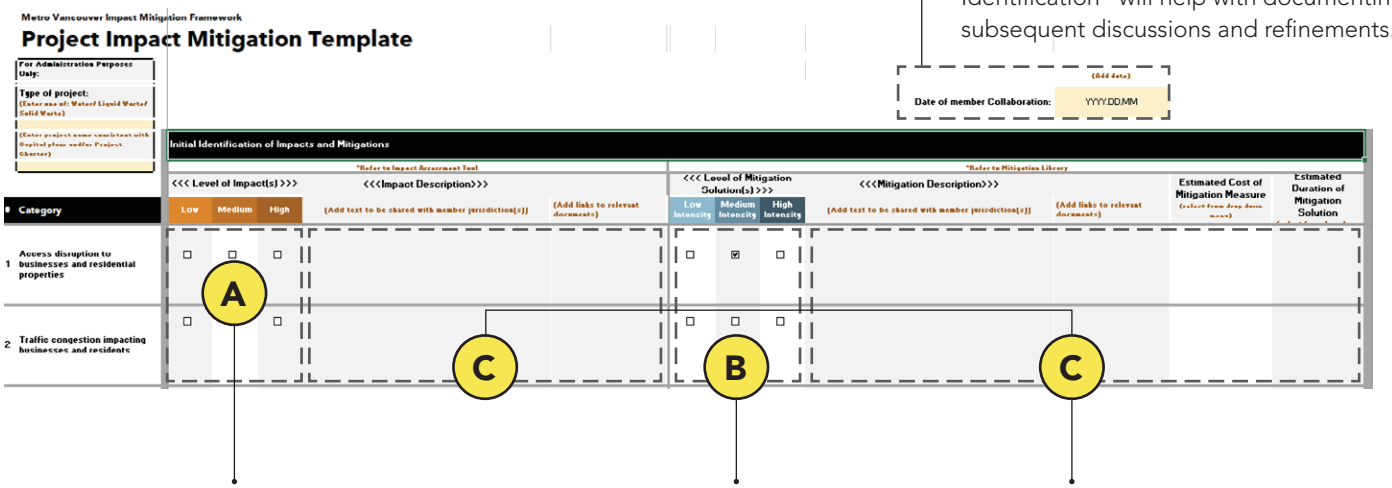
#	Mitigation Category	Low Intensity Level of Mitigation Solution	Medium Intensity Level of Mitigation Solution	High Intensity Level of Mitigation Solution
13.	**Permit application processing**	Mitigation measures enable improved efficiency in permit review and processing. **Example:** • Providing a clearly defined process for contractors and sub-contractors to propose and receive approval for alternative solutions or plans (from both member jurisdiction(s) and Metro Vancouver). • Providing advance notice to member jurisdiction(s) of project timing and requirements to flag potential issues and plan around anticipated approval timelines. • Metro Vancouver staff to engage consultants to review permit applications to facilitate expedient review by member jurisdiction(s). • Hosting member jurisdiction(s) to share information about upcoming projects, establish approval requirements, and plan resource allocations based on anticipated demands.	Mitigation measures provide tools, processes, some staff capacity or technical expertise for member jurisdiction(s) to process permit applications for planned works in a timely manner. **Example:** In addition to the potential low intensity mitigation solutions, examples can include: • Establishing overarching permits for Metro Vancouver capital projects, structural projects, and linear projects respectively. • Negotiating a permitting exemption agreement or an annual operating fee between Metro Vancouver and member jurisdiction(s).	Mitigation measures address gap in substantial staff capacity or technical expertise required for member jurisdiction(s) to process permit applications for planned works in a timely manner. **Example:** In addition to the potential moderate and low intensity mitigation solutions, examples can include: • Member jurisdiction(s) authorizing use of qualified professional(s) to certify building code and bylaw compliance of Metro Vancouver's permit application(s) at Metro Vancouver cost and thus foregoing permit fees to be charged by member jurisdiction(s) to Metro Vancouver (Refer to Chapter 26, Section 55 of the Community Charter and Section 743 of the Local Government Act.

