

**METRO VANCOUVER REGIONAL DISTRICT  
WATER COMMITTEE  
SPECIAL MEETING**

**Wednesday, November 26, 2025**

**9:00 am**

**28<sup>th</sup> Floor Committee Room, 4515 Central Boulevard, Burnaby, British Columbia**

The purpose of this meeting is to workshop the Drinking Water Management Plan.

**A G E N D A**

**A. ADOPTION OF THE AGENDA**

**1. November 26, 2025 Special Meeting Agenda**

That the Water Committee adopt the agenda for its special meeting scheduled for November 26, 2025 as circulated.

**B. REPORTS FROM COMMITTEE OR CHIEF ADMINISTRATIVE OFFICER**

**1. Drinking Water Management Plan Update**

*pg. 3*

**Executive Summary**

Metro Vancouver has been working with member jurisdictions, First Nations, and interest holders over the past three years to update its *Drinking Water Management Plan* (DWMP) which sets the strategic direction for the region's drinking water system over the next decade. The update responds to emerging challenges including climate change impacts, seismic risks, aging infrastructure, and population growth. To continue to supply high quality drinking water in the face of future challenges and uncertainty, Metro Vancouver is increasing water supply through the *Coquitlam Lake Water Supply project* and reducing per capita drinking water demands through the proposed strategies and actions in the DWMP.

The Regional Engineers Advisory Committee (REAC) and the REAC Water-Subcommittee have been engaged in co-developing updated strategies and actions for the DWMP. Feedback from the Water Committee will be incorporated into the updated version of the plan. The plan is scheduled for final review by the Water Committee in early 2026 and subsequent consideration by the Greater Vancouver Water District (GVWD) Board for adoption.

**Recommendation**

That the Water Committee receive for information the report dated November 17, 2025, titled "Drinking Water Management Plan Update".

**C. RESOLUTION TO CLOSE MEETING**

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

**D. ADJOURNMENT**

That the Water Committee adjourn its special meeting of November 26, 2025.

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Membership:

West, Brad (C) – Port Coquitlam  
Sager, Mark (VC) – West Vancouver  
Albrecht, Paul – Langley City  
Baillie, Tim – Langley Township  
Bell, Don – North Vancouver City

Cassidy, Laura – scəwáθən məsteyəx<sup>w</sup>  
(Tsawwassen First Nation)  
Guichon, Alicia – Delta  
Hodge, Craig – Coquitlam  
Keithley, Joe – Burnaby

Little, Mike – North Vancouver District  
MacDonald, Nicole – Pitt Meadows  
Meiszner, Peter – Vancouver  
Stutt, Rob – Surrey

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To: Water Committee

From: Linda Parkinson, Director, Policy, Planning and Analysis, Water Services

Date: November 17, 2025 Meeting Date: November 26, 2025

Subject: **Drinking Water Management Plan Update**

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## RECOMMENDATION

That the Water Committee receive for information the report dated November 17, 2025, titled “Drinking Water Management Plan Update”.

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## EXECUTIVE SUMMARY

Metro Vancouver has been working with member jurisdictions, First Nations, and interest holders over the past three years to update its *Drinking Water Management Plan* (DWMP) which sets the strategic direction for the region’s drinking water system over the next decade. The update responds to emerging challenges including climate change impacts, seismic risks, aging infrastructure, and population growth. To continue to supply high quality drinking water in the face of future challenges and uncertainty, Metro Vancouver is increasing water supply through the *Coquitlam Lake Water Supply project* and reducing per capita drinking water demands through the proposed strategies and actions in the DWMP.

The Regional Engineers Advisory Committee (REAC) and the REAC Water-Subcommittee have been engaged in co-developing updated strategies and actions for the DWMP. Feedback from the Water Committee will be incorporated into the updated version of the plan. The plan is scheduled for final review by the Water Committee in early 2026 and subsequent consideration by the Greater Vancouver Water District (GVWD) Board for adoption.

## PURPOSE

To provide the Water Committee the opportunity to review and discuss the proposed strategies and actions in the *Drinking Water Management Plan* at the November 26, 2025 Water Committee special meeting.

## BACKGROUND

Metro Vancouver is updating the DWMP which is the guiding document for Metro Vancouver’s drinking water utility, establishing priorities and setting strategic direction for the next ten years.

Since the adoption of the 2011 DWMP, Metro Vancouver has continued with its programs to expand the drinking water system and complete necessary upgrades. This update of the DWMP is focused on how Metro Vancouver and member jurisdictions can work together to ensure the continued supply of high-quality drinking water in the face of increasing uncertainty and emerging challenges. These challenges include population growth, the impacts of climate change, and aging water infrastructure.

The proposed plan includes goals, strategies, and actions for both Metro Vancouver and its member jurisdictions. REAC and the REAC Water subcommittee have been extensively engaged in co-developing updated strategies and actions for the DWMP.

### **DEVELOPMENT OF THE UPDATED DWMP**

The plan update has been ongoing since 2020 through a phased approach. During Phase 1, Metro Vancouver conducted a gap analysis review of the 2011 DWMP to identify successes and opportunities for improvement in the new update as well as develop the DWMP guiding principles and goals. During Phase 2, Metro Vancouver worked with member jurisdictions, First Nations, and interest holders to draft strategies and actions that detail how to achieve the plan's goals. Phase 3, which begins in Q4 2025, involves drafting the plan and conducting a final phase of public engagement. The final plan is currently scheduled for final review by the Water Committee in early 2026 with subsequent consideration by the GVWD Board for adoption.

The proposed strategies and actions are grouped into the following five priority areas to align with the regional water system's most pressing challenges and anticipated future needs. Attachment 1 provides a list of all the strategies and actions under each priority area:

- Priority area: Resilient Water System
- Priority area: Water Supply Quantity and Quality
- Priority area: Conservation and Efficiency
- Priority area: Environmental Protection and Enhancement
- Priority area: Operational Workforce Development

The proposed strategies and actions emphasize optimizing existing resources—water, infrastructure, and workforce—while maintaining high-quality service, reducing environmental impacts, and remaining financially prudent. Consistent with this approach, the proposed strategies and actions prioritize water use efficiency and conservation over costly infrastructure expansion wherever possible. This includes actions focused on building resilience, reducing per capita water use, and improving operational performance to ensure the region meets its long-term needs efficiently.

Following the review of the draft strategies and actions by the Water Committee on November 26, feedback from the Committee will be incorporated into a final draft scheduled to be brought back to the Water Committee in early 2026, prior to progressing to the GVWD Board.

### **Engagement with the Committee To Date**

The Water Committee received a DWMP progress update report in June 2025, including the proposed strategies and actions, in advance of Phase 2 public engagement during summer of 2025. Committee members provided initial feedback at the meeting which included comments about ensuring fiscal responsibility is highlighted in the plan, and questions about metering, rates, demand, training, and the transmission system capacity to deliver water south of the Fraser. To address feedback and questions, and to prepare Committee members for their discussion at the November special meeting, starting in September, a series of three reports were brought to the Committee. The reports provided background information and context to help Committee members understand the data driving the proposed strategies and actions. These reports provided:

- September: Current and historical data on how drinking water is used, and the status of metering in the region (Attachment 2)
- October: An overview of the key drivers that have recently motivated some member jurisdictions to advance water metering more broadly in their jurisdictions (Attachment 3)
- November: Factors that influence long-term planning for the regional water system and how the utility is responding to the uncertainty and unpredictability associated with long-term planning (Attachment 4)

The information presented to the Committee members sparked discussion, leading to additional questions and requests for information. Responses to these requests are included in Attachment 5 of this report.

### **ALTERNATIVES**

This is an information report. No alternatives are presented.

### **FINANCIAL IMPLICATIONS**

There are no financial implications.

### **CONCLUSION**

Updating the DWMP is essential to ensure a resilient and efficient regional water system for future generations. The proposed strategies and actions from the draft updated DWMP are attached to this report. Following review and discussion of the proposed strategies and actions, feedback from the Committee will be used to finalize the DWMP for GVWD Board consideration in Q2 2026.

### **ATTACHMENTS**

1. Drinking Water Management Plan Priority Areas, Strategies, and Actions.
2. "Factors Influencing Long-Term Water Planning", dated October 30, 2025.
3. "Renewed Drivers for Advancing Water Metering in Metro Vancouver", dated October 8, 2025.
4. "Current Water Use Metrics and Status of Metering in the Region", dated September 10, 2025.
5. Responses to Questions from Water Committee members from Previous Meetings.
6. Presentation re: The Draft Drinking Water Management Plan.

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# DRINKING WATER MANAGEMENT PLAN

## 5 Goals



**Goal 1**  
Provide high-quality drinking water



**Goal 2**  
Provide uninterrupted drinking water service



**Goal 3**  
Manage the drinking water system in a cost-effective way



**Goal 4**  
Manage water to protect and enhance the environment for all



**Goal 5**  
Develop and attract a skilled workforce

## 5 Priority Areas



Resilient water system



Water supply quantity and quality



Environmental protection and enhancement

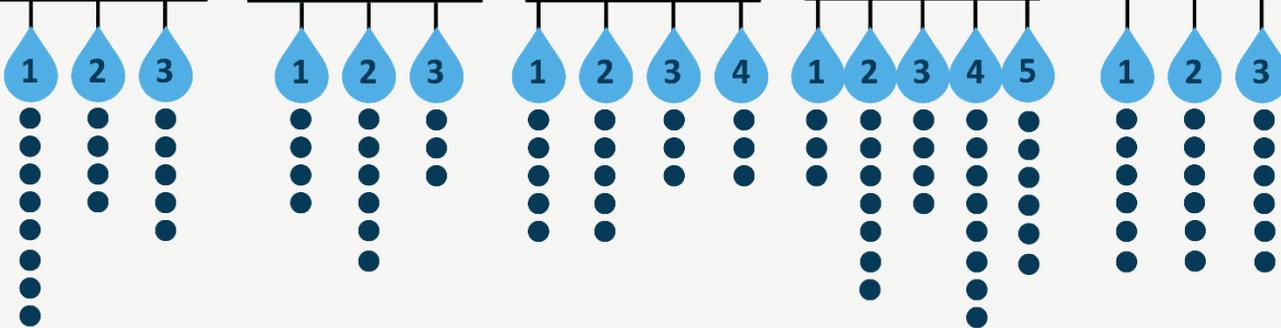


Conservation and efficiency



Operational workforce development

## 18 Strategies



## 92 Actions

## DWMP Priority Areas, Strategies and Actions

Metro Vancouver's Drinking Water Management Plan sets the long-term direction for maintaining a resilient, high-quality, and reliable drinking water system for a growing region.

The strategies and actions under each Priority Area describe how Metro Vancouver and its member jurisdictions will work together to plan for growth, adapt to climate change, strengthen system reliability, and ensure the efficient use of every drop of water. The strategies and action also emphasize fiscal responsibility and the need to keep drinking water affordable for residents and businesses across the region.

Each Priority Area represents a key theme that organizes how Metro Vancouver manages the regional drinking water system. Together, they capture the major focus areas of the plan: **Resilient Water System, Water Supply Quantity and Quality, Conservation and Efficiency, Environmental Protection and Enhancement, and Operational Workforce Development**. These interconnected areas guide planning, investment, and collaboration across the regional water system.

## Priority Area – Resilient Water System

This area addresses how Metro Vancouver designs, operates, and maintains its infrastructure to withstand climate extremes, natural hazards, and emergencies. The strategies focus on planning for resilience to natural hazards and climate change, responding and recovering effectively from emergencies, managing existing infrastructure for longevity, and designing new infrastructure for a resilient future. These actions emphasize seismic preparedness, system redundancy, asset renewal, and reliable emergency response to ensure the continued delivery of high-quality drinking water under all conditions.

<b>Strategy 1: Advance Planning and Designing for Resilient Infrastructure</b>		
<b>#</b>	<b>Action</b>	<b>Responsible</b>
1	Increase the seismic resilience of the water system by conducting prioritized structural analysis to identify seismic vulnerabilities.	Metro Vancouver
2	Increase the automation of the seismic response for the water system including automatic shutoffs throughout the distribution system and automated building damage assessments.	Metro Vancouver
3	Coordinate with member jurisdictions to identify points of failure due to seismic activity in the transmission and distribution systems to support the planning of upgrades and redundancy.	Metro Vancouver and Member Jurisdictions
4	Assess and protect infrastructure vulnerabilities to extreme heat, wildfires, floods, landslides, seismic activity, winter storms, and other emerging hazards to support the development and implementation of an infrastructure resiliency framework and inform infrastructure upgrades.	Metro Vancouver
5	Increase water system redundancies and flexibility to prepare for the possibility of infrastructure failures.	Metro Vancouver
6	Integrate climate resiliency design standards into infrastructure planning and design.	Metro Vancouver
7	Develop a coordinated approach to planning and constructing utilities in the shared right of ways with members, First Nations and other utilities.	Metro Vancouver and Member Jurisdictions
8	Improve power resilience through a diverse portfolio of energy sources, energy efficiency, and capacity management opportunities, including potential storage options.	Metro Vancouver

<b>Strategy 2: Respond and Recover from Emergencies</b>		
<b>#</b>	<b>Action</b>	<b>In Practice</b>
1	Define supply commitments in the event of an emergency.	Metro Vancouver and Member Jurisdictions
2	Collaborate with member jurisdictions to implement the Regional Temporary Provision of Drinking Water Guideline.	Metro Vancouver and Member Jurisdictions
3	Strengthen emergency preparedness, security, and business continuity through regular updates of the security and emergency plans.	Metro Vancouver
4	Coordinate emergency preparedness and response with member jurisdictions, First Nations and other levels of government (i.e. Federal and Provincial government).	Metro Vancouver and Member Jurisdictions

<b>Strategy 3: Proactively Manage Existing Infrastructure for Longevity</b>		
<b>#</b>	<b>Action</b>	<b>Responsible</b>
1	Continue the implementation of the Water Services Asset Management Plan in accordance with international standards and industry best practices.	Metro Vancouver
2	Strengthen internal asset management capabilities and resourcing through developing in-house task analysis and reliability programs.	Metro Vancouver
3	Implement a comprehensive spare parts strategy by establishing a centralized management system with expanded inventory for critical infrastructure and developing proactive replacement plans for assets lacking manufacturer support.	Metro Vancouver
4	Evaluate dam capacity and debris management practices to ensure resilience against extreme weather and landslide events and identify necessary capital improvements to implement remedial measures.	Metro Vancouver
5	Improve field staff experience (utility, ease of use and access, efficiency, reliability) with asset documentation including drawings, enterprise asset management software, and digital field applications for data collection.	Metro Vancouver

#### **Priority Area – Water Supply Quantity and Quality**

This priority area focuses on ensuring a reliable supply of high-quality drinking water. It includes strategies to prepare for water quality changes caused by climate change and natural hazards, to protect and manage water quality throughout the system, and to plan for future drinking water demands. Together, these strategies strengthen source water protection, improve treatment and monitoring, and ensures that supply of high-quality, reliable drinking water continues to serve a growing population.

<b>Strategy 1: Prepare for water quality changes due to climate change and natural hazards</b>		
<b>#</b>	<b>Action</b>	<b>Responsible</b>
1	Assess risks to water supply areas from climate change and natural hazards by applying updated climate projections and scenario-based analysis to identify emerging threats to source water quality.	Metro Vancouver
2	Strengthen resilience to climate change by researching and applying emerging technologies and fostering knowledge sharing to enhance forest-management practices.	Metro Vancouver
3	Improve the ability to respond to rapid changes in source water quality by exploring treatment enhancements and increasing system interconnectivity.	Metro Vancouver
4	Assess and mitigate the impacts of rising water temperatures on treated water quality across the supply system.	Metro Vancouver

<b>Strategy 2: Protect and manage water quality</b>		
<b>#</b>	<b>Action</b>	
<b>1</b>	Enhance protection of water supply areas by implementing and enforcing access bylaws, defining conduct for work activities, and working with First Nations to address access for cultural practices while safeguarding source water quality.	Metro Vancouver
<b>2</b>	Improve water quality at in-system reservoirs by enhancing circulation and optimizing turnover and maintenance.	Metro Vancouver
<b>3</b>	Members to implement operational practices that enhance reservoir turnover by prioritizing withdrawal from reservoirs over transmission pipes.	Member Jurisdictions
<b>4</b>	Integrate water quality planning into transmission modelling, infrastructure-strategy development, and the design and delivery of transmission projects.	Metro Vancouver
<b>5</b>	Integrate water quality monitoring stations into the asset-management portfolio to support long-term monitoring reliability.	Metro Vancouver
<b>6</b>	Members to protect water quality in local distribution systems by implementing a regional cross-connection control approach and collaborating with Metro Vancouver to optimize water quality.	Member jurisdictions

<b>Strategy 3: Prepare for future drinking water supply and demands</b>		
<b>#</b>	<b>Action</b>	<b>Responsible</b>
<b>1</b>	Use adaptive planning to refine the timing of future supply increments.	Metro Vancouver
<b>2</b>	Investigate changes in drinking water demand across different sectors to support accurate modelling of future demand forecasts.	Metro Vancouver
<b>3</b>	Develop a Drought Response Plan to manage water supply during potential multi-year droughts.	Metro Vancouver

## Priority Area – Environmental Protection and Enhancement

This priority area recognizes the close connection between drinking water, watersheds, and ecosystems. Its strategies focus on reducing greenhouse gas emissions, advancing ecological health and environmental stewardship across Metro Vancouver lands, and supporting healthy fish populations in the Capilano, Seymour, and Coquitlam river systems. By aligning drinking water management with environmental protection, Metro Vancouver is supporting a more sustainable, resilient, and vibrant region. This integrated approach safeguards public health and ecosystems, enhancing climate resilience, reducing pollution, conserving biodiversity, and preserving the natural landscapes and spaces that make our communities more livable and enjoyable.