#	Mitigation Category	Low Intensity Level of Mitigation Solution	Medium Intensity Level of Mitigation Solution	High Intensity Level of Mitigation Solution
14.	**Site ecological disturbance**	Mitigation measures encourage identification of opportunities which could reduce ecological disturbance of planned works. **Example:** • Establishing evaluation methodologies for innovative solutions that minimize or reduce ecological degradation. • Working with member jurisdiction(s) to minimize loss of trees, and environmental degradation resulting from construction. • Re-vegetation plans. • Environmental monitoring, erosion, and sediment control measures.	Mitigation measures seek to identify and provide some offsets for ecological disturbance from planned works or improve ecological condition greater than current state of an impacted area. **Example:** In addition to the potential low intensity mitigation solutions, examples can include: • Habitat restoration projects along the project alignment or site location.	Mitigation measures change construction approach and methodology to reduce ecological disturbance of planned works. **Example:** In addition to the potential moderate and low intensity mitigation solutions, examples can include: • Utilizing non-standard construction methodology to avoid tree removal, replanting, and environmental degradation. • Restoring degraded ecosystems or creating new habitats off-site from the project. • Changing project alignment or site location after the Project Definition phase.

Appendix D – Project Impact Mitigation Template

The template is a separate document where information can be entered based on the instructions below. The intent of this template is to capture all identified impacts and mitigations applied to a project.

Collaboration with members
Add the date of the collaboration period in the yellow cell to track ongoing collaboration with members. Grouped columns to the right of "Initial Identification" will help with documenting subsequent discussions and refinements.



Review the **Impact Assessment Tool** in **Appendix B** of the Guide. Under section Initial Identification of Impacts and Mitigations check Low, Medium, or High for the level of impact(s) determined for each Category.

#	Impact Category	Low Level of Impact	Medium Level of Impact	High Level of Impact
1.	Access disruption to businesses and residential properties	Minimal or limited access disruption to businesses or residential properties are anticipated as a result of the planned works. Example: Some businesses or residential properties may experience some impact to reduced access points. Access disruptions can be resolved with minimal detours or accommodations.	Moderate/notable access disruption to businesses or residential properties are anticipated as a result of the planned works. Example: A substantial number of businesses or residential properties in the impacted area are anticipated to experience some reduction in access points. Access disruptions can be resolved with reasonable detours (e.g., no substantive change to business operation plans).	Substantial access disruption to businesses or residential properties are anticipated as a result of the planned works. Example: The majority of businesses and residential properties in the impacted area are anticipated to experience substantially less access via previous access points. Only available resolutions include major detours or accommodations (e.g., changing access hours, mode of access,etc.).

Review the **Mitigation Library** in **Appendix C** of the Guide. Under section Initial Identification of Impacts and Mitigations check Low, Medium, or High for the level of mitigation solutions(s) determined for each Category.

#	Mitigation Category	Low Intensity Level of Mitigation Solution	Medium Intensity Level of Mitigation Solution	High Intensity Level of Mitigation Solution
1.	Access disruption to businesses and residential properties	Mitigation measures seek to better understand and provide advanced notice of access disruptions to businesses and residential properties within the impacted area. Example: • Providing ample notice to businesses and residents about upcoming construction projects, including details about the duration, scope, and	Mitigation measures seek to implement temporary measures which offset or provide alternative access options to businesses and residential properties within the impacted area. Example: In addition to the potential Low Intensity Mitigation Solutions, examples can include: • Implementing temporary access during construction such as bridges or	Mitigation measures require major changes to standard or typical construction schedule and methodology, requiring additional costs and management oversight. Example: In addition to the potential Moderate and Low Intensity Mitigation Solutions, examples can include: • Utilize alternate construction methodology. • Changing project alignment or site location after Project

Note: Each category includes examples of what a high, medium, and low intensity mitigation solution could look like to help determine the best solution for the impact identified in that category.

Establish the impact and mitigation solutions that will be used to inform the design and fill out the **Impact and Mitigation Description, Estimated Cost of Mitigation Measure,** and **Estimated Duration of Mitigation Solution** under the Initial Identification of Impacts and Mitigations section for each of the categories.

Collaborate with member jurisdictions on the level of impact and level of mitigation solutions determined, and confirm the impacts and solutions that have been established.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To: Water Committee and Liquid Waste Committee

From: Jennifer Crosby, Director, Project Management Office, Project Delivery
Nermine Tawfik, Supervisor Community Engagement, External Relations

Date: June 21, 2023 Meeting Date: July 12, 2023
July 19, 2023

Subject: **Guide to Metro Vancouver Utility Capital Projects for Member Jurisdictions and Impact Mitigation Framework**

RECOMMENDATION

That the GVWD and GVS&DD Boards receive for information the report dated June 21, 2023 titled "Guide to Metro Vancouver Utility Capital Projects for Member Jurisdictions and Impact Mitigation Framework".

EXECUTIVE SUMMARY

Metro Vancouver currently mitigates and compensates member jurisdictions for the impact of projects taking place within their jurisdiction through various means, which are generally negotiated on a case-by-case basis. Mitigation and compensation for member jurisdictions may take the form of changes to a design resulting in higher project costs, addition of community amenities, upgrades to member's infrastructure, provision of resources to our members to handle increased workload resulting from our projects, as well as payment of fees for various permits, lost revenue, letters of credit, and other charges.

Metro Vancouver staff continue to work with member jurisdictions to review practices with a goal to create a predictable, consistent and equitable approach to mitigating and compensating member jurisdictions for the impacts to their community during construction of region-serving infrastructure. This report provides an update on this work, including publishing the *Guide to Metro Vancouver Utility Capital Projects for Member Jurisdictions.*

PURPOSE

To provide the GVWD and GVS&DD Boards an update on progress with developing an equitable impact mitigation framework for member jurisdictions in which Metro Vancouver is undertaking capital project construction, including publishing the *Guide to Metro Vancouver Utility Capital Projects for Member Jurisdictions* (Attachment 1).

BACKGROUND

Each year, Metro Vancouver delivers projects to ensure that the region has reliable access to clean drinking water, safe wastewater removal and treatment, and waste disposal and recycling. The purpose of delivering these services on behalf of the members is to provide infrastructure at a scale that is more efficient than if each member or participant delivered the services separately. As a result, the services offer efficiencies that benefit all members. Members participate in the core services based on the understanding that not only will the benefits of the service be equitably

shared amongst participants, but the impacts and costs of delivering those services are also equitably shared.

Over the years, members have raised concerns regarding impacts to their communities through noise, dust, and traffic disruption, as well as impacts to their staffing time and resources due to capital project construction. Currently, impacts and corresponding mitigation measures are negotiated on a case-by-case basis with the member jurisdiction within which the construction project is taking place. This has resulted in unequal levels of compensation and mitigation to our members as well as unpredictable material impacts to the scope, schedule, and budget of Metro Vancouver capital projects.

In 2018, the Metro Vancouver Board rescinded the existing Capital Projects Policy and recommended that Metro Vancouver staff work with advisory committees to develop a capital projects framework, which would capture the approach and process of how Metro Vancouver utility capital projects are planned, managed, and communicated. Since then, Metro Vancouver has been engaging with member jurisdictions through a Regional Engineers Advisory Committee (REAC) working group consisting of members from the City of Coquitlam, District of North Vancouver, and the cities of Surrey and Vancouver, along with Metro Vancouver staff. The group discussed many important topics and issues and made practical suggestions toward creating more equitable and consistent approaches to improve the processes and communication between our organizations.

The working group came to agreement on a number of improvements and also identified areas where consensus was not possible. Some of the improvement solutions related to stronger coordination and communication have been implemented through a process Metro Vancouver staff just piloted with the City of New Westminster and are now implementing with the City of Burnaby. Recommendations related to improved tendering and procurement are being implemented on current projects. The balance of recommended improvement solutions/ideas (where there was and was not consensus) will be progressed through development of two key deliverables, which are further discussed in the following sections.