<b>Strategy 1: Reduce GHG Emissions and Implement Energy Efficiency Measures</b>		
<b>#</b>	<b>Action</b>	<b>Responsible</b>
<b>1</b>	Develop and implement energy resilience measures that minimize impacts to the climate and environment where feasible by integrating low-GHG fuels and technologies, exploring fuel recycling, and addressing barriers to adoption.	Metro Vancouver
<b>2</b>	Develop and work towards clear and realistic carbon reduction targets for the water system using a scope-based carbon accounting approach.	Metro Vancouver
<b>3</b>	Support and prioritize the adoption of low carbon transportation assets and fuels to reduce carbon emissions.	Metro Vancouver
<b>4</b>	Optimize energy efficiency in the regional water system and utility operations to reduce energy-related emissions through research and strategic planning of renewable energy integration and generation opportunities.	Metro Vancouver
<b>5</b>	Implement fiscally responsible, low carbon procurement and construction practices to reduce emissions and prioritize sustainable solutions.	Metro Vancouver

<b>Strategy 2: Advance Ecological Health and Environmental Stewardship</b>		
<b>#</b>	<b>Action</b>	<b>Responsible</b>
<b>1</b>	Integrate ecological enhancement and carbon sequestration measures into the design and delivery of capital infrastructure projects where feasible to mitigate the environmental impacts of water infrastructure.	Metro Vancouver
<b>2</b>	Design and plan projects to minimize or avoid impacts to the surrounding environment through adoption of carbon neutral processes, technologies, and recycled materials where feasible.	Metro Vancouver
<b>3</b>	Support ecological health through integrated management of natural assets, ecological enhancement initiatives, and collaboration with strategic partners such as First Nations and member jurisdictions.	Metro Vancouver
<b>4</b>	Identify opportunities to reduce the impacts of natural hazards and protect water supply area ecosystems through continued risk assessments and develop strategies and solutions to address these risks.	Metro Vancouver
<b>5</b>	Collaborate with strategic partners, such as First Nations and technical associations, to deliver public education initiatives that promote ecological health and environmental protection.	Metro Vancouver

<b>Strategy 3: Support Healthy Fish Populations in the Capilano, Seymour, and Coquitlam River Systems</b>		
<b>#</b>	<b>Action</b>	<b>Responsible</b>
<b>1</b>	Increase high-quality fish habitat and support migration and spawning for native fish species by collaborating with strategic partners, such as First Nations and Fisheries and Oceans Canada, and sharing environmental monitoring efforts.	Metro Vancouver
<b>2</b>	Protect fish habitat and minimize spawning impacts by identifying feasible options for improving Metro Vancouver's ability to monitor and manage ramping rates and environmental flows.	Metro Vancouver
<b>3</b>	Manage the source reservoir supplies during the high demand period to support environmental flow needs in the fall, especially during drought conditions, and incorporate this consideration into operational planning.	Metro Vancouver

<b>Strategy 4: Minimize the Environmental Impacts of Leaks and Spills</b>		
<b>#</b>	<b>Action</b>	<b>Responsible</b>
<b>1</b>	Minimize leaks and spills from new and existing infrastructure, equipment, and operations by updating, developing, and applying design practices and further investigating options for diversion or treatment.	Metro Vancouver
<b>2</b>	Strengthen environmental and operational resilience by developing or improving environmental management programs and tools under the Environmental Management System, such as those that manage hydrocarbons or support wildlife.	Metro Vancouver
<b>3</b>	Develop and implement quantitative metrics and staff training to accompany the roll-out of new and updated environmental management programs.	Metro Vancouver

### **Priority Area – Conservation and Efficiency**

This area promotes reducing per capita drinking water demand and increasing operational efficiency throughout the regional system. Early in the DWMP update process, Metro Vancouver and members identified the need to define a regional per capita demand target to establish a goalpost that Metro Vancouver and members can work together to achieve. Building on the Assessment of Drinking Water Conservation Potential technical study, Metro Vancouver and members staff collaboratively developed the following target:

Metro Vancouver and members to work together to reduce total annual average demand to a maximum of 320 litres per capita per day by 2035.

The Assessment of Drinking Water Conservation Potential study identified actions to meet the target. The strategies and actions outlined below are recommended for members to achieve reduction targets.

The proposed strategies include active water conservation measures including leak identification and reduction and using water pricing structures to promote conservation, supported by targeted education, communication, and behaviour change campaigns. To drive down peak and seasonal demands, members and Metro Vancouver will work collaboratively to increase education, enforcement, and updating of water restrictions and local bylaws.

Water metering is a best practices tool to support active conservation and system efficiency. Advancing metering is considered a baseline strategy, given that most active conservation measures such as effective leak detection, customer behaviour change, pay by use rates, can only be implemented once metering is in place. Metro Vancouver and members identified targets for members to advance metering. This can be achieved through metering new builds, ensuring the Industrial, Commercial and Institutional sectors are fully metered, and advancing voluntary metering programs. Further success can be achieved through universal metering programs. Members are encouraged to increase their bulk and system meters to assist in identifying leaks and improve data for system management.

Continuing to advance the recovery and reuse of non-potable water and improving operational efficiency also play an important role in driving down demand for drinking water. Collectively, these actions help Metro Vancouver and its members optimize the performance and lifespan of existing infrastructure, support affordability, and contribute to a more sustainable, circular water economy.

<b>Strategy 1: Advance Water Metering to Support Conservation and System Efficiency</b>		
<b>#</b>	<b>Action</b>	<b>Responsible</b>
<b>1</b>	<p>Members to require metering, through local bylaws, on all new residential, industrial, commercial, and institutional construction, and one or more of the following, by 2028:</p> <ul style="list-style-type: none"> <li>• Properties undergoing major renovations</li> <li>• Properties undergoing utility service replacement</li> <li>• Properties participating in a voluntary metering program</li> <li>• Properties undergoing transfer of ownership</li> <li>• Properties with secondary or laneway suites</li> <li>• Existing meter-ready connections</li> </ul> <p>Connections with pools, hot tubs, and/or water features</p>	Member Jurisdictions
<b>2</b>	<p>Members to increase the percentage of drinking water that is metered (all sectors) by 2035, from 2021 levels:</p> <ul style="list-style-type: none"> <li>• In jurisdictions where less or equal to 25% of drinking water volume is metered, target to increase to 2.0 times that amount</li> <li>• If 26% to 50% of drinking water volume is metered, target to increase to 1.5 times that amount</li> <li>• If 51% to 75% of drinking water volume is metered, target to increase to 1.2 times that amount</li> <li>• If more than 76% of drinking water volume is metered, target to increase to 1.1 times that amount</li> </ul>	Member Jurisdictions
<b>3</b>	Develop metering implementation guidance and communication materials to support member jurisdictions in policy adoption, public engagement, and rollout	Metro Vancouver

<b>Strategy 2: Reduce Drinking Water Use through Active Conservation</b>		
<b>#</b>	<b>Action</b>	<b>Responsible</b>
1	Implement leakage reduction programs.	Member Jurisdictions
2	Advance region-wide drinking water conservation through targeted education, communication, and behaviour change campaigns.	Metro Vancouver and Member Jurisdictions
3	Metro Vancouver and members to work together to conserve drinking water by reducing seasonal demand through strengthening enforcement and updating water restrictions and local bylaws.	Metro Vancouver and Member Jurisdictions
4	Explore the use of water pricing structures that promote conservation, such as tiered and seasonal rates.	Metro Vancouver and Member Jurisdictions
5	Demonstrate and promote water use efficiency within regional/member facilities.	Metro Vancouver and Member Jurisdictions
6	Metro Vancouver to work with the Province to limit the use of once through cooling systems through the BC Plumbing Code.	Metro Vancouver
7	Progress a region-wide drinking water conservation program for the industrial, commercial, institutional, and agriculture sectors.	Metro Vancouver and Member Jurisdictions

<b>Strategy 3: Promote the Recovery and Reuse of Non-Potable Water</b>		
<b>#</b>	<b>Action</b>	<b>Responsible</b>
1	Collaborate with the Province, member jurisdictions, academic institutions, and industry partners to advance the adoption of non-potable water systems through advocacy, education, and applied research.	Metro Vancouver
2	Collaborate with member jurisdictions and First Nations to identify and pursue opportunities for non-potable water use in their communities through research, engagement, and pilot projects.	Metro Vancouver
3	Support member jurisdictions and First Nations to integrate non-potable water use into policies, bylaws, and operations.	Metro Vancouver
4	Implement non-potable water systems and use fit-for-purpose water where feasible in Metro Vancouver infrastructure and buildings.	Metro Vancouver

<b>Strategy 4: Optimize cost efficiency across operational and capital programs</b>		
<b>#</b>	<b>Action</b>	<b>Responsible</b>
1	Conduct post-project audits of design and construction to identify lessons learned and opportunities for cost efficiency.	Metro Vancouver
2	Develop equipment-level budgeting and reporting for major assets (e.g., pumps) to improve life cycle cost management.	Metro Vancouver
3	Optimize and expand Metro Vancouver's in-house capacity in design, construction management, and inspections for capital project delivery to reduce overall project cost.	Metro Vancouver
4	Explore innovative procurement strategies that integrate contractor involvement in the design process to optimize competition during tendering.	Metro Vancouver
5	Develop facility-level upgrade plans that coordinate the delivery of major and minor capital projects to optimize cost-effectiveness and minimize duplication of effort.	Metro Vancouver
6	Expand Metro Vancouver's bulk metering program to include the installation of meters on all new and replacement connections as well as unmetered existing connections, where feasible.	Metro Vancouver
7	Expand key performance indicators to promote long-term monitoring of financial performance.	Metro Vancouver

<b>Strategy 5: Increase Operational Efficiency</b>		
<b>#</b>	<b>Action</b>	<b>Responsible</b>
1	Develop key performance indicators for maintenance programs.	Metro Vancouver
2	Develop and implement automation strategies for the operations of the treatment and transmission system.	Metro Vancouver
3	Evaluate and implement opportunities to maximize beneficial use of treatment residuals and evaluate solutions to reduce residual production and improve dewatering to reduce transport costs.	Metro Vancouver
4	Develop a long-term strategy to reduce the number of future direct connections to enhance system efficiency.	Metro Vancouver
5	Foster stronger collaboration with member jurisdictions to enhance knowledge sharing, optimize operations across systems, and uphold the shared commitment to deliver high-quality drinking water to the region.	Metro Vancouver
6	Continue to identify non-regional assets in the transmission system and pursue asset transfer strategies with relevant members.	Metro Vancouver

### Priority Area – Operational Workforce Development

This priority area focuses on retention and recruitment of qualified water operators to ensure the continued safe and reliable delivery of drinking water. The strategies emphasize recruiting youth to the career path, collaborating with industry stakeholders and post-secondary institutions, and strengthening workforce planning to support long-term system reliability. These actions will help Metro Vancouver sustain a well-trained operations workforce with the capacity to deliver high-quality, reliable drinking water for generations to come.

<b>Strategy 1: Promote regional youth recruitment opportunities</b>		
<b>#</b>	<b>Action</b>	<b>Responsible</b>
<b>1</b>	Collaborate with regional school district partners and Metro Vancouver School and Youth Leadership program participants to identify recommended pathways to support water operations career awareness and education goals and objectives through existing youth programs and activities.	Metro Vancouver
<b>2</b>	Identify opportunities to enhance and further integrate water operations career awareness through existing Metro Vancouver School and Youth Leadership Programs.	Metro Vancouver
<b>3</b>	Identify opportunities to provide a job-shadow 'day in the life of an operator' program or similar program for interested students.	Metro Vancouver
<b>4</b>	Work with First Nations to identify the best communication approach to inform interested youth of water operations career opportunities.	Metro Vancouver
<b>5</b>	Develop a communications toolkit to target various youth audiences to promote the water operations career path as a dynamic technical career option with strong growth potential and long-term stability.	Metro Vancouver
<b>6</b>	Develop recruitment messaging for relevant platforms to help address operations career awareness gaps and to target individuals in minimum-wage jobs who are interested in a stable career path.	Metro Vancouver

<b>Strategy 2: Collaborate with key industry advocates and training providers</b>		
<b>#</b>	<b>Action</b>	<b>Responsible</b>
<b>1</b>	Work with post-secondary institutions and the local training and certification providers to create or expand current water operator certificate and diploma programs with co-op option and stronger distribution focus.	Metro Vancouver
<b>2</b>	Collaborate with industry advocates to develop and deliver outreach campaigns that raise awareness of water sector career opportunities.	Metro Vancouver
<b>3</b>	Collaborate to develop a communications toolkit of information on career opportunities for use in communication materials by Metro Vancouver and industry associations.	Metro Vancouver
<b>4</b>	Participate in industry workshops, roundtables, and other events to identify new opportunities for engagement and recruitment.	Metro Vancouver
<b>5</b>	Advocate for Metro Vancouver needs with local training and certification providers including BC Water and Waste Association and Environmental Operators Certification Program.	Metro Vancouver
<b>6</b>	Support staff who actively participate in industry associations where there is a benefit to both Metro Vancouver and the staff member.	Metro Vancouver

<b>Strategy 3: Enhance career development opportunities for existing Metro Vancouver operators</b>		
<b>#</b>	<b>Action</b>	<b>Responsible</b>
<b>1</b>	Work with Metro Vancouver water operations staff to identify critical positions for potential workforce planning and develop individual employee development plans to support internal growth.	Metro Vancouver
<b>2</b>	Work with water operators, as necessary, to develop individual employee development plans.	Metro Vancouver
<b>3</b>	Develop and deliver programs or resources to actively support continuing education.	Metro Vancouver
<b>4</b>	Evaluate the creation and implementation of a water operator continuing education guideline.	Metro Vancouver
<b>5</b>	Seek opportunities for water operators to participate in peer-to-peer connection and knowledge exchange opportunities to highlight the work they do, when resources allow.	Metro Vancouver
<b>6</b>	Advocate for BCWWA and/or EOCP to create a Community of Practice for water operators across the region.	Metro Vancouver



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To: Water Committee

From: Linda Parkinson, Director, Policy Planning & Analysis, Water Services

Date: October 30, 2025 Meeting Date: November 12, 2025

Subject: **Factors Influencing Long-Term Water Planning**

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### **RECOMMENDATION**

That the Water Committee receive for information the report dated October 30, 2025, titled “Factors Influencing Long-Term Water Planning”.

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### **EXECUTIVE SUMMARY**

Metro Vancouver plans for and delivers regional-scale drinking water services to nearly three million people. This requires consideration of the various long-term challenges facing the regional water system, particularly in the face of rapid population growth and climate change impacts.

The Water Supply Outlook 2120, completed in 2019, is a comprehensive regional water supply study that analyzed a range of supply and demand scenarios over a 100-year period. It took into consideration anticipated population growth, climate change impacts, increased adoption of residential water metering, as well as continued water conservation. This study identified the late 2030’s as the time when existing supply may no longer meet demand.

Metro Vancouver is planning to address this gap through a two-pronged approach: increasing water supply through the *Coquitlam Lake Water Supply project* and reducing per capita drinking water demands through policies and measures in the *Drinking Water Management Plan* update. Metro Vancouver is currently undertaking a *Water Supply Plan using Adaptive Pathways* project to create updated supply and demand scenarios, confirm timing of source supply gaps, and develop adaptive plans to ensure continued resilience of the regional drinking water system.

### **PURPOSE**

The purpose of this report is to prepare the Water Committee for a November workshop on the *Drinking Water Management Plan (DWMP) Update*, by sharing information on the factors that influence long-term planning for the regional water system and how the utility is responding to the uncertainty and unpredictability associated with long-term planning.

### **BACKGROUND**

Water Services’ long-term planning is driven by two key parameters – source supply and drinking water demand. To ensure a reliable supply of high-quality drinking water for the region for decades to come, source supply must adequately meet the growing water demand. Planning for supply and demand requires a series of models that simulate what happens as water moves from the regional watersheds, through the transmission system to each member’s connection point (See Figure 1 on next page).

These models include:

- **Water Supply Area Hydrological Models:** Hydrological models are used for each of the three mountain reservoir systems and water supply areas. These inform water supply and dam operations.
- **Water Demand Forecasting Models:** Growth planning for water infrastructure is driven by average annual demand, peak day demand and per capita demand. The water demand forecasting model incorporates population projections and a broad range of demand drivers, including demographic projections, climate change, and water conservation measures.
- **Water Transmission System Model:** The regional water transmission system (water mains, treatment plants, pump stations, etc.) moves the water from source to tap and must be capable of providing treated drinking water to members to meet needs during peak summer demand periods, which is modelled as the peak day demand. Therefore, the peak day demand is a very important parameter that informs the sizing and timing of transmission system infrastructure. The transmission model is also used to optimize existing system capacity, enabling full utilization of the infrastructure throughout its intended lifespan.

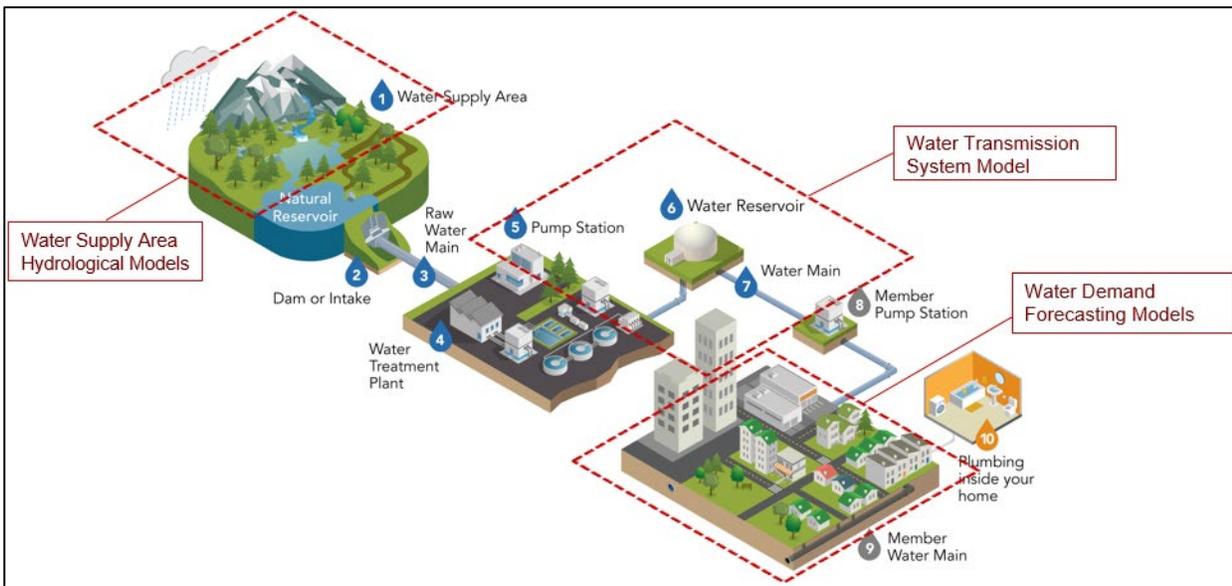


Figure 1: Models used to inform long term water planning

Combining water demand forecasts with modelling of future reservoir inflows helps determine the potential need for additional water supply over time. The probability, timing, and volume of these potential supply gaps must then be addressed through infrastructure capital plans and the utility’s strategic plan; the Drinking Water Management Plan (DWMP).

### Water Supply Outlook 2120

The Water Supply Outlook 2120 study, completed in 2019, is the most recent long-term source supply planning study conducted by Metro Vancouver. This study assessed the water system’s resiliency to potential hazards and identified actions necessary for the continued supply and delivery of water to meet the region’s needs over the next 100 years. The study examined long-term trends in both regional supply and demand considering population growth, climate change, demand shifts, and seismic vulnerability.

Given the 100-year outlook of the water supply planning study, there are many possible future demand and supply outcomes. While any outcome may occur during the entirety of a long-term forecast, it is not reasonable to plan water supplies for extremely rare conditions, as this carries a high risk of costly over or under-building of major capital infrastructure. To guide long-term planning, three planning scenarios were developed for probable low, moderate, and high-stress outcomes, after identifying the most important factors influencing the region’s water demands and supplies. Figure 2 illustrates key factors driving the three planning scenarios:

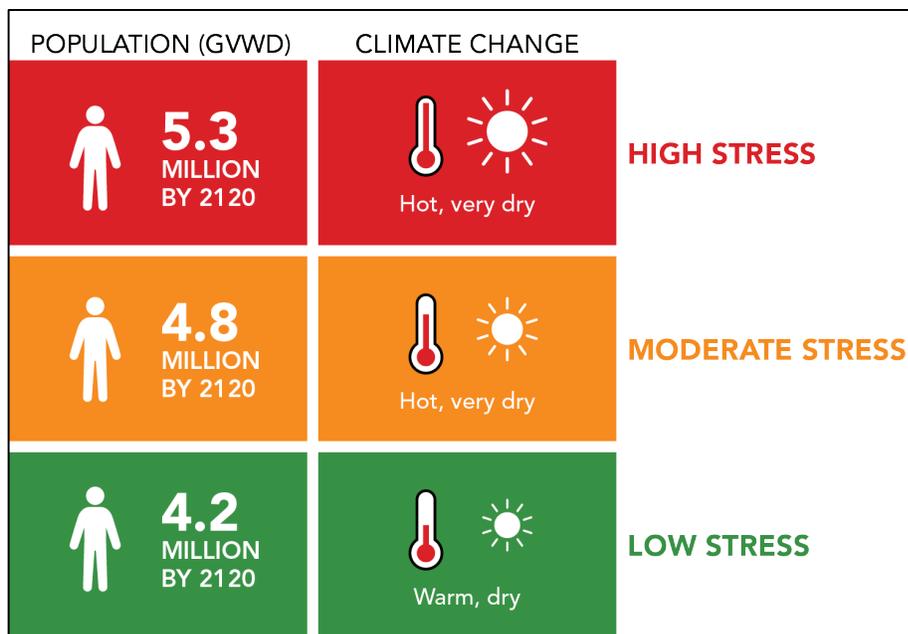


Figure 2: Planning Scenarios used for the Water Supply Outlook 2120 study

The Water Supply Outlook 2120 was developed using data up to and including 2016. At that time the regional population was growing by 35,000 people each year, which increased to 50,000 in 2024. As per the latest projections released by Metro Vancouver’s Regional Planning department, regional population is projected to reach 7.5 million in 2120.

**Regional Water Supply**

Metro Vancouver’s water comes from rainfall and snowmelt in three major water supply areas – Capilano, Seymour, and Coquitlam. The regional water supply is stored in these three main source storage reservoirs and three supplemental alpine reservoirs (Burwell Lake, Palisade Lake, and Loch Lomond). The region benefits from these supply sources reliably refilling every winter and their close proximity to the rapidly growing region that they service.

Climate, which is the primary factor impacting source supply and source water availability, is subject to natural variability and uncertainty outside the bounds of human control. Therefore, the regional effects of climate change must be considered when planning for future water supply. Work completed as part of the Water Supply Outlook 2120, found that it is expected that warmer temperatures will cause more precipitation to fall as rain rather than as snow in the water supply areas during winter months. Projections show that warmer temperatures and winter rains will erode the winter snowpack more quickly and reduce its depth and availability for drinking water in the spring and summer months. Precipitation forecasts also indicate drier summers that could

extend later into the year. Hotter days and longer dry spells over the summer months, combined with reductions in snowpack put strain on the existing water supply during times of the year when temperatures are high and water is in greatest demand.

### **Regional Water Demand**

As outlined in the Committee Report “Current Water Use Metrics and the Status of Metering in the Region”, September 10, 2025, the regional water demand is modelled using two main parameters – peak day demand and average annual demand. Peak day is defined as the day in a year when the highest volume of water is drawn from Capilano, Seymour, and Coquitlam source supplies. Metro Vancouver’s design objective is to supply peak day demands to member jurisdictions, by which the size and timing of infrastructure are directly driven. Average day demand is the total water demand for the year divided by the number of days in the year and is an important parameter when determining source water supply and the need for access to additional water. The regional water supply system must be capable of providing drinking water to members all year round.

The following are the key factors that influence water demand and were accounted for in the Water Supply Outlook 2120 and in current models and tools used by Water Services.

**Population Growth:** Population growth has a significant impact on demand forecast, and on long-term water planning. Each year, in July, Metro Vancouver’s Regional Planning department issues population projections for the region. These population projections are used to inform water demand projections. The Water Supply Outlook 2120 was developed using data up to and including 2016. At that time the regional population grew by 35,000 people each year. This increased to 50,000 in 2024. The 2025 population projections reflect the impact of recent federal immigration and nonpermanent resident policy changes, which have significantly influenced short-term population projections. Following a historic peak growth rate of 4.5 per cent in 2023–2024, the region is now experiencing a slowdown in growth through the 2025–2027 period. These fluctuations underscore the importance of regular updates to Metro Vancouver’s projections, particularly in response to evolving federal policy. Despite short-term volatility, long-term immigration trends appear more stable and will continue to be the primary driver of regional population growth.

**Demographic Changes:** Changes in urban densification, decrease in lawn areas and reduction in indoor water demands due to plumbing code changes directly impact both peak day and overall water demand. This impact is captured through Metro Vancouver’s planning projection data regarding household types, household sizes, percentage of single-family and multi-family population growth, average lot sizes, and household income. Increased densification results in passive conservation of water through reduced lot sizes and irrigable areas and increase in uptake of high-efficiency water fixtures. The Water Supply Outlook 2120 accounted for these expected changes in water demand over time driven by changes in housing type and density, amount of manufacturing, household income, and household size.

**Climate Change:** Climatic factors, such as daily average temperature directly influence end-user water consumption rates. Water Supply Outlook 2120 accounted for climate change impacts on seasonal demands by incorporating climate change scenarios from Pacific Climate Impacts Consortium (PCIC). PCIC is a regional climate service centre based out of the University of Victoria, that provides data on climate change in the Pacific and Yukon region of Canada.

**Water Conservation measures:** The factors noted above cannot be controlled by Metro Vancouver or our member jurisdictions. The only path available to Metro Vancouver and member jurisdictions to control demand is through water conservation measures. Water conservation occurs passively and can be implemented actively.

Passive conservation measures:

- Passive conservation can be attributed to updated plumbing codes and increased efficiency of water fixtures and appliances.
- Passive conservation measures usually target indoor demand and drive down both the annual average demand and peak day demand.

Active conservation measures:

- Active conservation requires adoption of measures such as active leak reduction, pay-by-use water rates, public education, and enforcement of the Drinking Water Conservation Plan (DWCP) by member jurisdictions. The DWCP is a regional policy that was developed to manage the use of drinking water during periods of high demand and during periods of water shortages, and emergencies. The DWCP, and its enforcement by member jurisdiction through their local bylaws, reduces peak day demand (which is particularly important as it drives sizing and timing of transmission system infrastructure).
- While universal metering is not a conservation measure in and of itself, it is required to effectively implement leak reduction programs and is necessary to enable various water rate strategies that support conservation.

Water Supply Outlook 2120 accounted for the impact of active conservation measures on water demand. The study assumed that the region would continue to implement the two day a week lawn watering restriction, which was in place prior to 2022, for the next century. The study also assumed that the region would be fully metered between 2076 and 2096, with some of the bigger members being fully metered as soon as 2046, and that the members would take advantage of the data from the meters to implement active conservation programs. The study assumed reductions in system leakage between 15 to 20 per cent.

### **Identifying the Supply Gap**

Currently, Metro Vancouver's source reservoirs can be maintained nearly full under normal winter conditions. Snowpack typically starts melting around April, and the reservoirs are drawn down until early fall when the rain returns. As winters get warmer and wetter, and summers get hotter and drier, less snowmelt will be available as inflow to sustain the reservoirs through the summer months, creating the risk of a seasonal supply shortage.

Water Supply Outlook 2120 identified the late 2030s as the time when supply could no longer meet demand. The supply shortage was calculated for each of the three planning scenarios – low, moderate, and high stress – from 2016 to 2116. The probability and volume of the supply gap increased with each stress scenario (low to high) and increased over time (2036, 2056, 2076, and 2096) as illustrated on next page.

*Table 1: Probability and size of a water supply shortage as projected in the Water Supply Outlook 2120*

		2036	2056	2076
Low Stress	<b>Shortage (BL)</b>	5	13	22
	Probability	1%	3%	5%
Medium Stress	<b>Shortage (BL)</b>	44	63	99
	Probability	10%	14%	21%
High Stress	<b>Shortage (BL)</b>	55	81	123
	Probability	12%	17%	24%

Water Supply Outlook 2120 confirmed that Metro Vancouver is well positioned to access additional water supply from within its three existing water supply areas. Expanded treatment capacity and a deeper intake at Coquitlam Lake was confirmed as more cost effective than options from other water sources. As a result, the Coquitlam Lake Water Supply project (CLWSP) is now underway and will help Metro Vancouver secure the ability to double the supply of drinking water that comes from the Coquitlam source.

**Addressing the Supply Gap**

Metro Vancouver is planning to address the supply gap through a two-pronged approach:

- Increase water supply through the CLWSP
- Reduce per capita drinking water demands through policies and measures in the updated DWMP

**CURRENT AND FUTURE PLANNING ACTIVITIES**

Long-term utility planning has always carried a level of uncertainty and unpredictability, which has increased with the challenges of climate change and population growth volatility. Long-term planning must ensure the drinking water supply system is resilient in the face of unpredictable annual impacts of climate change and rapid population growth in the region. To achieve this, Metro Vancouver has updated several models in recent years to incorporate additional influencing factors, including the latest climate projections, and to enable scenario-building.

**Managing Regional Water Supply**

Source Water Supply

Metro Vancouver is currently undertaking a *Water Supply Plan using Adaptive Pathways* study (“Adaptive Pathways study”) to build on the results of the Water Supply Outlook 2120 and update data and assumptions. The Adaptive Pathways study will result in a framework for future decision making that is responsive and flexible to different plausible future scenarios. The output will be an adaptive plan that describes the future pathways for the region’s water supply based on projections for water supply and demands that will be monitored and updated over time.

Transmission Infrastructure

Water Services’ design objective is to supply peak-day demands to member jurisdictions and this determines the size and timing of infrastructure. The peak day demand forecasting model is used as an input to the transmission system model to determine where new growth-driven projects are needed in the region’s transmission system and when they will be needed. It is important to highlight that while the regional transmission system is designed to deliver peak day demands, it must also account for operability during the lower winter demands and various system configurations.

Despite the total peak day demand being fairly consistent since 2011 at about 1.5 to 1.6 billion litres a day, new growth-driven projects are still required to service the faster growing parts of the region, and to meet future higher peak-day demands due to population growth and climate change impacts. Metro Vancouver is currently in the process of developing a Water Infrastructure Master Plan in which it will document timing and prioritization of long-term implementation of infrastructure.

### **Managing Regional Water Demand**

Since Metro Vancouver and its member jurisdictions each have a different, but complementary, role in supplying drinking water to the region, they both need to work collaboratively and consistently across the region to manage demand and ensure that drinking water conservation is successful. Member jurisdictions deliver drinking water to the residents and business in the region and are responsible for billing, and enforcement of water restrictions. Therefore, local leak management and active conservation strategies, that are critical to ensure the efficient use of drinking water resources, are the responsibility of member jurisdictions. These strategies reduce infrastructure needs and support regional growth while conserving resources and helping to manage costs. The best practices tool to support these strategies is universal water metering.

As noted, to progress active conservation measures, Metro Vancouver and member jurisdictions must work together. A very successful example is the DWCP which, together with education campaigns and local enforcement, has successfully contributed to steadying peak-day demand over the past 20 years despite the region's population growing by 1 million.

### Drinking Water Conservation Plan

The DWCP is a regional policy developed in collaboration with member jurisdictions to manage the use of drinking water during the high demand season from May 1 to October 15 and during periods of water shortages and emergencies. The DWCP uses a staged approach to reduce demand for drinking water through specific water restrictions which become more restrictive with higher stages. This regional policy is adopted through GVWD member's bylaws. Through this collaborative approach the region has successfully been able to reduce the peak day demand from 1956 MLD in 2003 to 1519 MLD in 2024.

### Drinking Water Management Plan

To build on the success of the DWCP, Metro Vancouver is proposing a regionally coordinated effort to advance drinking water conservation through the update of the DWMP and through adoption of the best practice tool of universal water metering. Metro Vancouver is proposing metering and per capita water use targets that each member can adopt through their local bylaws and programs.

Proposed strategies include:

- Continue advancing residential water metering to find and fix leaks
- Reduce drinking water use through active conservation supported by metering
- Advancing the recovery and reuse of non-potable water to reduce demand for drinking water

### Education and Outreach

Metro Vancouver, in collaboration with members, develops communication and education campaigns to raise public awareness about the value of drinking water and encourages more mindful water use. These efforts aim to reduce overall water demand and conserve water for where we need it most — drinking, cooking, and cleaning. Metro Vancouver’s annual water restrictions promotion, water conservation campaign, and the Water Wagon program help educate the public about the importance of using drinking water wisely.

### **ALTERNATIVES**

This is an information report. No alternatives are presented.

### **FINANCIAL IMPLICATIONS**

The existing Water Services budget includes provisions for conducting long-term planning studies and updating the planning tools and models. Financial implications will be determined as source supply and transmission infrastructure needs are further defined.

### **OTHER IMPLICATIONS**

Ongoing collaboration and information sharing between Metro Vancouver and its member jurisdictions is key to successful long-term water planning for the region. Communications and engagement on water planning happens primarily through Regional Engineers Advisory Committee and its Water Subcommittee. Additional implications will be assessed as source supply and transmission infrastructure needs are further defined.

### **CONCLUSION**

Metro Vancouver long-term planning is driven by two factors – drinking water demand and source supply. The key factor that impacts water supply availability is climate. Water demand is driven by a series of factors including population growth, demographic changes, climate change, and water conservation measures. Given the uncertainty inherent in these supply and demand factors, Metro Vancouver has enhanced its water models to take multiple supply and demand factors into consideration and allow staff to model plausible future scenarios to plan for long-term source supply and transmission infrastructure.

The Water Supply Outlook 2120 study, completed in 2019, is the most recent long-term source supply planning study conducted by Metro Vancouver. It considered a series of plausible future scenarios and examined long-term trends in both regional supply and demand considering population growth, climate change, demand shifts, and seismic vulnerability. Based on the results of these scenarios, the late 2030’s was identified as the time when supply might no longer meet demand. Metro Vancouver is planning to address this gap through a two-pronged approach: by increasing water supply through the CLWSP and by reducing per capita drinking water demands through policies and measures in DWMP update. The Water Supply Plan using Adaptive Pathways project is currently underway to complement the Water Supply Outlook 2120 study and update the assumptions and scenarios.

### **ATTACHMENT**

1. Presentation re: Factors Influencing Long-Term Water Planning.

## REFERENCES

1. Parkinson, L. (2025). Current Water Use Metrics and the Status of Metering in the Region [Staff report to Water Committee meeting on September 10].  
<https://metrovancover.org/boards/Water/WAT-2025-09-17-AGE.pdf>
2. Metro Vancouver, Water Services Department, Water Supply Outlook 2120, issued September 2019, Page 22. <https://metrovancover.org/services/water/Documents/water-supply-outlook-2120.pdf>

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Water Wagon at PNE, Aug 2022

# Factors Influencing Long-Term Water Planning

WATER COMMITTEE

Linda Parkinson  
Director, Policy, Planning and Analysis, Water Services

November 12, 2025  
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## AGENDA

- Background: Drinking Water Management Plan
- Water Supply Outlook 2120:
  - Scenario Planning
  - Regional Supply and Demand Trends
  - Projected Supply Gap
- Strategies to Manage Supply Gap
- Managing Uncertainty through Adaptive Planning

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## DRINKING WATER MANAGEMENT PLAN UPDATE

Topic	Timing
DWMP Proposed Strategies and Actions Report	June 11 ✓
Current Drinking Water Use Metrics and Status of Metering in the Region	Sept 17 ✓
Renewed Drivers for Advancing Water Metering	Oct 15 ✓
<b>Factors Influencing Long-term Water Planning</b>	<b>Nov 12</b>
DWMP Workshop for Water Committee feedback	Nov 26

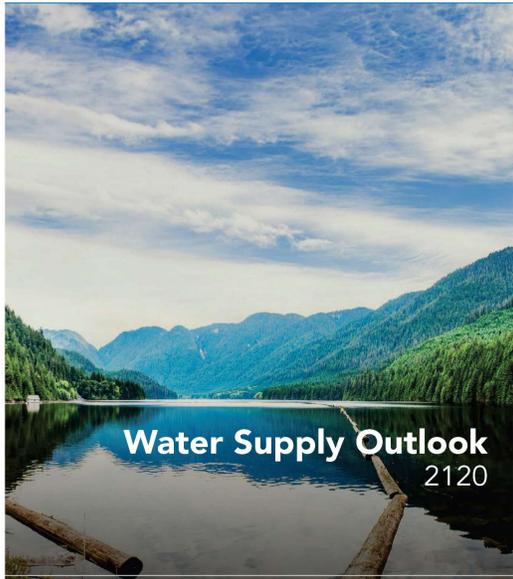
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## WATER SUPPLY OUTLOOK 2120

Purpose

- To provide a roadmap to ensure continued reliable and sustainable delivery of high-quality drinking water over the next century
- To ensure that the regional water system is resilient to risks including a rapidly-growing population, changing climate, seismic events, and power outages