Guide to Metro Vancouver Utility Capital Projects for Member Jurisdictions

A guide has been developed to describe the phases of most Metro Vancouver utility capital projects and provides a high-level, consistent, and transparent roadmap that will help member jurisdictions plan their involvement in a Metro Vancouver utility capital project. It identifies the key responsibilities and decision points for both Metro Vancouver and member jurisdiction staff throughout the project lifecycle (from initiation through to close out). The audience for the guide is Metro Vancouver and member jurisdictions staff involved with Metro Vancouver water, liquid waste, and solid waste utility capital projects. The guide describes current practices only, not desired or future state, Metro Vancouver, in collaboration with member jurisdictions, consultants, and contractors is actively and continuously improving these practices and the guide will be updated periodically to reflect changes.

The guide was shared with all REAC members at the Metro Vancouver Conference Day held on May 12, 2023. The document will be available to member jurisdictions staff through the Metro Vancouver website.

Impact Mitigation Framework

In a report to the GVWD and GVS&DD Boards at their October 28, 2022 meeting (Attachment 2), Metro Vancouver staff outlined some of the current issues related to mitigation and compensation practices for Metro Vancouver capital projects construction. Building upon the outcomes from the REAC working group, an impact mitigation framework will be developed to enable predictable, consistent, and equitable approaches to mitigating construction impacts to their communities during construction. This will allow Metro Vancouver to strengthen its relationships with member jurisdictions and the public. The specific objectives for this work include:

- Clarify expectations for how Metro Vancouver and member jurisdictions work together to deliver regional infrastructure
- Standardize the process for assessing and mitigating the impacts of utility capital projects on member jurisdictions
- Reduce risk and uncertainty related to the delivery of Metro Vancouver utility capital projects which in turn reduces impacts on costs and schedules

To support this, Metro Vancouver has outlined a three-part facilitated workshop series with all REAC members starting in 2023 as follows:

Workshop 1 **May 12, 2023 - COMPLETE**	**Workshop 2** **Target Q4 2023**	**Workshop 3** **TBD**
Purpose: Explore the impacts of Metro Vancouver capital projects construction on member jurisdictions	**Purpose**: Share Metro Vancouver's tools and approaches for identifying impacts and improving intergovernmental coordination Build a framework for mitigation practices (guiding principles, impact assessment tool, defining mitigation)	**Purpose**: Revise and finalize the framework for mitigation practices
Outcome: Establish a shared understanding of the impacts of capital projects construction	**Outcome**: Identify elements of an equitable framework	**Outcome**: Framework to be presented to RAAC and Metro Vancouver Boards

The workshop on May 12 was attended by 25 REAC and REAC Subcommittee members representing 17 out of 21 GVWD and GVS&DD members. Following a short contextual presentation, members participated in a facilitated discussion to identify the impacts of Metro Vancouver's capital project construction, from project initiation through to close-out, and discussed the magnitude and

complexity of these impacts. Participants shared their experiences and the group heard diverse perspectives from each member jurisdiction.

The workshops are intended to be an iterative process to inform the framework development. Metro Vancouver staff will integrate feedback from the workshops and prior discussions from the REAC working group into recommended guiding principles and approaches to different forms of mitigation to develop a predictable, equitable, and consistent regional approach. The proposed framework will go to REAC and Regional Administrators Advisory Committee (RAAC) prior to coming to the Water and Liquid Waste Committees and the GVWD and GVS&DD Boards for review and approval.

ALTERNATIVES
This is an information report. No alternatives are presented

FINANCIAL IMPLICATIONS
The development of standardized, region-wide approaches to mitigation and compensation for projects undertaken in member jurisdictions would help to manage project costs, maintain project schedules, mitigate scope creep and change orders on construction projects, as well as ensure a transparent and equitable approach across all member jurisdictions.

CONCLUSION
Metro Vancouver is committed to the continuous improvement of its processes and coordination with member jurisdictions to deliver regional capital projects efficiently and cost effectively, and to mitigate the impacts of these projects. Development of the *Guide to Metro Vancouver Utility Capital Projects for Member Jurisdictions* is now complete and has been shared with REAC at the Metro Vancouver Conference Day on May 12, 2023 as well as RAAC on June 22, 2023.

The first workshop on May 12, 2023 is one of a three-part workshop series with REAC to engage with members on the development of a framework for mitigation practices for member jurisdictions in which Metro Vancouver is undertaking capital project construction. Planning is underway to prepare for the second workshop, which is targeted to be held in Q4 2023.

~~**Attachments**~~
1. ~~Guide to Metro Vancouver Utility Capital Projects (59308623)~~
2. ~~Compensation Practices Related to Metro Vancouver's Delivery of Projects, report dated September 28, 2022 (53943312)~~
3. ~~Guide to Metro Vancouver Utility Capital Projects for Member Jurisdictions and Impact Mitigation Framework - Presentation~~

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Attachment 4

MV Utility Capital Projects - Construction Impact Mitigation Framework

Jennifer Crosby, P. Eng.
Director - Project Management Office
Project Delivery Department

Brianne Zimmermann
Sr. Regulatory Analyst
Project Delivery Department

Water Committee Meeting – November 6, 2024

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OBJECTIVES

1. Provide progress update
2. Share feedback from MV Conference Day and REAC / RAAC Survey Responses
3. Discuss next steps


Tunnel Boring Machine and Loading System

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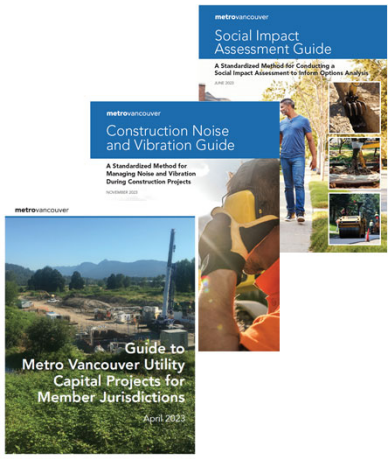
MV CAPITAL PROJECT PLANNING AND DELIVERY

Improving coordination and communication during the planning and delivery of regional infrastructure projects in member jurisdictions

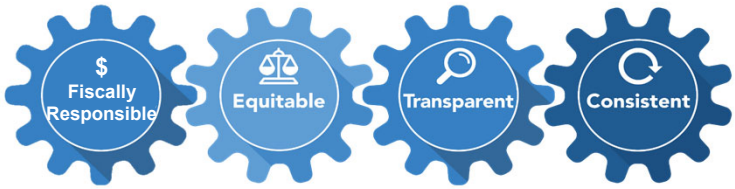
Completed works by MV:

- Utility Capital Projects Guide
- Project Coordination Reference Guide
- Noise and Vibration Guide
- Social Impact Assessment
- **Impact Mitigation Framework**



IMPACT MITIGATION FRAMEWORK

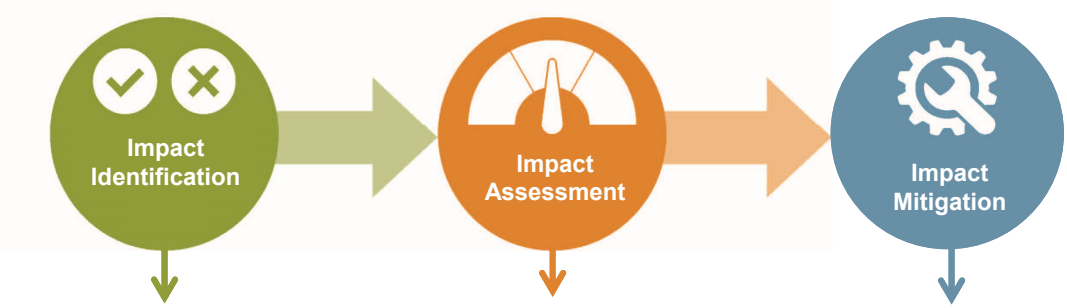
Guiding Principles & Project Objectives



- **Clarify expectations** for how Metro Vancouver and member jurisdictions work together to deliver regional infrastructure
- **Standardize the process** for assessing and mitigating the impacts of utility capital projects on member jurisdictions
- **Reduce risk and uncertainty** related to the delivery of Metro Vancouver utility capital projects which in turn reduces impacts on costs and schedules