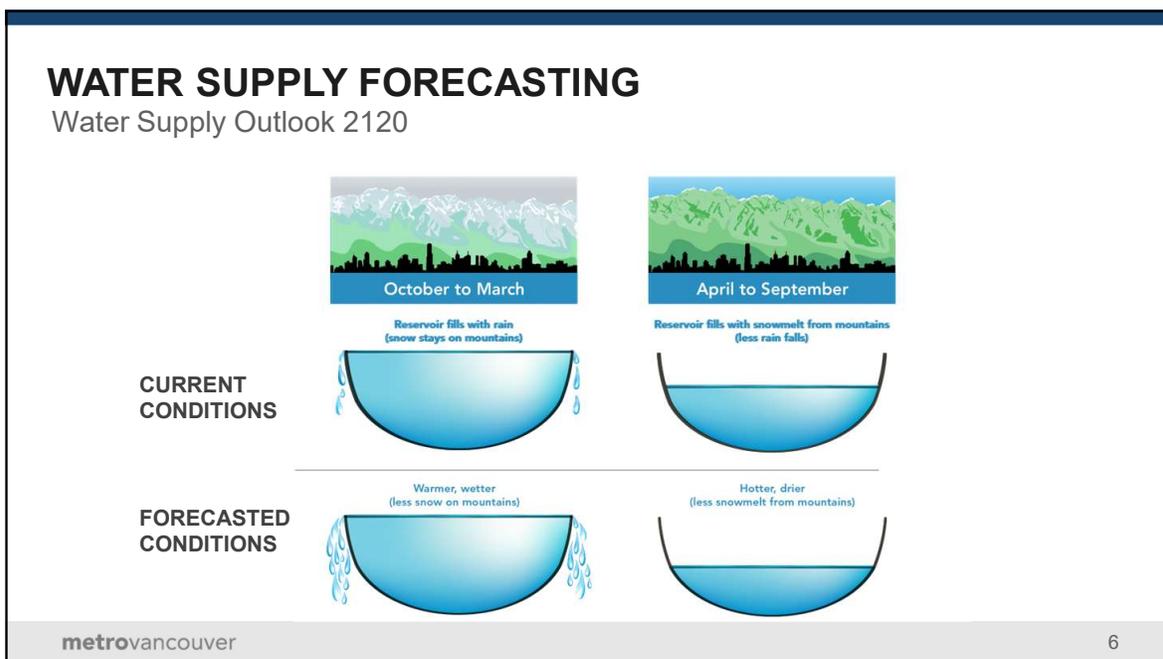


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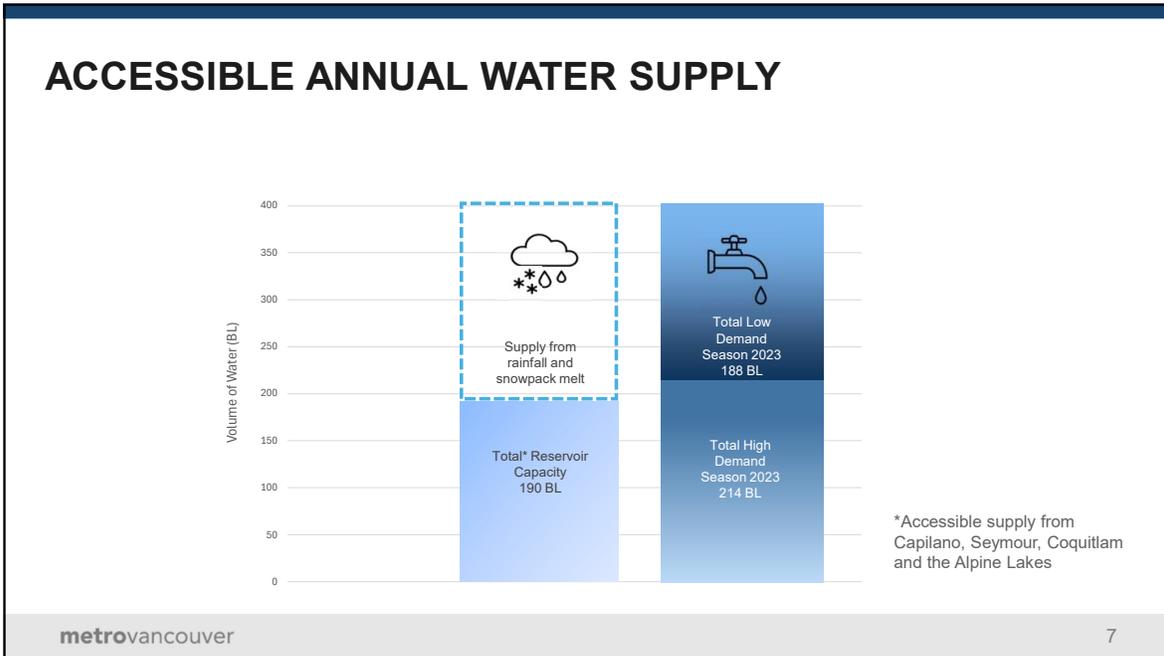
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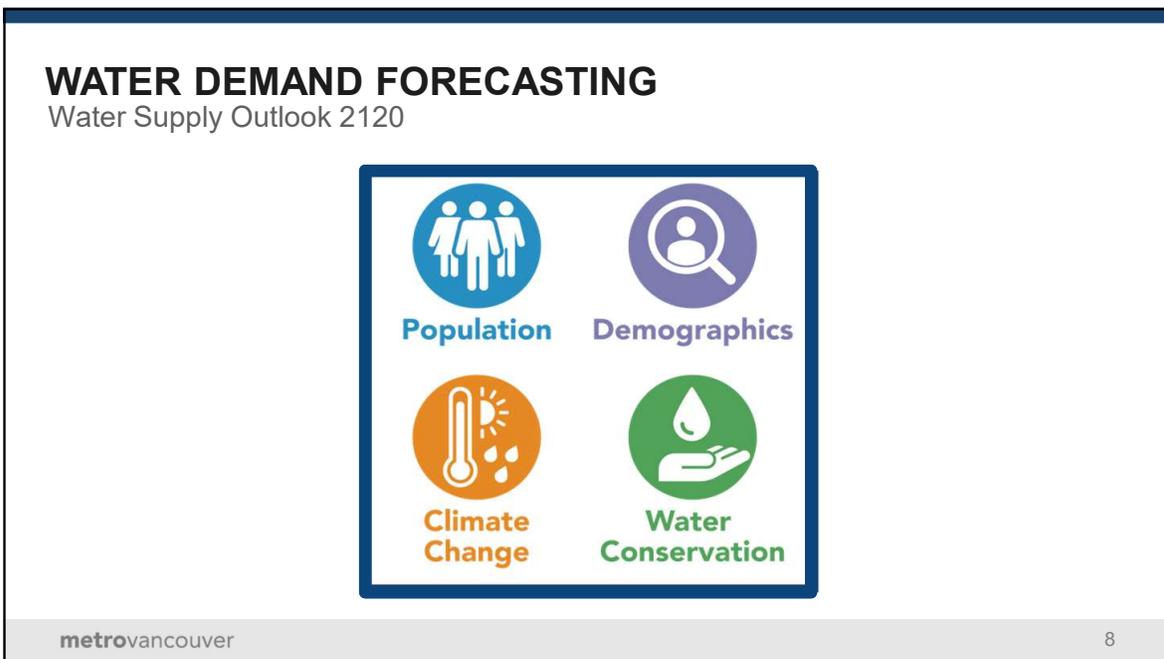
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# REGIONAL SUPPLY AND DEMAND TRENDS



Supply – expected to decrease over time due to impacts of climate change

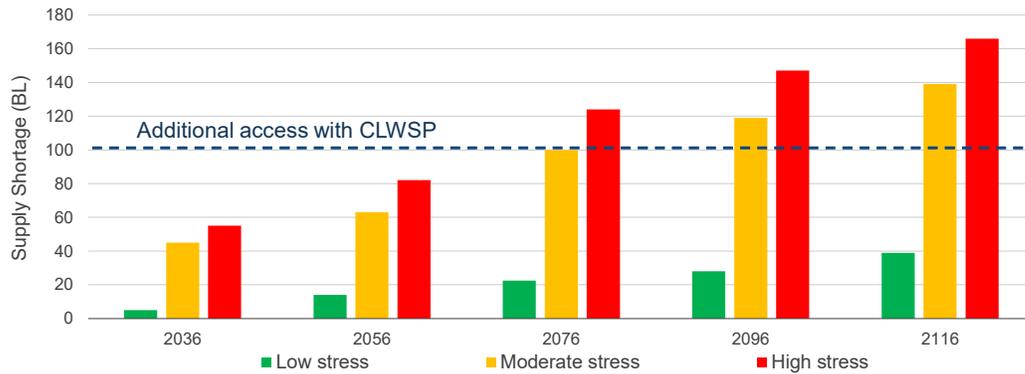


Demand – expected to increase over time due to population growth and impacts of climate change, despite conservation measures

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# WATER SUPPLY GAP

We are trending closer to high stress scenario



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# WE NEED TO BUILD AND WE NEED TO CONSERVE

We have a two-pronged approach to address the supply gap:

- Build new infrastructure to increase supply
- Implement conservation strategies to reduce demand

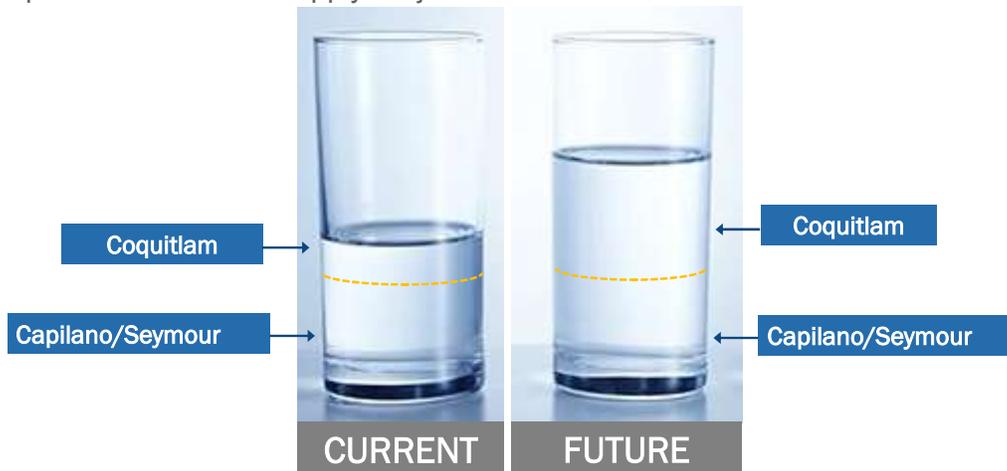


Low water levels at Seymour Reservoir during fall 2022

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# NEW INFRASTRUCTURE TO INCREASE SUPPLY

## Coquitlam Lake Water Supply Project



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## REDUCE DEMAND FOR DRINKING WATER

Drinking Water Management Plan Update



Advance residential water metering as a best practice tool



Reduce drinking water use through active conservation



Continue advancing the recovery and reuse of non-potable water

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## PLANNING IN THE FACE OF UNCERTAINTY

Managing Uncertainties:

- Enhancing models to account for wider range of supply and demand factors
- Ability to build future scenarios
- Undertaking adaptive planning study to update assumptions and scenarios



Low water levels at Coquitlam Reservoir during fall 2022

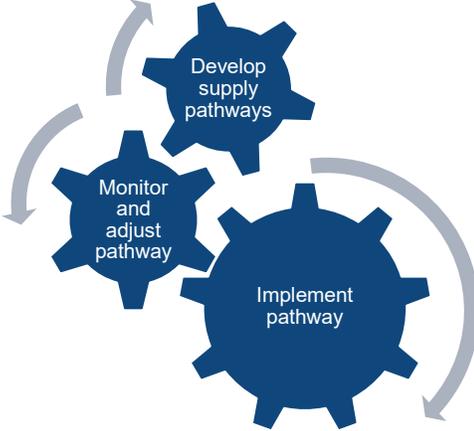
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## WATER SUPPLY PLAN USING ADAPTIVE PATHWAYS STUDY

The study will:

- Update the demand and supply scenarios for the regional water system
- Develop adaptive water supply plans for the next 50 years



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## NEXT STEPS

Item	Timeline
Water Committee workshop	November 2025
Finalize DWMP	December 2025
Final DWMP review with the public, First Nations, REAC WSC, REAC, and RAAC	Q1 2026
Water Committee and GVWD Board adoption	Q2 2026

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To: Water Committee

From: Linda Parkinson, Director, Policy, Planning & Analysis, Water Services

Date: October 8, 2025

Meeting Date: October 15, 2025

Subject: **Renewed Drivers for Advancing Water Metering in Metro Vancouver**

### **RECOMMENDATION**

That the Water Committee receive for information the report dated October 8, 2025, titled “Renewed Drivers for Advancing Water Metering in Metro Vancouver”.

### **EXECUTIVE SUMMARY**

Without universal metering, there is uncertainty about how water is being used in the region. Advancing residential water metering allows the identification of leaks and the implementation of active conservation measures, which support reductions in per capita water use, and enables accurate, data-driven decision making. Reductions in per capita water use allow both water and liquid waste utilities to serve more people with the existing infrastructure.

Despite being one of the last utilities of its size to meter drinking water at all residential properties, recently several members have adopted residential metering programs. The public supports metering, with recent polling showing a 5 to 1 preference for a user-pay model over flat-rate billing. Proposed strategies in the *Drinking Water Management Plan* update focus on advancing residential water metering by setting regional targets that individual members can advance. This regional commitment approach is the same as the one taken in the successful Drinking Water Conservation Plan – where Metro sets regional policy on water use restrictions and members manage through their respective bylaws.

### **PURPOSE**

The purpose of this report is to prepare the Water Committee for a Fall workshop on the *Drinking Water Management Plan* (DWMP) Update, by sharing information on the benefits of metering and outlining the drivers that have recently motivated some member jurisdictions to advance water metering more broadly in their jurisdictions.

### **BACKGROUND**

The region's progress towards universal water metering has been slow despite many years of discussions and commitments. Water metering was mentioned very early in the 1886 Coquitlam Water Works Act as a tool to prevent water wastage and provide accurate accounting of water use. Over the years it was highlighted in regional initiatives, policies, and Metro Vancouver Board Strategic Plans. Metro Vancouver has also conducted several studies to evaluate the regional cost/benefit of implementing metering which consistently showed a positive business case.

**Renewed Drivers for Advancing Water Metering in Metro Vancouver**

Water Committee Regular Meeting Date: October 15, 2025

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Without universal metering, there is uncertainty about how water is being used in the region. The 2021 Water Use by Sector (WUBS) report estimated that just over one third (35 per cent) of all water connections were metered and less than half of the region's total water consumption (48 per cent) was metered. This is very low relative to most water utilities of similar size and geography to Metro Vancouver, such as the Capital Regional District, the City of Abbotsford, and the City of Seattle in Washington state, all of whom have been metered for many years. In most water utilities the conversation has progressed from whether to install water meters to the benefits of switching from analog or manually read meters to smart meters because they achieve the most benefits for water system management with automated, real-time readings.

The benefits of metering include:

- Meters are the most effective way to detect leaks on the member/distribution system and abnormally high-water usage which is especially crucial during droughts and emergencies.
- Meters are the best way to identify leaks on the customer side – unless the leak is significant enough to rise to the surface and be visible.
- Metering supports water conservation initiatives by empowering end-users to understand their water usage and allows utilities to provide financial incentives and rebates.
- Metering supports equitable billing through a pay-by-use model.
- Meters enable member jurisdictions to implement more sophisticated rate structures and, if they choose, to charge different rates for different sectors (e.g. a reduced rate for the agricultural sector).
- Meters generate critical data by measuring how much and when water is used, which informs the effective management of a water utility.

There has been a recent increase in member jurisdictional support and activity around progressing metering. Some of these initiatives include approving voluntary metering programs, mandating requirements for metering on new buildings, as well as the development of metering strategies, and reports in support of metering to council. Examples of these include:

- City of Coquitlam approved the installation of meters on all single and multifamily developments submitting building permits after January 1, 2025.
- City of Burnaby approved a universal metering strategy that begins with mandatory metering on new homes and on existing homes with secondary suites or those that are meter ready.
- Township of Langley approved a voluntary metering program.
- City of Vancouver approved accelerating its universal metering program to be completed by 2040.

The update to the DWMP will support metering by setting regional targets that individual members can advance. This regional commitment approach is the same as the one taken in the successful Drinking Water Conservation Plan – where Metro sets regional policy on water use restrictions and members manage through their respective bylaws.

**Renewed Drivers for Advancing Water Metering in Metro Vancouver**

Water Committee Regular Meeting Date: October 15, 2025

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**RENEWED DRIVERS FOR ADVANCING WATER METERING**

Renewed drivers for metering have emerged in the past few years. These drivers include the need to plan effectively in the face of a rapidly growing population, meet recent Provincial zoning density demands, and being prepared for the impacts of climate change. Five renewed drivers are:

**1. Metered member jurisdictions achieve reductions by addressing leaks**

A water meter alone is just a device to measure the amount of drinking water being used. The data provided by water meters unlock many opportunities to efficiently manage the region's drinking water through identifying leaks and improving understanding of where to target conservation programs. Water meters allow for near real-time response to leakage and water main breaks, by helping to identify the size and location of the leaks. Water meters also enable proactive leak detection and repair to minimize the risk of significant system losses in situations where emergency conservation is needed, such as a prolonged drought or a significant water main break.

The initial reduction in water use achieved with a universal metering program is mostly through leak identification, followed by consumers changing their behaviour due to increased awareness of how much water they are using. Industry case studies from Metro Vancouver and other jurisdictions consistently show that water metering can result in savings of 15 per cent in as little as 3 to 5 years.

The common pattern of savings is as follows:

- System Improvements – fast and permanent savings:
  - **Identify private property leaks:** As soon as meters are installed water utilities can identify private property leaks. Although those leaks could be small and slow, they unfortunately go undetected for years and can waste a significant amount of water and cause property damage the longer they go unmanaged.
  - **Identify system leaks:** System losses/leaks can most readily and effectively be identified with universal metering. Together with private property leaks, losses can be 20 per cent, or more, of the region's high quality drinking water.
- Targeted Demand Reduction – behavioral shifts in water use:
  - **Implementation of pricing strategies:** Further demand reductions can be expected and achieved through effective pricing strategies, pricing structures can also be implemented to target peak demands, which drives the required size of infrastructure.
  - **Implementation of conservation programs:** Targeted conservation incentives and rebates can be used to target average day demand.

Table 1 on the following page uses data from the 2021 WUBS report to illustrate the savings in per capita water use achieved by a selection of member jurisdictions with varying levels of metering progress. A five-year rolling average of the highest residential water use is compared to the five-year rolling average in 2021 (both in litres per capita per day). The data demonstrates the effectiveness of metering in reducing demand, which is compounded when combined with conservation-oriented tiered pricing (as in the case of the District of West Vancouver).

**Renewed Drivers for Advancing Water Metering in Metro Vancouver**

Water Committee Regular Meeting Date: October 15, 2025

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**Table 1: Percentage Reduction in Residential Water Use Per Capita Per Day**

Jurisdiction	Percentage of Metered Connections		Residential Water Use (LPCD)		Percentage per Capita Water Use Reduction
	1995	2021	Highest Since 1995*	2021*	
<b>LESS METERING PROGRESS</b>					
City of Burnaby	5%	2%	337	289	14%
City of Vancouver	14%	24%	339	268	21%
<b>MORE METERING PROGRESS</b>					
City of Surrey	0%	80%	340	231	32%
City of Richmond	6%	98%	341	221	35%
<b>UNIVERSAL METERING</b>					
City of Langley <sup>+</sup>	100%	100%	271	220	19%
District of West Vancouver (uses tiered pricing)	7%	100%	586	327	44%

\*Five-year rolling average

+ City of Langley has been universally metered since at least 1987. Lower demand reductions are to be expected compared to the other jurisdictions shown that have progressed metering during the study period (1995 to 2021)

**2. The financial case for metering is well established**

Local and international case studies demonstrate that the savings associated with metering programs add up quickly. Many of the case studies in Metro Vancouver’s 2019 Residential Water Metering Best Practices Guide show that metering programs provide a payback of about 10 years. The faster a metering program is implemented the faster the benefits accrue.

Metro Vancouver’s 2019 Guide recommends implementation of universal residential water metering over a 10-year period by all member jurisdictions to yield the highest financial benefits to members and the region. For example, West Vancouver achieved a 12-year payback on its universal metering program. The City of Toronto achieved payback in six years by switching to smart water meters, which allow for enhanced data, precise billing, automated operations and efficient resource management. The City of Richmond staff found that leak detection and reduction in water use in the City has led to savings equivalent to the initial costs of their metering programs.

**Renewed Drivers for Advancing Water Metering in Metro Vancouver**

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In addition to benefits to the water system, reducing demand on the wastewater system can lead to cost savings by extending the useful life of facilities and deferring the need for capacity expansions. Demand on the wastewater system is influenced by three key factors: dry weather flows (wastewater generated during dry weather), organic loadings, and wet weather flows. Historical data shows that water conservation efforts have successfully reduced dry weather flows, helping to accommodate some of the rapid population increase experienced. Continued emphasis on reducing indoor water use will help provide benefit to wastewater system costs.

**3. Metering supports utilities to deal with the impacts of climate change and the growing population**

The impacts of climate change over the past few years have been causing longer, drier, hotter and more unpredictable summers. The rain and snowmelt that is stored in the region's source reservoirs needs to last through the hot and dry summer months and every drop we can save counts. The accurate data provided by meters enables more accurate planning for the future and enables Metro Vancouver and its members to refine long-term planning in response to the uncertainty of climate change.

Additionally Metro Vancouver's population is growing faster now than it has historically, with 42,500 new residents (2025 population projections) expected each year compared to the historical average of 35,000. This increased population will increase the demand for drinking water and the infrastructure needed to deliver it. Reducing demand is important to ensure we have drinking water for the future where it's needed most: drinking, cooking, and cleaning.

Recently the City of Vancouver estimated that their system leakage rate is 20 per cent which is equivalent to \$20 million dollars of unused drinking water that they purchase annually. The City calculated that a 10 per cent reduction in the leakage rate will not only save city money, but it can result in supplying 7,000 new homes with the existing system capacity. Given the new provincial zoning rules around increased densification, reducing consumption through metering frees up water capacity to service new customers, without having to invest in new or upsized infrastructure. A key benefit of metering and associated policies is that it helps extend the useful life of existing built infrastructure and potentially defer future system expansions to accommodate population growth.

**4. Metering enables fair and transparent pricing structures**

Water metering plays an important role in ensuring all residents have fair and equitable access to high-quality drinking water. Metering helps prevent wastage and ensures that those who use more water contribute proportionally to its cost, to keep water rates affordable for all residents.

**Renewed Drivers for Advancing Water Metering in Metro Vancouver**

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In Metro Vancouver, water use increases by over 50 per cent in the summer months mostly due to lawn watering, which is a discretionary use. The highest use residential households tend to be those with larger lots, automated irrigation systems, water features and/or pools. These high users tend to skew the average upwards so that most water users are below the average. With the flat-rate billing system low and average water users end up subsidizing the high-water users who tend to have expansive lawns and pools because everyone pays the same rate regardless of use. This is illustrated in Figure 1 below. Metering provides opportunities for a more equitable way to bill customers and allows them to make decisions to control how much they use and therefore the size of their bill.

Some member jurisdictions have raised concerns that metered billing structures unfairly penalize low-income households and households with bigger families who have higher-than-average indoor water use. These important concerns can and have been addressed by other utilities that have implemented universal water metering in Canada and the US. Solutions including the use of water metered pricing structures to ensure basic water needs are affordable or even free while higher usage is charged at a higher rate. Any pricing model can be structured to ensure financial subsidies/support programs are in place for those who cannot afford to pay, encourage conservation among those who can, and target the highest water users. Metro Vancouver is currently conducting a research project to review existing members' water rate structures, billing practices, and demographic data to identify equity and affordability concerns. The study will also investigate assistance programs for low- and fixed-income households and explore best practices from other jurisdictions to inform potential affordability initiatives.

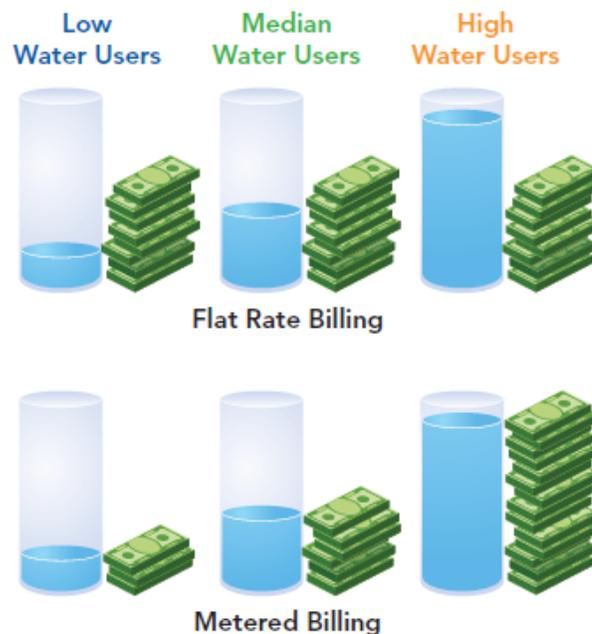


Figure 1: Typical Distribution of Residential Water Use

## **5. Water metering is supported by the public**

Media coverage on drought conditions has drawn and sustained the public's attention on the low rates of metering across the region. Metro Vancouver has conducted public attitudes surveys to gauge the public's perception towards water metering. The first survey was done in 2017, and an update was completed in 2024. Both surveys showed very high levels of support, 86 per cent in 2017 and 84 per cent in 2024, for the concept of paying for drinking water based on usage versus flat rate. The 2024 survey respondents who support a pay-by-use model believe that such a system is more equitable, will increase user awareness of water use, and will provide an incentive to reduce water use. The survey found that most residents, close to 70 per cent, are in favor of requiring water meters in all new and existing homes.

### **Addressing concerns to implementing residential water metering**

Many of the long-standing concerns to implementing residential metering programs in this region have been related to the cost of implementing and operating a metering program, concerns about potential financial impacts to low-income families, and uncertainty of additional conservation gains through metering. Above all, some members have indicated that they are facing competing priorities for the limited resources available to them, and that metering was not the most pressing concern given the impression that it did not offer a positive business case. For some, the perception is that we live in a rainforest, and meters are not necessary to manage water use. Despite these concerns the drivers discussed above show that these concerns can all be addressed. Case studies from Metro Vancouver and other jurisdictions demonstrate that metering systems typically pay for themselves within a decade. Tiered pricing structures and assistance programs ensure that rates remain equitable and affordable for all households. And as climate change continues to impact the region's water supply, it's clear that we can no longer rely solely on rainfall and that every drop we save counts.

### **CONCLUSION**

Despite being one of the last utilities of its size to meter drinking water at all properties, recently several members have adopted residential metering programs recognizing its importance as a best management practice. Renewed drivers for implementing residential metering in the region include:

- Reductions in per capita water consumption allow for both water and liquid waste utilities to serve more people with the existing infrastructure.
- The financial case for metering is well established, with examples from other jurisdictions demonstrating significant long-term cost savings, improved demand management, and more effective infrastructure planning.
- Improved resilience to climate change and increased accuracy in utility planning by enabling data driven decisions.
- The ability to implement pricing structures that can enhance equity.
- Public support for metering, with recent polling showing a 5 to 1 preference for a user-pay model over flat-rate billing.

As population growth and climate change continue to impact water demand and supply, implementing metering and conservation strategies will be crucial for ensuring a reliable drinking water supply for Metro Vancouver.

**Renewed Drivers for Advancing Water Metering in Metro Vancouver**

Water Committee Regular Meeting Date: October 15, 2025

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**ATTACHMENT**

1. Presentation re: Renewed Drivers for Advancing Water Metering in Metro Vancouver

**REFERENCES**

1. Metro Vancouver, Water Services Department, Residential Water Metering in Metro Vancouver – Best Practices Guide for Local Government, issued August 2019.  
<https://metrovancover.org/services/water/Documents/residential-water-metering-in-metro-vancouver-best-practices-guide.pdf>
2. Anthony, V. (2024). Water Use by Sector in Metro Vancouver: 2000 – 2021 Regional Results [Staff report to Water Committee meeting on 2024, April 3].  
<https://metrovancover.org/boards/Water/WAT-2024-04-03-AGE.pdf#page145>

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Capilano Reservoir during fall 2022

# Renewed Drivers for Advancing Water Metering in Metro Vancouver

## DRINKING WATER MANAGEMENT PLAN UPDATE

Linda Parkinson

Director, Policy, Planning & Analysis, Water Services

Water Committee Meeting, October 15, 2025  
78529707

**metrovancouver**

## AGENDA

- Background
  - Drinking Water Management Plan update
  - Regional water metering status
- Importance of water metering for the region
- Renewed drivers for advancing water metering in the region
- Addressing concerns
- Next steps



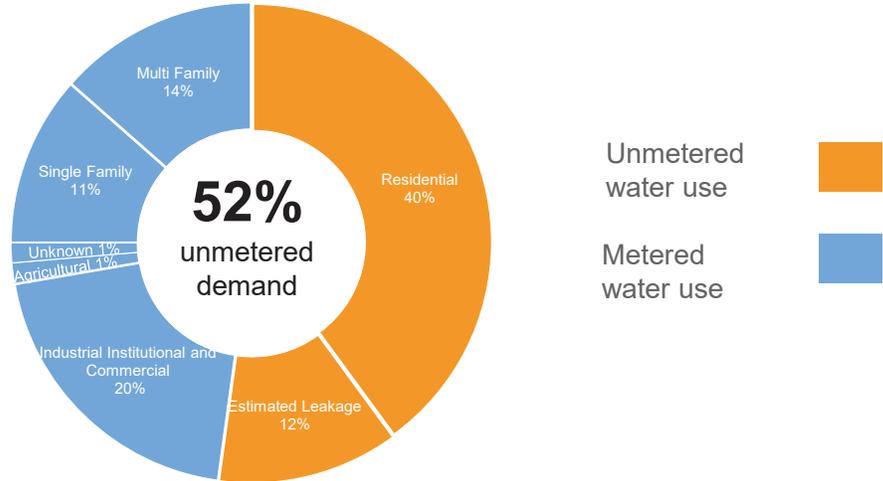
Coquitlam Water Treatment Plant

## DRINKING WATER MANAGEMENT PLAN UPDATE

Topic	Timing
DWMP Proposed Strategies and Actions Report	June 11 ✓
Current Drinking Water Use Metrics and Status of Metering in the Region	Sept 17 ✓
<b>Renewed Drivers for Advancing Water Metering</b>	<b>Oct 15</b>
Factors That Influence Long-term Water Planning	Nov 12
DWMP Workshop for Water Committee feedback	Nov 26

# THE REGION IS BEHIND ON METERING

Over half of the region's water use is unmetered

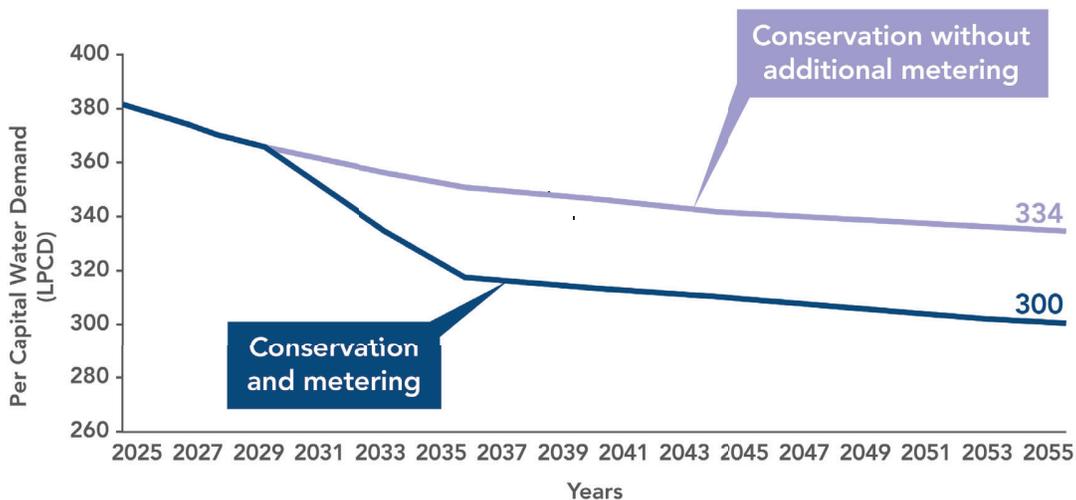


## WHY THIS MATTERS NOW

- Growing population: over 40,000 people per year
- Hotter, drier summers already here
- Billions needed for new and upsized infrastructure across water and liquid waste utilities if we don't act

## WHY CONSERVATION ALONE IS NOT ENOUGH

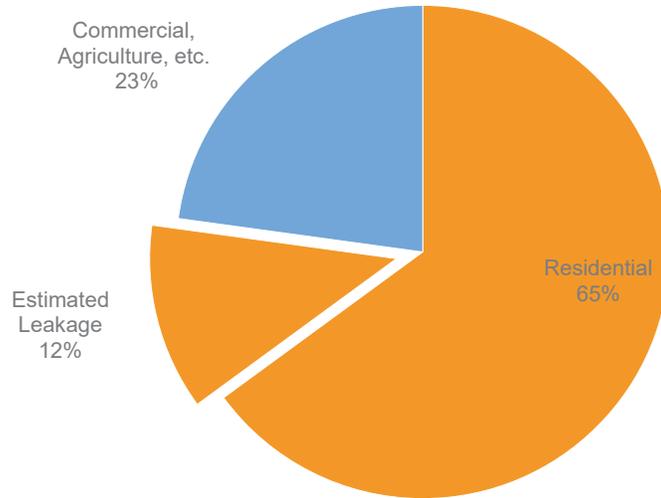
Conservation measures can't keep up with growth



Results from Metro Vancouver Drinking Water Conservation Potential Study 2025

## WHY FOCUS ON RESIDENTIAL WATER USE

- An estimated 65% of the water is used in homes and 12% is reported as lost to leaks
- Climate change impacts, aging infrastructure, and increasing demand make efficient water management urgent



# RENEWED INTEREST IN ADVANCING WATER METERING

## Burnaby approves multimillion-dollar plan for water meters in homes, pay-for-use coming 2027

Staff say universal water metering will lead to a 'significant reduction in overall water demand.'



Water metering is already working in some B.C. municipalities. Why isn't it universal?

## You may have to pay to spray as Vancouver considering water metering for all homes, buildings

*Dan Fumano: Only 13 per cent of Vancouver's single-family homes have metered water connections. West Vancouver has universal water metering, which has been associated with a 45 per cent reduction in demand.*

## B.C. drought woes spur call for universal water metering



By **Simon Little & Kylie Stanton** • Global News  
Posted March 6, 2024 8:42 pm · Updated March 7, 2024 7:24 pm · 3 min read

## Township of Langley Launches Voluntary Water Meter Program

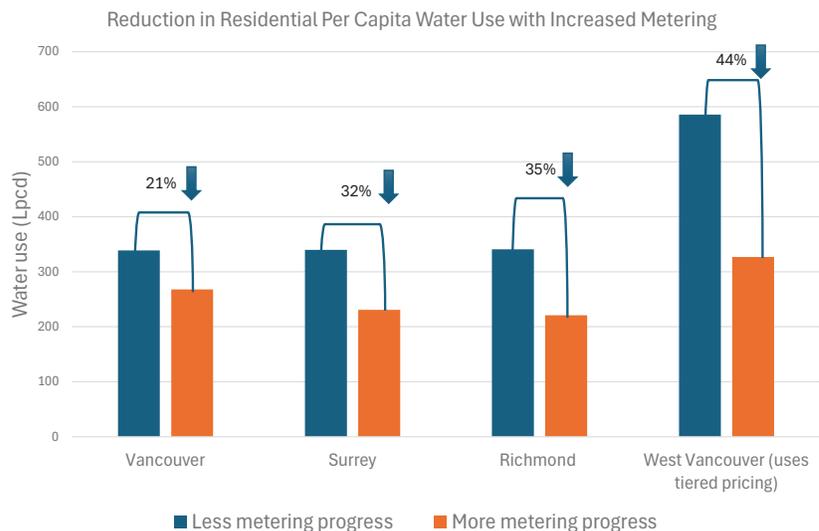
Posted on Tuesday, February 25, 2025

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# FIND LEAKS FAST AND SAVE WATER

- Leaks waste +20% of drinking water
- City of Vancouver estimated \$20M annually in drinking water losses
- Additional savings will be achieved through more targeted water conservation initiatives

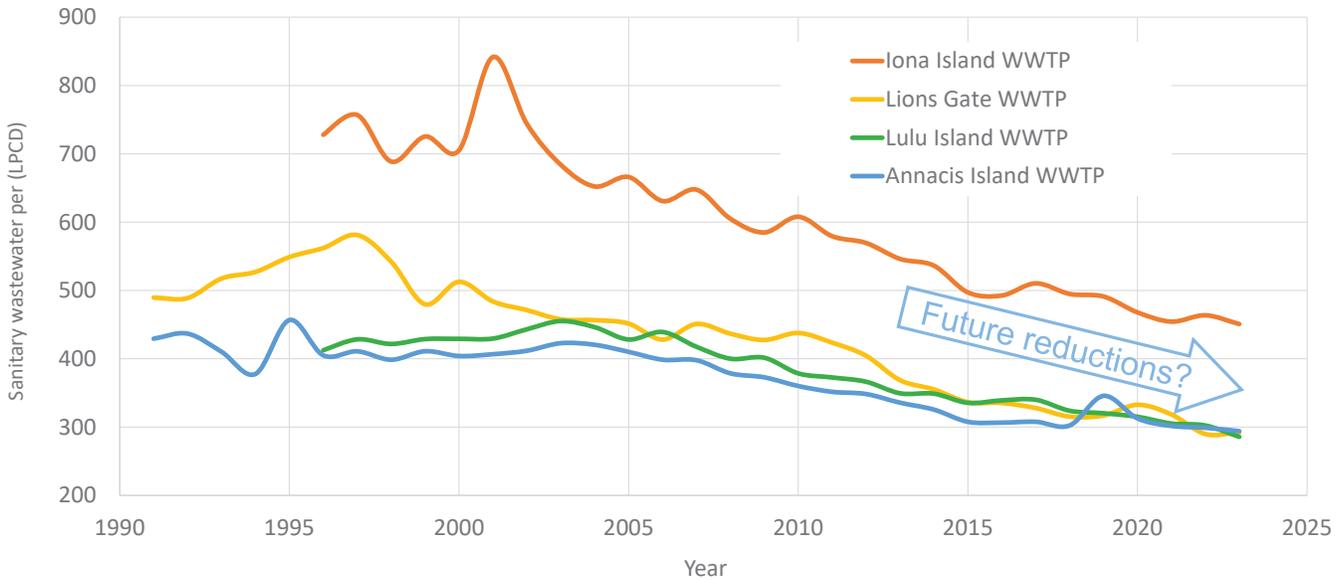


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## REDUCE WATER USE TO GET MORE OUT OF EXISTING INFRASTRUCTURE

### Wastewater Treatment Plants

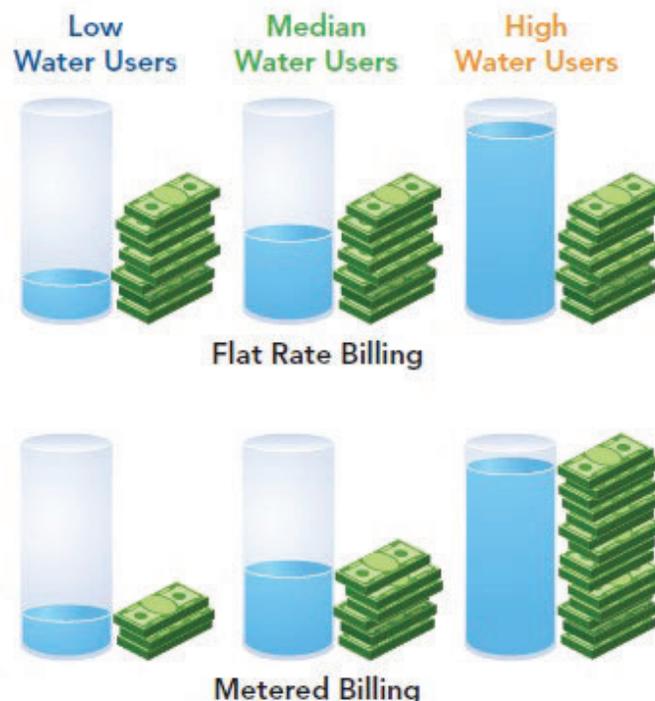


## BUILD RESILIENCE TO GROWTH AND CLIMATE CHANGE

- Region growing by over 40,000 residents each year
- Summers are hotter, drier, and longer
- Cutting leaks will:
  - Make water available for new homes
  - Allow both water and liquid waste to serve more people with existing infrastructure

## MAKE BILLING FAIR AND TRANSPARENT

- Flat rates: everyone pays the same, regardless of use
- Low and average users subsidize the highest users
- Meters ensure people pay for what they use, giving households control

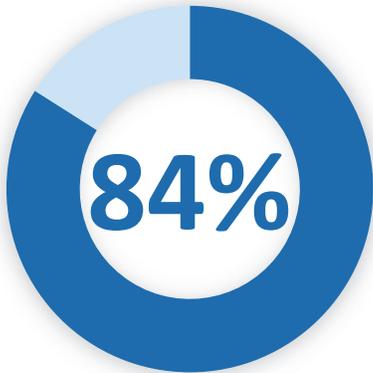


## ENABLE DATA-DRIVEN DECISION MAKING

Obtain accurate information for planning

- Over half of Metro Vancouver's water use is unmetered
- Meters provide reliable data on water use and losses
- Better data leads to better information to enable more cost-effective decision making

# PUBLIC SUPPORT IS ALREADY THERE

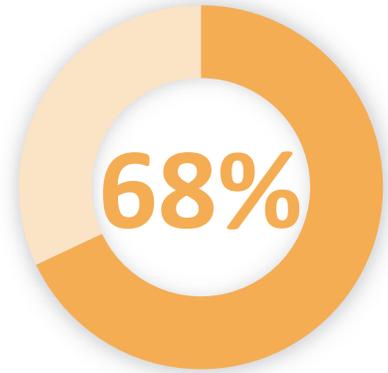


Support pay-for-use model



Use less water under a pay-for-use model\*

\*respondents already metered



Favour requiring water meters in all homes

Source: Water Metering Opinion Survey, Justason Market Intelligence Inc., April 2024



ADDRESSING CONCERNS

Coquitlam Water Treatment Plant

## ADDRESSING CONCERNS

- **Cost to implement a metering program:** Programs pay back in ~10 years; faster with smart meters
- **Equity:** Tiered rates and assistance programs protect equity and affordability
- **Rainforest myth:** Hotter, drier summers mean every drop counts

## WHAT'S NEXT

From Draft to Final Plan

Item	Timeline
Water Committee Workshop	November 2025
Finalize DWMP	December 2025
Final DWMP review with the public, First Nations, REAC WSC, REAC, and RAAC	Q1 2026
Water Committee and GVWD Board adoption	Q2 2026



Questions

**metro**vancouver



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To: Water Committee

From: Linda Parkinson, Director, Policy, Planning and Analysis, Water Services

Date: September 10, 2025 Meeting Date: September 17, 2025

Subject: **Current Water Use Metrics and Status of Metering in the Region**

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**RECOMMENDATION**

That the Water Committee receive for information the report titled “Current Water Use Metrics and the Status of Metering in the Region”, dated September 10, 2025.