IMPACT MITIGATION FRAMEWORK

High Level Process Overview



Identify the impacts of a utility capital project on member jurisdiction(s)

Determine the magnitude of the impact on member jurisdictions

Mitigate the impacts to member jurisdictions

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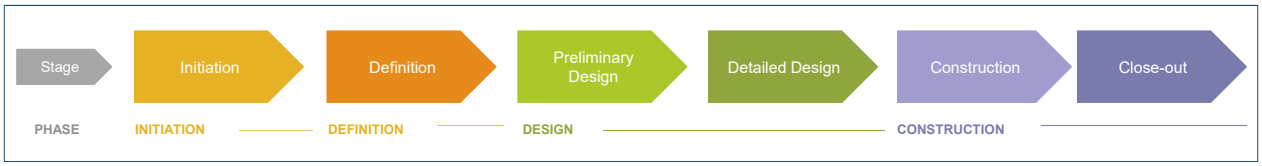
HOW THE FRAMEWORK WILL BE USED

Applied iteratively over the project lifecycle with member jurisdiction involvement



With input from member jurisdictions, project teams assess social, environmental and financial considerations to **identify** recommended project approach, including site/alignment.

Construction Impact Mitigation Framework

Project teams **confirm** anticipated construction impacts and mitigations in discussion with member jurisdictions and incorporate into construction contract.

Standardized templates used to **document** anticipated impacts and preferred options to avoid, minimize, or offset impacts.

Project teams **monitor** mitigation effectiveness and control quality measures in discussion with members.

Project impacts and mitigations are documented and used to **inform** future capital projects and refine framework.

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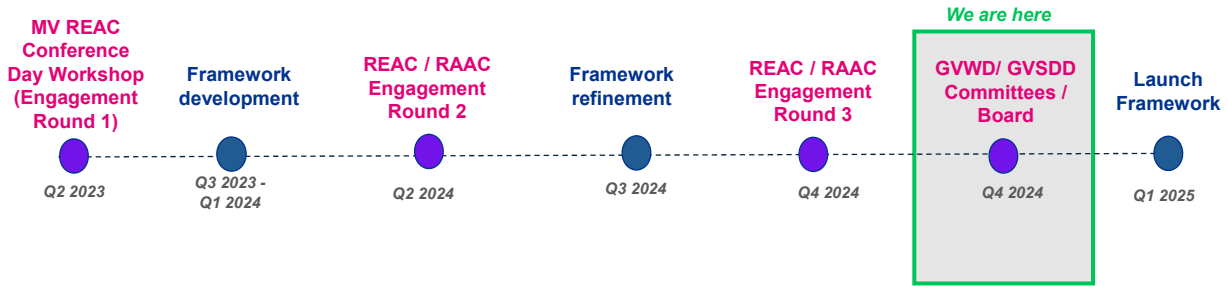
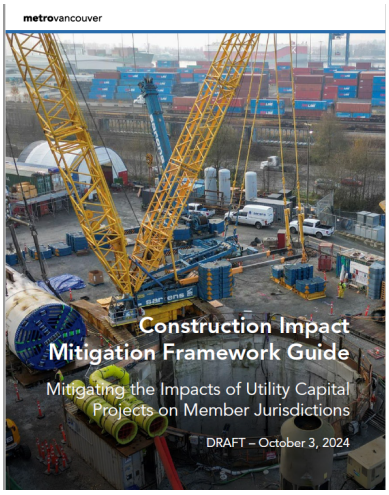
IMPACT MITIGATION FRAMEWORK WORK PLAN