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**EXECUTIVE SUMMARY**

With the ongoing significant increase in population forecasted, combined with the impacts of climate change on water supply and amount of rainfall in summer months, the demand for drinking water will increase.

Understanding current and historical water use patterns in the Metro Vancouver region informs effective infrastructure planning, policy development and strategic planning such as the update to the *Drinking Water Management Plan* (DWMP). Metro Vancouver’s water use metrics demonstrate a high total per capita water and residential water consumption together with a relatively low level of universal metering. Unmetered water use (residential unmetered and leakage) accounts for over half the water delivered to the region. Water metering is an effective way of identifying leakage both on the system and on the private side. Proposed strategies in the DWMP update focus on advancing residential water metering to enable accurate, data-driven decision making, address leakage and support reductions in per capita residential water demand.

**PURPOSE**

The purpose of this report is to prepare the Water Committee for a Fall workshop on the *Drinking Water Management Plan* (DWMP) Update, by providing the Committee with current and historic data on how drinking water is used, and the status of metering in the region. This information has informed the draft strategies and actions in the DWMP Update.

**BACKGROUND**

The update of the DWMP is being driven by the challenges of rapid population growth, climate change, and the risk of seismic events. Planning for rapid population growth and climate change impacts on the water system requires a series of models that predict the water movement from the water supply areas, through the transmission system to each members’ connection points. The inputs to these models include current and historic water consumption data, population forecasts, climate change scenarios, changes in land use planning, and changes in water use patterns. The accuracy of these models is directly dependent on the accuracy of the input data. The Metro Vancouver region is not fully metered, which means that detailed water use data is not available for all member jurisdictions and end-users. Consequently, assumptions or literature values are often used when water consumption data is being used for demand modelling purposes.

**Current Water Use Statistics and the Status of Metering in the Region**

Water Committee Regular Meeting Date: September 17, 2025

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**Drivers of Drinking Water Demand**

Each region can be unique in its water use patterns, but there are several drivers that are common in influencing the demand for drinking water. These factors include:

- Population and population growth projections – drinking water demand closely correlates with changes in population.
- Land Use – Residential, Industrial, Commercial, Institutional (ICI) and Agricultural – each sector has its own water consumption patterns.
- Housing mix and Density – as housing density increases per capita demand decreases, as single-family homes use significantly more water per capita than multi-family.
- Demographics – higher income households generally use more water per capita.
- Climate – drinking water use increases as rainfall decreases and temperature increases.
- Water conservation policies – e.g., lawn watering restrictions will reduce demand, particularly in summer, if successfully implemented and enforced.
- Universal metering – enables the introduction of ‘active’ water conservation measures and provides customers and system operators with the information they need to understand usage patterns and address leaks.
- Rate Structures – universal metering allows the implementation of rate structures that incentivize conservation.
- Leakage Reduction Programs – universal metering supports the implementation of an effective leak reduction program.

**Current Drinking Water Demand Data**

Per capita water demand

In 2023, the total water supplied from GVWD, and member jurisdictions' sources, was 395 billion litres. Dividing this total water consumption by the population serviced (2.9 million) yields an average total water consumption of 379 litres per capita per day (LPCD) for the region. Within member jurisdictions, the total per capita consumption rates varied from 265 to 601 LPCD in 2023. However, it is difficult to effectively compare jurisdictions using the total water consumption metric given the differences in the water use by sector, for example residential versus ICI split and agricultural use. Every two years, Metro Vancouver produces the Water Use by Sector Report (WUBS), based on data provided by the member jurisdictions. This report outlines trends in water use in the region and provides information on water use patterns by sector (Residential, ICI, Agricultural) as well as the status of metering in each member jurisdiction. The next WUBS report based on 2023 data will be published in early 2026.

From the WUBS Report (2021), the average residential demand is approximately 65 per cent of total consumption. Therefore, residential demand in 2023 is estimated at 246 LPCD, calculated using a residential weighted average across member jurisdictions. However, this estimate assumes a constant breakdown in demand between 2021 and 2023. Compared to other regions, Metro Vancouver’s estimated residential per capita demand is very high, see Table 1. For example, the City of Portland’s residential per capita demand in 2024 was 177 LPCD, San Francisco was 156 LPCD, and the Capital Regional District’s was 220 LPCD.

**Current Water Use Statistics and the Status of Metering in the Region**

Water Committee Regular Meeting Date: September 17, 2025

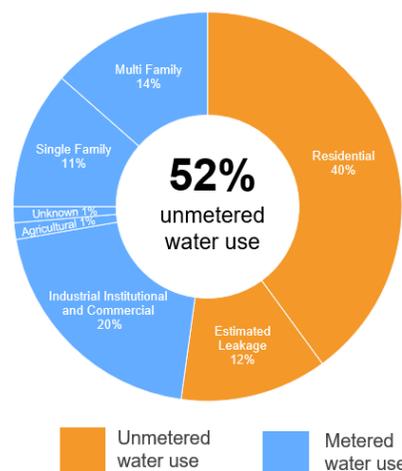
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*Table 1  
Residential per capita from various West Coast water suppliers*

Water Supplier	Residential Per Capita Demand	Year
Metro Vancouver	246	2023
City of Portland	177	2024
San Francisco	156	2024
Capital Regional District	220	2023

Figure 1 illustrates the current estimate of water use breakdown by sector using data from the most recent WUBS (2021).

- The data highlighted in blue comes from metered connections. This quantity of water is subtracted from the total water consumed to calculate the unmetered demand.
- As shown in orange, over half the water used in the region is unmetered. This unmetered quantity includes unmetered residential use and system leakage. System leakage is estimated by members at 12 per cent, and the unmetered residential demand is then back calculated at 40 per cent.



*Figure 1  
Water Use By Sector in the Region (2021 data)*

**Water Metering Practices in the Region**

The Metro Vancouver region is one of the few major water suppliers in Canada that do not universally meter the end-user. Meters are used not just for data collection and improved modelling of the system, but for efficiently identifying leaks in both the water system and on the end-user side. When combined with volumetric rate structures (e.g. pay by use), meters help residents make informed decisions to reduce water demand.

Currently six of the local member jurisdictions are considered fully metered. Some of the unmetered members have recently made progress on their metering programs, including implementing a volunteer program and requiring meters on new builds. In 2021, there were 168,569 metered accounts in the GVWD region, representing 35 per cent of the total serviced connections, and 47 per cent of total water consumption. The region’s progress in advancing metering has been slower than was accounted for in the demand forecasting for the Water Supply Outlook 2120.

**Metrics used to design the Water System**

Average Day Demand and Seasonal Demand

Average day demand is the total water demand for the year divided by the number of days in the year and is an important parameter when determining water supply and the need for access to additional water. The regional water supply system must be capable of providing drinking water to members all year round. The average day demand has stayed relatively constant at 1.1 BL/d over

**Current Water Use Statistics and the Status of Metering in the Region**

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the past 20 years, as shown in blue on Figure 2, despite a growing population. This is because of reductions in per capita demands due to passive conservation measures such as improvements to the building code and increased housing density. Education and communication campaigns aimed at conserving water also play an important role. However, with the significant increase in population forecasted, it is likely that the region’s total demand will hit a tipping point. Growth will begin to outpace the passive conservation that the region has been benefiting from, causing total demand to start to increase. Additionally, climate change will reduce both the annual snowpack and the amount of rainfall in the summer months.

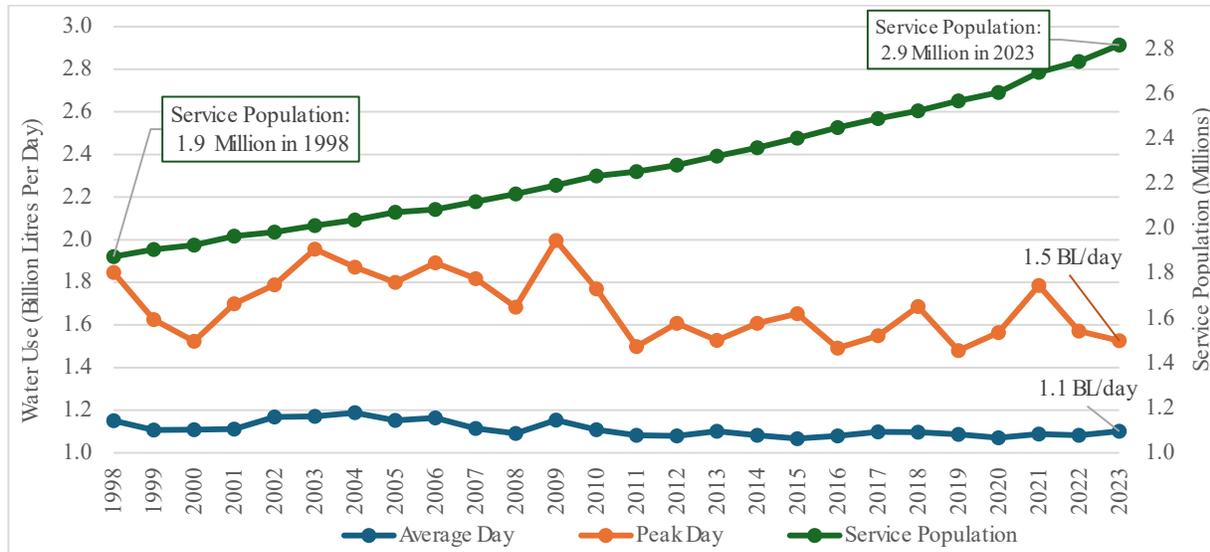


Figure 2  
Average day and peak day demand with serviced population (1998-2023)

Seasonal demand is defined as the increase in demand, usually in the summer, over the average day demand. This is primarily driven by increased outdoor water use, particularly lawn watering. During the warm, dry season, the finite volume of water stored in the reservoirs needs to meet the increased summer demand, that peaks in June, July, and August, until the rain returns in the fall. The total summer demand together with lower source water availability in the summer months is what drives the need for more source water.

Planning / Policy Implications

Addressing seasonal demand helps to maintain the source water, delay future source water projects, continue to provide environmental flows, and ensure that there is water in the reservoirs in the event of a drought or significant water main break (i.e. Increase system resiliency). Metro Vancouver continues to educate end users and to encourage members to reduce seasonal demands through the enforcement of the *Drinking Water Conservation Plan (DWCP)*. In parallel with conservation measures, Metro Vancouver needs to increase access to source water.

The water supply modelling that was completed as part of the Water Supply Outlook 2120 shows that the volume of water that is currently accessible from the three source water reservoirs will be enough water to meet the region’s needs until the mid-2030s, after which there is the potential for water volume shortages at the end of the high demand season. Metro Vancouver is currently

**Current Water Use Statistics and the Status of Metering in the Region**

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undertaking early work to support constructing the Coquitlam Lake Water Supply Project (CLWSP) to address the potential shortages. The CLWSP is a growth driven water supply project that will service the entire region. This growth driven supply project represents \$141.6 million of the Water Services 2026 to 2030 draft capital plan.

Peak Day Demand

For the Metro Vancouver region, the peak day is defined as the day in a year when the highest volume of water is drawn from Capilano, Seymour, and Coquitlam source supplies. The regional water transmission system (water mains, treatment plants, pump stations, etc.) must be capable of providing treated drinking water to members to meet needs during peak summer demand periods, which is modelled as the peak day demand. Therefore, the peak day demand is a very important parameter that informs the sizing and timing of transmission system infrastructure.

As shown in Figure 2, the peak day demand has decreased over the past 20 years, despite a growing population. This is mainly attributable to the DWCP and the increasingly stringent regional lawn watering restrictions. Since 2011, the peak day demand has remained relatively steady (between 1.5 and 1.8 billion litres a day).

Planning / Policy Implications: Similar to average day demand, population growth and climate change will cause the peak day to increase in the future. New growth driven projects in the transmission system are still required to service the faster-growing parts of the region. There are currently 20 transmission system growth projects with a total of \$1.4 billion on the Water Services capital plan, including:

- Coquitlam Water Main
- Kennedy Newton Water Main
- Newton Pump Station No. 2
- South Surrey Main No. 2
- Annacis Water Supply Tunnel
- Whalley Kennedy Main No. 2
- Fleetwood Reservoir
- Annacis Main No. 5 (North & South)
- Haney Main No. 4 (West Section)

All are located on the eastern side of the region, and five are located south of the Fraser River, which is where the region is growing the fastest.

**Informing the DWMP Update**

Without universal metering, there is uncertainty about the breakdown of how water is being used in the region. Assumptions or literature values are therefore used when the water consumption data is needed for demand modelling. By extension, there is a greater degree of uncertainty in the outputs of the modelling (the anticipated timing and sizing of growth projects), compared to jurisdictions that use universal metering data as inputs to their models. Therefore, proposed strategies in the DWMP update focus on improving data (by advancing residential water metering), enhancing models and demand forecasting, increasing system resiliency and incorporating adaptive planning principles.

Given the high proportion of residential demand (65 per cent of total) and high estimated residential per capita consumption in the region, the residential sector must be the focus of water conservation policies and strategies to impact overall average day and peak day water demand. The strategies include advancing residential water metering and other active conservation measures.

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**ALTERNATIVES**

This is an information report. No alternatives are presented.

**FINANCIAL IMPLICATIONS**

This is an information report; there are no direct financial impacts presented.

The GVWD's draft capital plan for 2026 to 2030 is \$3,074 Million with growth projects representing 47 per cent of the total. The 2025 peak seasonal rate is \$1.42/m<sup>3</sup> and the off-peak seasonal rate is \$0.71/m<sup>3</sup>, for a blended rate of \$1.00/m<sup>3</sup>. This is relatively cheap when compared to other utilities, for example the Region of Waterloo was charging \$1.26/m<sup>3</sup> in 2025 and San Francisco is charging \$2.83/m<sup>3</sup>. When compared to buying drinking water from a store, a local store charges about \$1.98 for 4 litres of water and Metro Vancouver charges about \$0.004 for 4 litres of bulk drinking water.

**CONCLUSION**

Understanding current and historical water use patterns in the Metro Vancouver region informs effective infrastructure planning, policy development and strategic planning such as the update to the Drinking Water Management Plan (DWMP). In 2023, Metro Vancouver's total per capita water consumption was 379 litres per day with residential estimated at 246 litres LPCD. Additionally, only 35 per cent of serviced connections were metered in 2021, which represents 48 per cent of total water consumption. Without universal metering, there is uncertainty about the breakdown of how water is being used in the region. Proposed strategies focus on advancing residential water metering to enable accurate, data-driven decision making and support reductions in per capita water use.

The average day demand has stayed relatively constant at 1.1 BL per over the past 20 years. The peak day demand has decreased over the past 20 years, despite a growing population, and was 1.5 BL per day in 2023. With the significant increase in population forecasted, combined with the impacts of climate change on water supply and amount of rainfall in summer months, the demand metrics for water will likely increase. Therefore, the DWMP must include strategies and actions that both increase access to source water and strengthen conservation measures.

**ATTACHMENT**

1. Presentation re: Current Water Use Metrics and Status of Metering in the Region.

**REFERENCES**

1. Anthony, V. (2024). Water Use by Sector in Metro Vancouver: 2000 – 2021 Regional Results [Staff report to Water Committee meeting on 2024, April 3]. <https://metrovancover.org/boards/Water/WAT-2024-04-03-AGE.pdf#page145>.
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3. Metro Vancouver, Water Services Department, 2023 Water Consumption Statistics Report (issued December, 2024), Appendix A. <https://metrovancover.org/services/water/Documents/water-consumption-statistics-report-2023.pdf#search=2023%20water%20consumption>

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4. Metro Vancouver, Water Services Department, Water Supply Outlook 2120, issued September 2019, Page 22. <https://metrovancover.org/services/water/Documents/water-supply-outlook-2120.pdf>

77649520



Seymour Capilano Filtration Plant, July 2018

## Current Drinking Water Use Metrics and Status of Metering in the Region

Water Committee

Linda Parkinson

Director, Policy, Planning & Analysis, Water Services

September 17, 2025

77646914

**metro**vancouver

## AGENDA

- Drinking Water Management Plan update
- Water use in the region
- Drivers of drinking water demand
- Water metering progress
- Water system design metrics
- Informing the DWMP Update
- Next steps

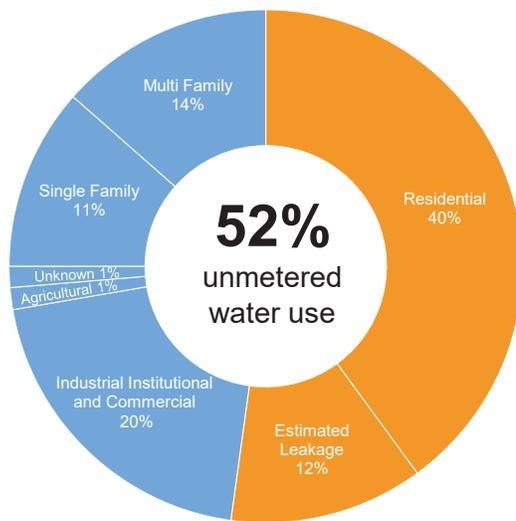
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# DRINKING WATER MANAGEMENT PLAN

## Water Committee Topics of Interest

Topic	Timing
DWMP Proposed Strategies and Actions Report	June 11
<ul style="list-style-type: none"> <li>Current Drinking Water Use Metrics and Status of Metering in the Region</li> </ul>	Sept 17
<ul style="list-style-type: none"> <li>Renewed Drivers for Water Metering</li> </ul>	Oct 15
<ul style="list-style-type: none"> <li>Planning for Growth – Supply and Demand</li> </ul>	Nov 12
DWMP Workshop for Water Committee feedback	Nov 26 (TBD)

## WATER USE IN THE REGION



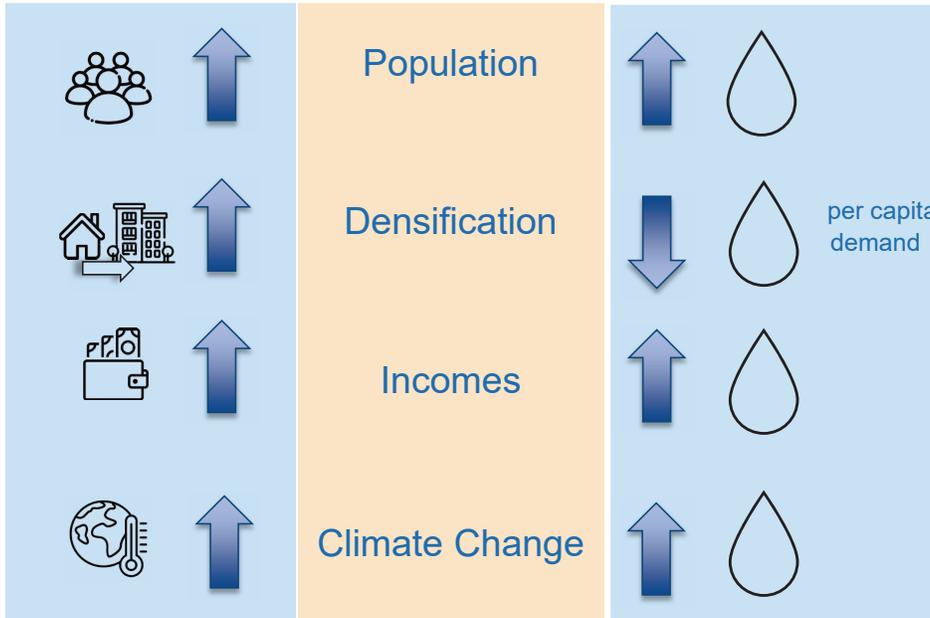
■ Unmetered water use     ■ Metered water use

\*2021 data

# DRIVERS OF DRINKING WATER DEMAND

Passive and Active

Passive  
Demand Drivers

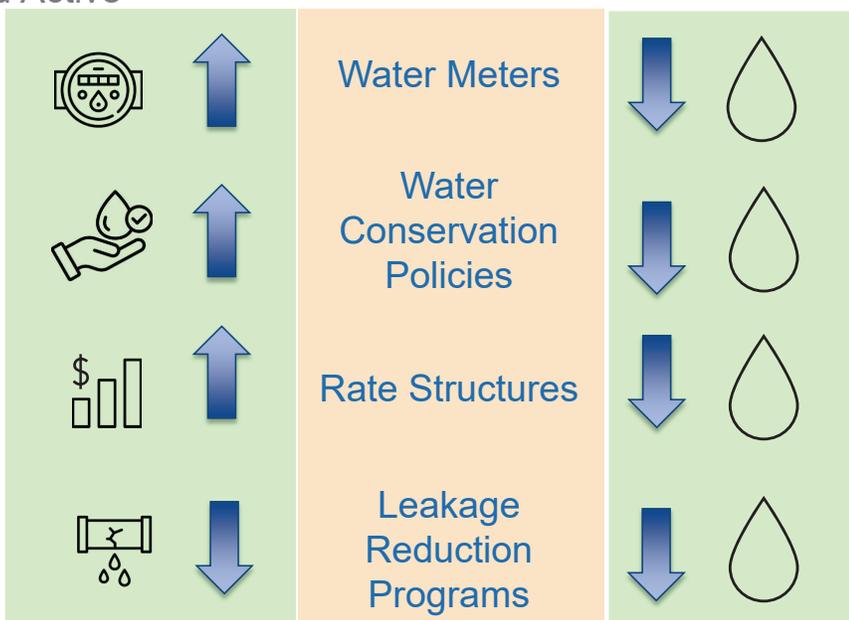


Impacts on Demand

# DRIVERS OF DRINKING WATER DEMAND

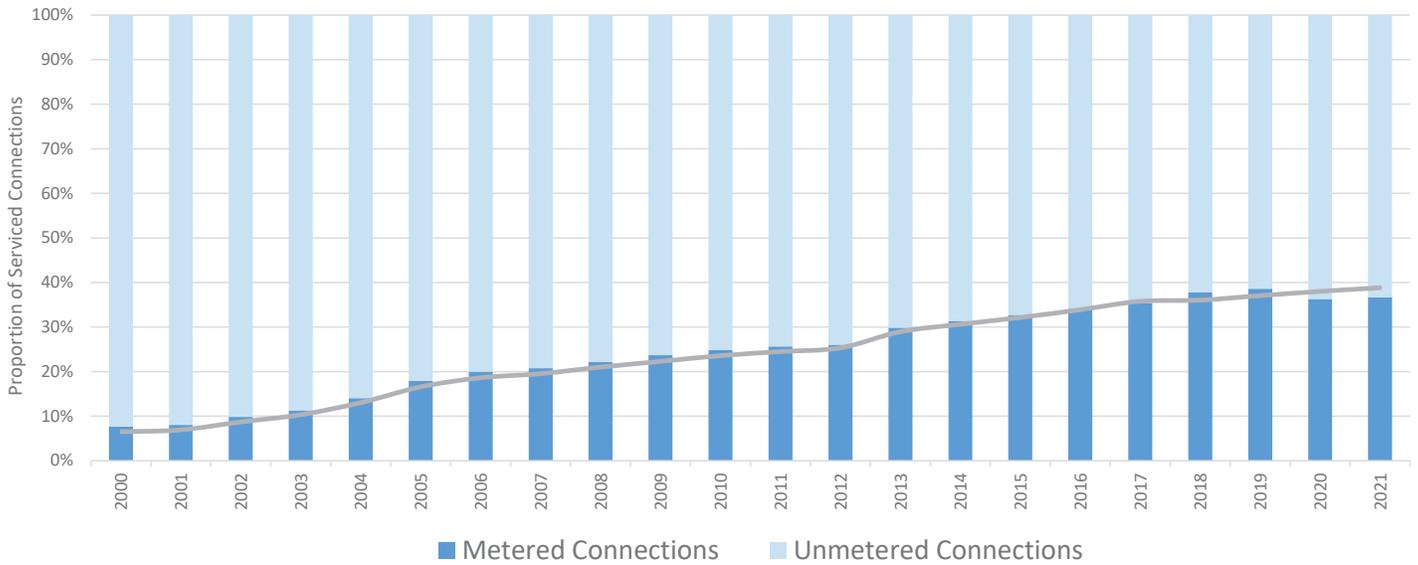
Passive and Active

Active  
Demand Drivers

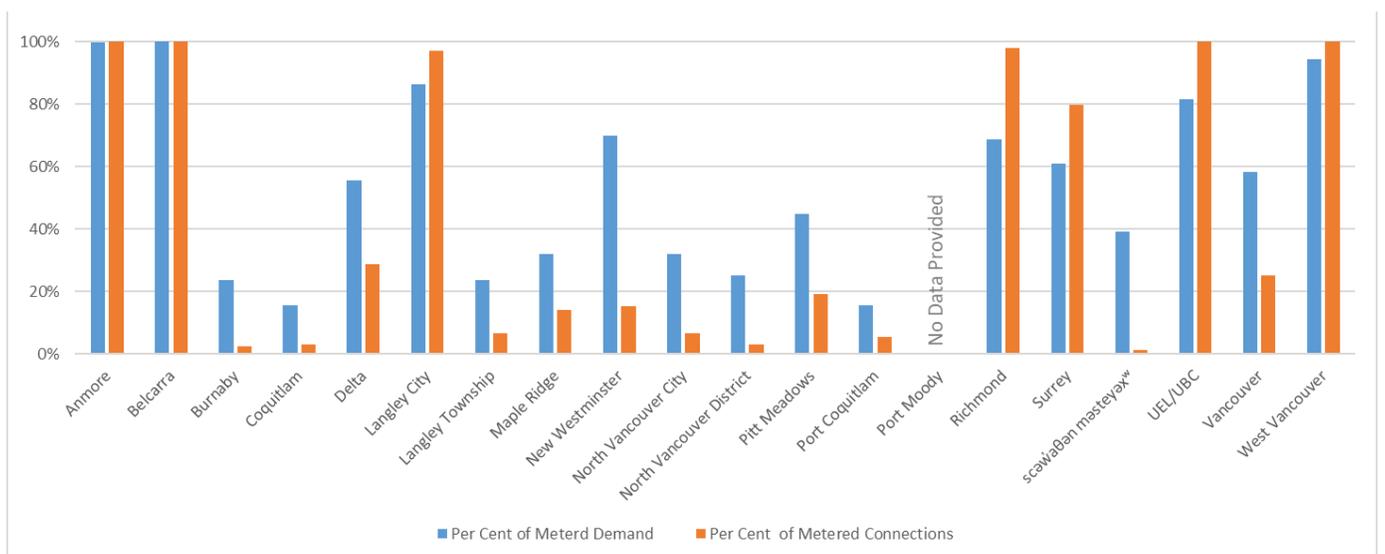


Impacts on Demand

# WATER METERING PROGRESS



# CURRENT STATUS OF WATER METERING



\*2021 data

## PER CAPITA WATER USE METRICS

<b>Total Per Capita Demand</b>	Total Water Consumption ÷ Total Population	<b>379 Litres per capita per day (2023)</b>
<b>Residential Per Capita Demand</b>	Residential demand estimated as 65% of total consumption	<b>246 Litres per capita per day (2023)</b>

## WATER USE INFORMS SYSTEM DESIGN

<b>Average Day and Seasonal Demand</b>	Drives the <b>timing</b> of the source water	<b>1.1 BL/d (2023)</b>
<b>Peak Day Demand</b>	Drives <b>sizing</b> and <b>timing</b> of transmission system	<b>1.5 BL/d (2023)</b>

## INFORMING THE DWMP UPDATE

Facts	Challenges	Proposed Solutions
<ul style="list-style-type: none"> <li>- 52% of drinking water is unmetered</li> <li>- 65% of drinking water is used by people in homes</li> <li>- Regional per capita demand is high</li> </ul>	<ul style="list-style-type: none"> <li>- Limited awareness of water use</li> <li>- Uncertain leakage rate</li> <li>- Unable to detect leaks</li> <li>- Uncertainty in long-term planning</li> <li>- Barrier to advancing 'active' conservation</li> </ul>	<ul style="list-style-type: none"> <li>- Advance residential metering</li> <li>- Reduce drinking water use through active conservation</li> <li>- Continue advancing the recovery and reuse of non-potable water</li> <li>- Prepare for future drinking water demands</li> </ul>

## NEXT STEPS

Preparing for DWMP Workshop

Topic	Timing
DWMP Proposed Strategies and Actions Report	June 11
Current Drinking Water Use Metrics and Status of Metering in the Region	Sept. 17
Renewed Drivers for Water Metering	Oct. 15
Planning for Growth – Supply and Demand	Nov. 12
DWMP Workshop for Water Committee Feedback	Nov. 26 (TBC)



Barnston Maple Ridge Pump Station, June 2016

Questions

**metro**vancouver

## Responses to Questions from Water Committee members from Previous Meetings

### 1- Greater Vancouver Water District (GVWD) versus Metro Vancouver population for 2023

- Metro Vancouver: 2,983,994
- GVWD: 2,902,795  
Including 79 per cent of Township of Langley and 68 per cent of District of West Vancouver populations
- Total un-serviced MV population 81,200

#### Additional notes:

- Please note the MV Population figure 2,983,994 from [2023 Water Consumption Statistics Report](#) includes White Rock but excludes Lions Bay and Bowen Island whose populations in 2023 were 1,530 and 4,674 people respectively
- The City of White Rock fully depends on its own water supply wells and is not a GVWD member jurisdiction
- Township of Langley: GVWD Service Percentage (2023): 79 per cent  
This reflects the portion of the Township's population that receives water from GVWD, with the remainder served by local wells.
- District of West Vancouver: GVWD Service Percentage (2023): 68 per cent  
This reflects the proportion of total demand that is provided by the GVWD. The District is served by both GVWD and local sources and a portion of the population is serviced exclusively by the District's Montizambert Creek source.

### 2- Estimated Breakdown of Residential Water Use in MV

End Uses	Litres per capita per day	Percentage %
Shower	72	29
Faucet	38	15
Toilet	34	14
Clothes Washer	25	10
Bath	15	6
Dishwasher	4	2
Other indoor use	2	1
Outdoor residential	15	6
Unaccounted for water use*	42	17
<b>TOTAL</b>	<b>246</b>	<b>100</b>

\* This includes outdoor water use, private side leaks, and unaccounted for leaks in the local distribution system

The data in this table is estimated based on:

- 1- Water Research Foundation's 2016 report, Residential End Uses of Water, Version 2,
- 2- 2021 data from the GVWD and Member Jurisdiction Water Use by Sector Report 1985-2021
- 3- BC Plumbing Code (2018 onward) and Vancouver Building By-law (2014 onward) requirements

### 3- Seasonal and Tiered Rates

- Members who charge seasonal rates to metered customers are:
  - City of Coquitlam
  - City of North Vancouver
  - City of Vancouver
  - University Endowment Land
- Members who charge tiered rates (inclining block rate) for metered customers in one or more sectors (note base charges typically differ based on service size):
  - City of Delta (blocks are different depending on residential or agricultural)
  - Township of Langley (for both residential and commercial)
  - District of West Vancouver (single family residential only)
- City of New Westminster (Note: declining block rate; multi-family only)

Member Jurisdiction	Seasonal Rates	Tiered Rates	Notes	Links
<b>Village of Anmore</b>	No	No	2025 \$3.54/m <sup>3</sup>	<a href="https://anmore.com/village-hall/taxes-utilities/utilities/">https://anmore.com/village-hall/taxes-utilities/utilities/</a>
<b>Village of Belcarra</b>	No	No	2024 Flat Rate \$1,286	<a href="https://belcarra.ca/assets/media/2022/08/Bylaw-456-2012-VOB-Consolidated-Waterworks-Bylaw.pdf">https://belcarra.ca/assets/media/2022/08/Bylaw-456-2012-VOB-Consolidated-Waterworks-Bylaw.pdf</a>
<b>City of Burnaby</b>	No	No	Flat Rate varies by property type	<a href="https://www.burnaby.ca/services-and-payments/utility-fees-and-charges/residential-utility-fees">https://www.burnaby.ca/services-and-payments/utility-fees-and-charges/residential-utility-fees</a>
<b>City of Coquitlam</b>	Yes	No	2025 High Season (June 1 - Sept 30) \$2.1526/m <sup>3</sup> 2025 Low Season \$1.4350/m <sup>3</sup> Flat Rate varies by property type	<a href="#">Utility Fee   Coquitlam, BC</a>
<b>City of Delta</b>	No	Yes (metered only)	First 125 m <sup>3</sup> consumed is charged at \$1.42/m <sup>3</sup> . Consumption above 125 m <sup>3</sup> is charged at \$1.90/m <sup>3</sup> . Flat Rate varies by property type	<a href="https://www.delta.ca/services/property-taxes-utilities/utilities">https://www.delta.ca/services/property-taxes-utilities/utilities</a> <a href="https://www.delta.ca/media/3789">https://www.delta.ca/media/3789</a>

Member Jurisdiction	Seasonal Rates	Tiered Rates	Notes	Links
<b>City of Langley</b>	No	No	2025 \$1.89/m <sup>3</sup>	<a href="https://www.langleycity.ca/PropertyTaxes/utilities">https://www.langleycity.ca/PropertyTaxes/utilities</a>
<b>Township of Langley</b>	No	Yes (metered only)	2025 Rates: 0–500 (167m <sup>3</sup> per billing period) m <sup>3</sup> : \$0.98/m <sup>3</sup> Over 500 (over 168m <sup>3</sup> per billing period) m <sup>3</sup> : \$1.28/m <sup>3</sup> Flat Rate varies by property type	<a href="https://www.tol.ca/en/services/utility-rates.aspx">https://www.tol.ca/en/services/utility-rates.aspx</a>
<b>City of Maple Ridge</b>	No	No	2025 1.4099 /m <sup>3</sup> Flat Rate varies by property type	<a href="https://www.mapleridge.ca/media/file/2025-property-tax-rates">https://www.mapleridge.ca/media/file/2025-property-tax-rates</a>
<b>City of New Westminister</b>	No	Yes (metered only)	2025 Multi-Family Tiered Rates - declining block rate: 0–10,000 m <sup>3</sup> : \$7.23 10,000-30,000 m <sup>3</sup> : \$5.26 30,000–50,000m <sup>3</sup> : \$4.14 over 50,000m <sup>3</sup> : \$3.13) Base charge \$72.24 Flat Rate varies by property type	<a href="https://www.newwestcity.ca/propertytaxes-utilities#utilities">https://www.newwestcity.ca/propertytaxes-utilities#utilities</a>
<b>City of North Vancouver</b>	Yes	No	2025 High Season (June 1 - Sept 30) \$1.6493/m <sup>3</sup> 2025 Low Season \$2.0616/m <sup>3</sup> Flat Rate varies by property type	<a href="https://www.cnv.org/home-property/utility-rates">https://www.cnv.org/home-property/utility-rates</a>
<b>District of North Vancouver</b>	No	No	Flat Rate varies by property type	<a href="https://www.dnv.org/you-r-home-property/utilities">https://www.dnv.org/you-r-home-property/utilities</a>
<b>City of Pitt Meadows</b>	No	No	Rates updated in 2024 Metered Rate \$0.94/m <sup>3</sup> Flat Rate varies by property type	<a href="https://www.pittmeadows.ca/sites/default/files/2024-05/Waterworks%20Bylaw%20No.%202891%2C%202021%20-%20Consolidated%20Version_0.pdf">https://www.pittmeadows.ca/sites/default/files/2024-05/Waterworks%20Bylaw%20No.%202891%2C%202021%20-%20Consolidated%20Version_0.pdf</a>
<b>City of Port Coquitlam</b>	No	No	Flat Rate varies by property type	<a href="https://www.portcoquitlam.ca/services/utility-bills">https://www.portcoquitlam.ca/services/utility-bills</a>
<b>City of Port Moody</b>	No	No	Flat Rate varies by property type	<a href="https://www.portmoody.ca/home-and-property/property-taxes-and-utility-fees/utility-bills/">https://www.portmoody.ca/home-and-property/property-taxes-and-utility-fees/utility-bills/</a>
<b>City of Richmond</b>	No	No	2025 \$1.66/m <sup>3</sup>	<a href="#">Utility Rates - City of Richmond, BC</a>

Member Jurisdiction	Seasonal Rates	Tiered Rates	Notes	Links
<b>City of Surrey</b>	No	No	2025 \$1.3407/m3 Flat Rate varies by property type	<a href="https://www.surrey.ca/services-payments/utility-billing-services/understanding-utility-rates-calculations">https://www.surrey.ca/services-payments/utility-billing-services/understanding-utility-rates-calculations</a>
<b>scəwáθən məsteyəx<sup>w</sup> (Tsawwassen First Nation)</b>	No	No	Flat Rate varies by property type	<a href="https://tsawwassenfirstnation.com/pdfs/TFN-Laws-Regulations-Policies/Regulations/Annual%20Utility%20Charge%20Regulation%20(2025)%2004.2025.pdf">https://tsawwassenfirstnation.com/pdfs/TFN-Laws-Regulations-Policies/Regulations/Annual Utility Charge Regulation (2025) 04.2025.pdf</a>
<b>City of Vancouver</b>	Yes	No	2025 High Season (May 1 - Oct 15) 4.934/unit 2025 Low Season 3.936/unit Flat Rate varies by property type	<a href="#">Utility meter rates for water, sewer, and energy   City of Vancouver</a>
<b>District of West Vancouver</b>	No	Yes (metered only)	2025 Rates: 0–30 m3: \$1.70 (\$51) 31–60 m3: \$1.94 (\$105) 61–180 m3: \$2.97 (\$445.34) over 180 m3: \$4.04 (\$445.34) Multi-family/commercial/institutions and mixed properties charged a flat fee of \$2.29/m3	<a href="https://westvancouver.ca/services/taxes-utility-fees/utility-fees/your-utility-bill-explained">https://westvancouver.ca/services/taxes-utility-fees/utility-fees/your-utility-bill-explained</a>
<b>UEL</b>	Yes	No	2025 High Season (June 1 - Sept 30) \$3.3276/m3 2025 Low Season \$2.6620/m3 Flat Rate varies by property type	<a href="#">University Endowment Lands - Residential Services - The UEL Drinking Water System</a>

#### 4- Provide information on ICI and agriculture metering rates across the region in workshop report

- Agriculture metering rates are included in the ICI rate. Separate agriculture values can be provided on request.
- For members that have not achieved full ICI metering, typically most of the unmetered connections are agricultural connections followed by institutional connections.