IMPACT MITIGATION FRAMEWORK

Deliverables

1. Core Deliverables ✓
   a. Impact Assessment Tool
   b. Impact Mitigation Library
2. Supporting Deliverables ✓
   a. Framework Guide
   b. Framework Templates
   c. Utility Capital Projects - Permitting Fact Sheet



REAC & RAAC ROUND 2 & 3 ENGAGEMENT SUMMARY

- Presentation to REAC and RAAC – May 3; May 23
- Presentation & Open House at MV Conference Day – June 7
- Online Feedback Survey sent to REAC and RAAC (Open May 3 to June 14)
- Presentation to REAC and RAAC – October 4; Oct 15
  - ➢ Overall positive feedback including appreciation for the development of the framework.
  - ➢ Support for consistent approach and fiscal responsibility to mitigating impacts to all members.

MEMBER FEEDBACK: WHAT WE HEARD

Changes Made to Impact Assessment Tool & Mitigation Library

1. Clarified impacts to non-MV utilities to include roadway infrastructure including reference to MV Board Policy Pavement Restoration for Sewer and Water Main Installations
2. Expanded traffic mitigation examples to include intersection modification, signal changes, enhanced intersection control
3. Revised access mitigation examples to reference access for emergency services and waste/ recycling collection
4. Revised bike trail/routes impact category to include pedestrian trails/ routes

The **framework is expected to be refined over time** as projects are completed and mitigations are monitored and documented. This may include edits to the description of impacts and mitigation examples.

MEMBER FEEDBACK: WHAT WE HEARD

Language Incorporated into the Framework Guide

1. Framework enables expedited decision-making and nimble responses to adapting and refining mitigations.
2. The collective suite of impacts and mitigations for the given project is to be evaluated; not necessary for each impact and mitigation intensity to match within a project or between projects.
3. Each utility capital project has an MV point of contact assigned.
4. There is a collaborative process to avoid, minimize and mitigate construction impacts; in some cases this will result in a “build back better” approach.
5. Monitoring quality and effectiveness of the impact mitigation measures during construction and refining mitigation measures if initial plans are insufficient, or if there is a change in construction schedule or scope.
6. Early collaboration with member jurisdictions on MV utility capital projects is enabled through various MV and member jurisdiction activities throughout the project lifecycle.

MEMBER FEEDBACK: WHAT WE HEARD

Out of Scope of Framework or Addressed Elsewhere

Feedback	Response
Broaden scope to include impacts or opportunities related to municipal planned work such as streetscape and greenway projects	MV engages annually on the capital program with members at municipal coordination meetings which enables coordination of schedules. MV works with member jurisdictions to align restoration efforts with municipal plans for streetscapes and greenways. MV considers incorporation of Member jurisdiction requested and funded scope into MV utility capital projects through Coordinated Works Agreements where appropriate.
Assessing and managing cumulative impacts of multiple MV projects on a member jurisdiction	The framework is intended to support individual projects. Accounting for impacts across a portfolio of projects to a member jurisdiction is out of scope for this initial version of the Framework.
Provision of funding for facilitating, approving and monitoring member permitting processes	Permit fees are intended to cover these costs. Members have the option to delegate BC Building Code oversight to a qualified professional. In the Guide to the framework, it is noted that for large projects, custom agreements can be developed to formalize submission requirements, approvals, fees, timelines and resource commitments.

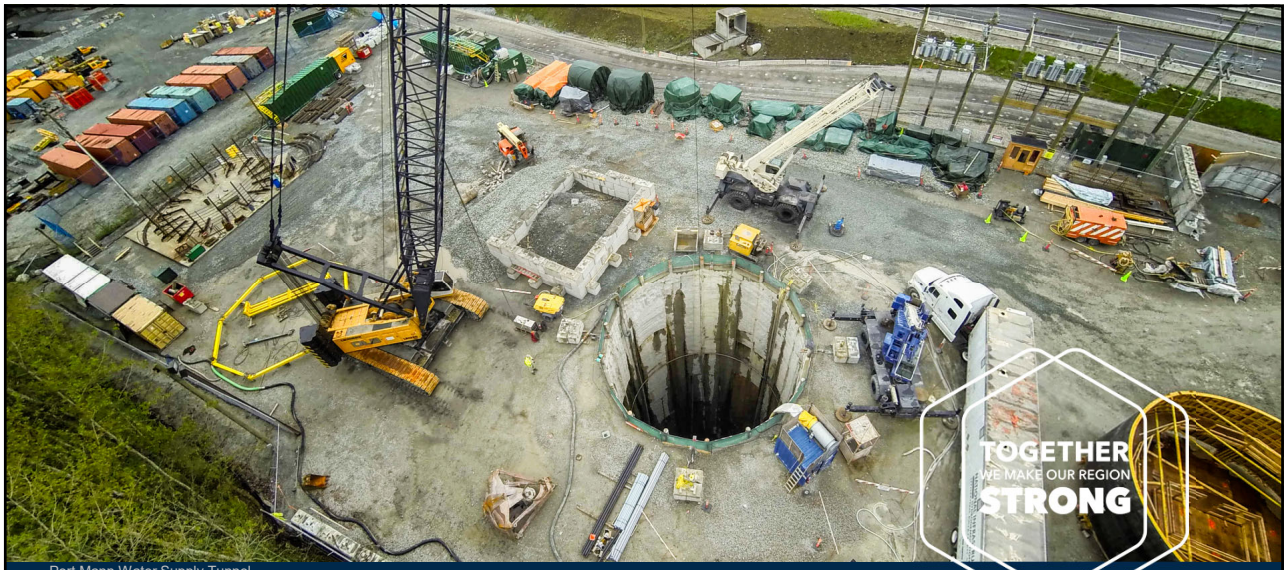
MEMBER FEEDBACK: WHAT WE HEARD (CONT'D)

Out of Scope of Framework or Addressed Elsewhere

Feedback	Response
Consistent, transparent and equitable approach for quantifying land use impacts **Concerns related to compensation for hosting infrastructure on land not designated for profitable development e.g. parkland** **Concerns for the unfair burden of hosting multiple MV infrastructure projects**	MV is considering establishing principles for assessing above-ground loss of use methodology. Currently, compensation may be payable if the land in question is investment land or if they are required for future municipal development lands. If compensation is payable, Metro Vancouver will compensate member jurisdictions for acquisition of land rights following the guiding principles of consistency, equity, transparency, and fiscal responsibility. In cases where Metro Vancouver requires land rights from members for a project, the tax payer should not be expected to pay for those lands which are already in the public realm, and where lands will be returned to the same general use following the project's completion.
Weighting criteria for the impact categories	The framework is intended to be a tool to enable collaboration between MV and Members. Due to the variability in impacts felt by members for each project scope and location, no weighting criteria has been included at this time.
Compensation in lieu of mitigations(s) or transferring responsibility for impact mitigation (e.g. site restoration) to member jurisdictions	MV is responsible for mitigating construction impacts due to utility capital projects. Requests for compensation in lieu of mitigations(s) will be handled on a case-by-case basis.

KEY TAKEAWAYS

1. Framework developed with input from RAAC, REAC and MV staff
2. Overall positive feedback received with some opportunities for future continuous improvement
3. Next Steps:
    1. Nov 2024 – Present Framework to GVS&DD and GVWD Committees and Boards
    2. Q1 2025 – Framework launched to MV and Member Staff



Port Mann Water Supply Tunnel

Thank you

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COMMITTEE INFORMATION ITEMS AND DELEGATION SUMMARIES

Greater Vancouver Water District
Board Meeting Date – Friday, November 29, 2024

This information item, listing recent information received by committee, is provided for the GVWD Board's information. Please access a complete PDF package here.

Water Committee – October 6, 2024

Delegations:
No delegations presented

Information Items:
E1 Summer 2024 Water Supply Performance
E2 2024 Water Conservation Communications and Public Outreach Results
E4 Water Supply Tunnel Projects Updates