#### ICI Metering Rates by Member

Member	% ICI* Metered (2021 data)
City of Langley	100%
City of North Vancouver	100%
City of Port Coquitlam	100%
City of Vancouver	100%
District of West Vancouver	100%
scəwʌθən məsteyəx <sup>w</sup>	100%
UEL/UBC	100%
City of Richmond	96%
City of Pitt Meadows	96%
City of Surrey	95%
City of Delta	93%
City of Coquitlam	84%
City of Burnaby	78%
City of Maple Ridge	75%
District of North Vancouver	68%
Village of Anmore	insufficient info <sup>+</sup>
Village of Belcarra	insufficient info <sup>+</sup>
Township of Langley	insufficient info <sup>+</sup>
City of New Westminster	insufficient info <sup>+</sup>
City of Port Moody	no info
<b>REGION</b>	<b>98%</b>

\* ICI consists of industrial, commercial, institutional, other, unknown, and agricultural connections

+ total number of ICI connections were not provided

Source: Metro Vancouver. (2024). *GVWD and Member Jurisdiction Water Use by Sector Report 1985-2021*

#### 5- Cost of Meter Installation

These costs are based on data provided by member jurisdictions as part of the Metro Vancouver Assessment of Drinking Water Conservation Potential 2025:

- Residential meter including a box and pavement cuts - \$3750
- Residential meter where a meter box already exists \$1000
- Non-residential meter \$3434

## Metro Vancouver Population Projections

- Regional Planning produces population projections annually for the region to guide long-range planning for housing, utilities, transit, and land use. Unlike the federal government, which does not provide regional-level projections, Metro Vancouver develops detailed forecasts for the region and its municipalities. While the Province also prepares regional projections, it uses a different methodology that does not incorporate local land use capacity or approved municipal planning, and its projections do not extend to smaller geographies.
- Between 2000-2020, Metro Vancouver averaged about 37,500 net new residents per year, driven primarily by immigration, along with interprovincial migration, movement within B.C., and natural increase (births minus deaths). Following the federal government's post-pandemic increase to immigration targets, Metro Vancouver's 2024 long-range projections rose to approximately 50,000 net new residents annually to 2050. However, in 2025, federal immigration targets were reduced and new restrictions on non-permanent residents introduced, leading to a downward revision of long-term projections to about 42,500 net new residents per year. These changes mean the region is expected to experience minimal or no growth in 2026 and possibly 2027, before returning to more stable growth post-2027.
- Metro Vancouver's projections are developed using a cohort component model that integrates historical growth patterns with adjustments reflecting municipal development plans, policies, and long-range strategies. The model leverages data from Statistics Canada census and annual estimates, national and provincial growth forecasts, local land capacity analysis, and assumptions about future trends. Using a hybrid top-down and bottom-up approach, projections are prepared at multiple geographic scales, from the regional level down to municipalities, sewerage and water districts, and Traffic Zone levels, enabling detailed infrastructure and service planning across the region. The latest projections, released in September 2025, fully incorporate the most recent federal policy changes.



Low water levels at the Coquitlam Reservoir fall 2022

# The Draft Drinking Water Management Plan

Planning today to continue to deliver reliable, high-quality drinking water tomorrow

**Linda Parkinson**  
Director, Policy, Planning, and Analysis

**Nermine Tawfik**  
Program Manager, Policy, Planning, and Analysis

**Vanessa Anthony**  
Program Manager, Water Services Community Engagement

Water Committee Special Meeting, November 26, 2025  
80412826



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Clayton Reservoir 2024



## THE DRAFT DRINKING WATER MANAGEMENT PLAN

- A milestone moment for Metro Vancouver and the Water Committee
- The Drinking Water Management Plan sets the course for the next decade
- It ensures reliable delivery of high-quality drinking water as the region grows and the climate changes
- Planning ahead sustains affordability and service for future generations



2

# PURPOSE OF TODAY'S SESSION

Review, reflect, and confirm direction

- Context and objectives for the Drinking Water Management Plan
- Overview of key themes and regional priorities
- Committee discussion and feedback to guide next steps

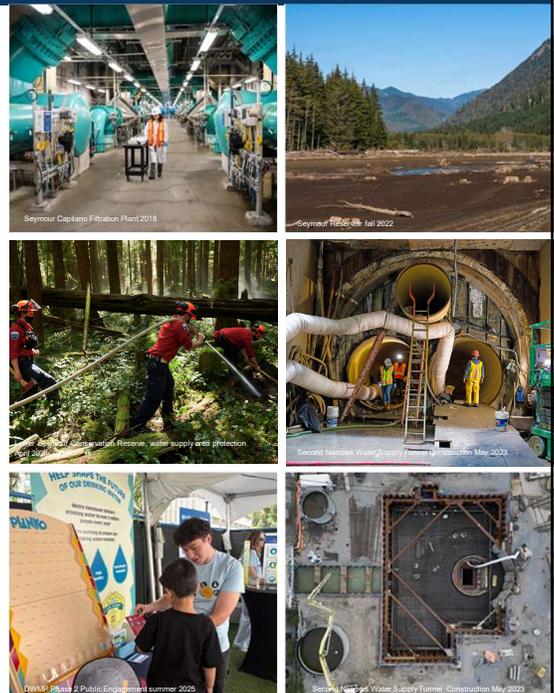


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# OUR WATER. OUR FUTURE.

Our shared responsibility to protect a finite resource

- The Drinking Water Management Plan connects people, infrastructure, and the environment
- Reliable water delivery depends on planning, partnership, and stewardship



4



5

## WHY A NEW PLAN AND WHAT'S CHANGED

The region has changed and so must our approach

- The last Drinking Water Management Plan focused on improving water quality and supply reliability, and reducing per capita demand
- The new plan responds to challenges facing the system and increased uncertainty
- We can no longer rely on the past to predict the future
- The plan looks beyond infrastructure to long-term resilience and demand management

6

# CHALLENGES

## Pressures shaping the 2025 Drinking Water Management Plan

- Population Growth
- Hotter, drier summers and climate extremes
- Aging infrastructure
- High per-capita use and seasonal demand
- Public expectation for uninterrupted service



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# POPULATION GROWTH

## More people, higher demand

- Metro Vancouver adds 40,000+ people each year
- Fluctuating projections
- Metro Vancouver population projections: detailed forecasts for the region, updated annually

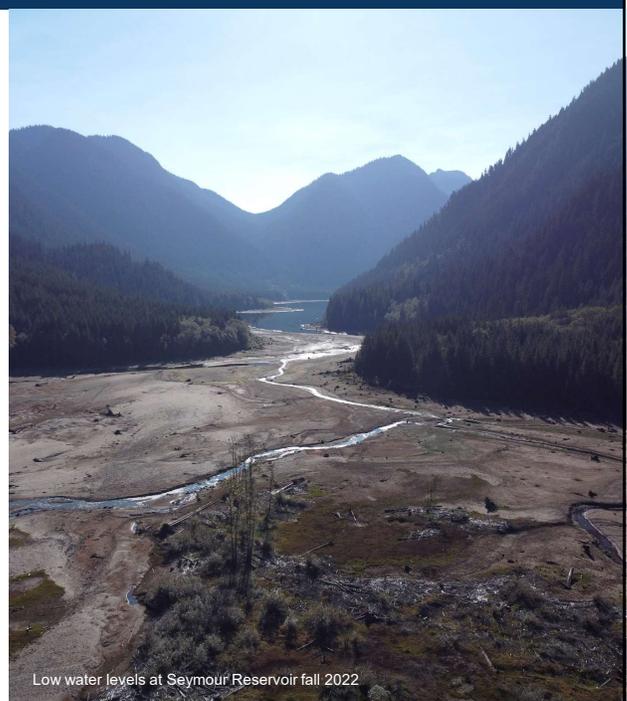


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# CLIMATE CHANGE PROJECTIONS

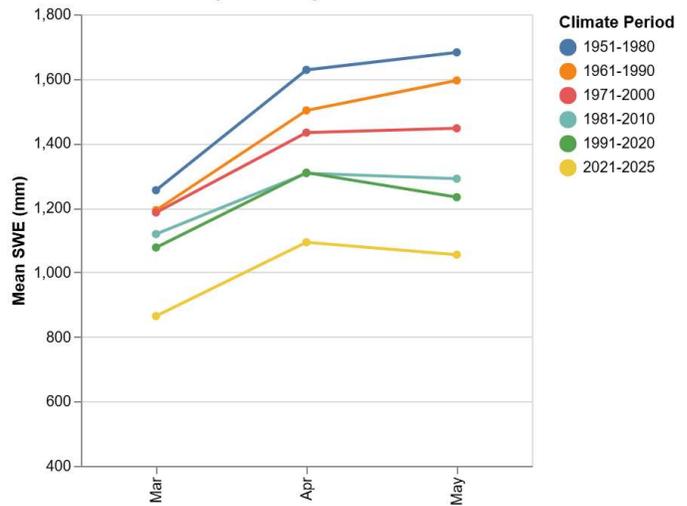
## Key projections for the 2050s

- An average rise of approximately 3°C
- Doubling the number of summer days >25°C
- Drier summers and longer dry spells
- Warmer winters, meaning fewer frost days and a decrease in the mountain snowpack
- More extreme rainfall events – 30% increase in rainfall on the wettest days



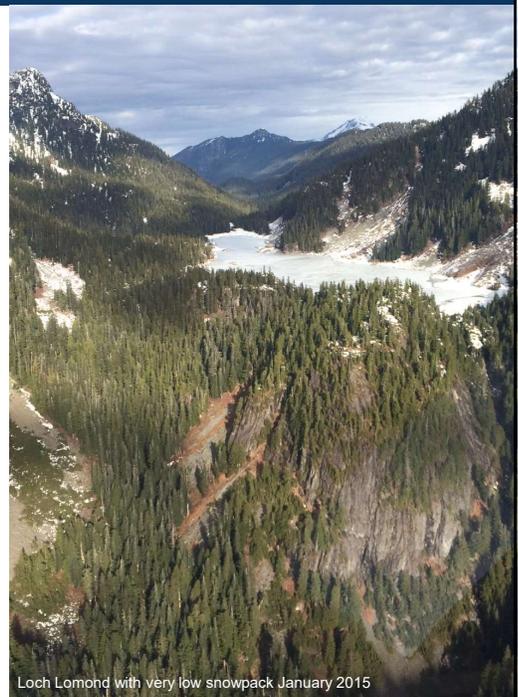
# DECREASING MOUNTAIN SNOWPACK

Snow Water Equivalent by Month - Palisade Lake



# LOOKING AHEAD

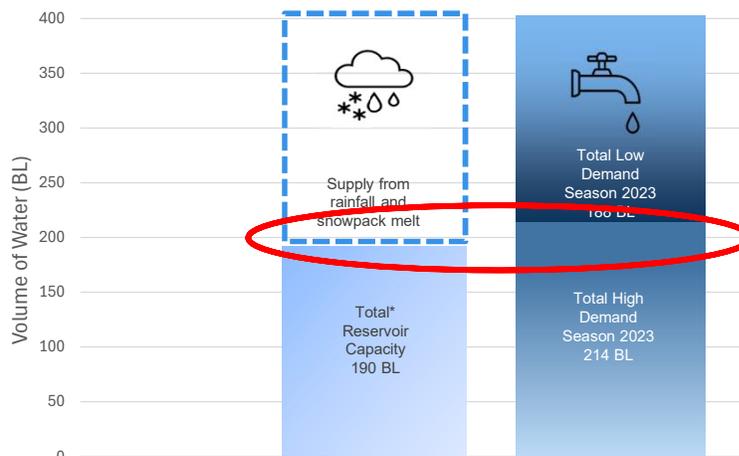
- Mountain snowpack has declined, especially at mid elevations, reducing spring runoff
- Weather extremes have impact on water supply and the economy
- Seasonal droughts are longer and more severe, stressing ecosystems and water demand during peak summer months



Loch Lomond with very low snowpack January 2015

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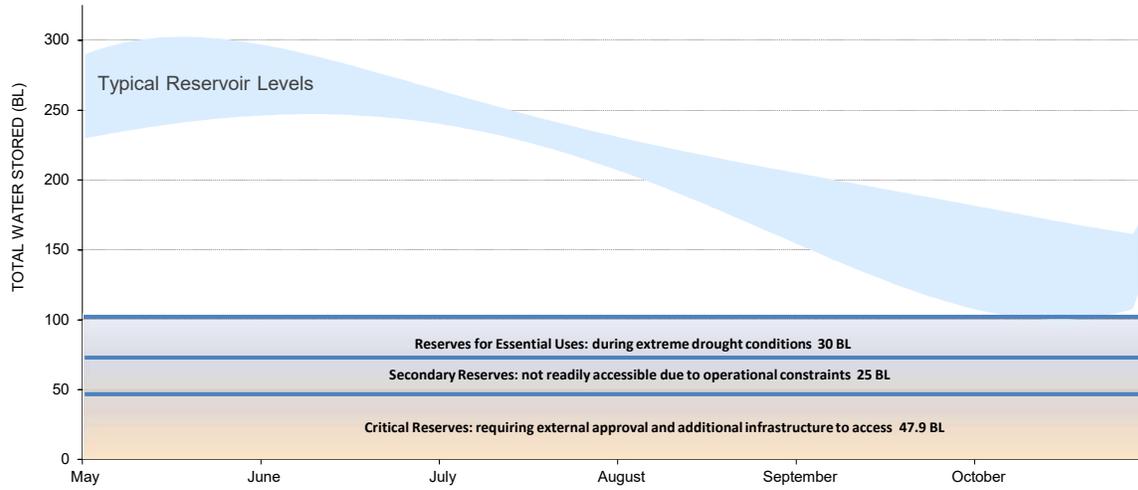
# ACCESSIBLE ANNUAL WATER SUPPLY



\*Accessible supply from Capilano, Seymour, Coquitlam and the Alpine Lakes

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# IMPACTS OF A CHANGING CLIMATE ON OUR RESERVOIRS



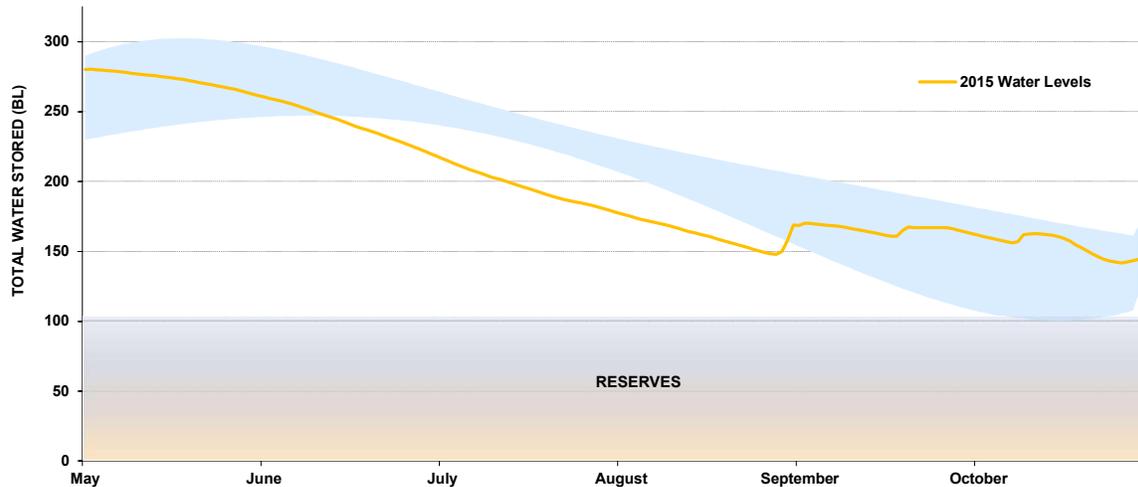
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# TOTAL DRINKING WATER SOURCE STORAGE

2015 Challenging Condition: Low Snowpack Conditions



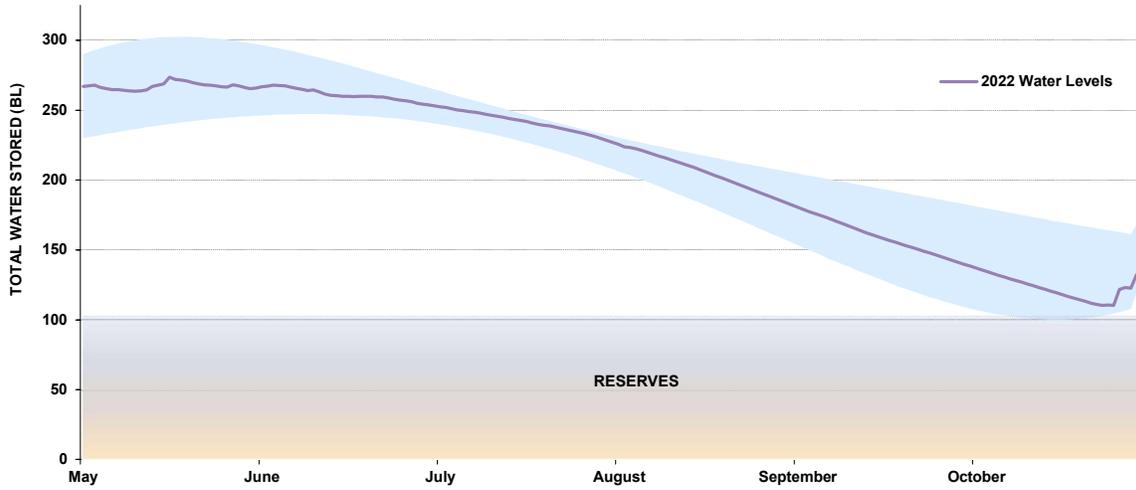
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# TOTAL DRINKING WATER SOURCE STORAGE

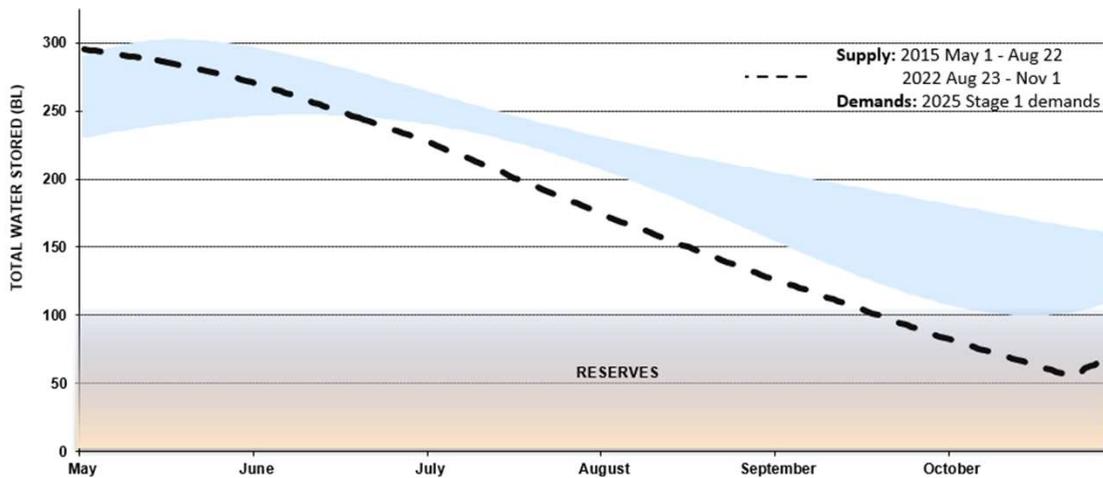
2022 Challenging Condition: Late Fall Rains



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# TOTAL DRINKING WATER SOURCE STORAGE

If 2022 and 2015 conditions happened in the same year



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# WHAT WE LEARNED FROM 2015: RESTRICTIONS ARE NOT ENOUGH

Business and economic impacts

Water restrictions are economically and operationally disruptive



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# WHAT WE LEARNED FROM 2015: RESTRICTIONS ARE NOT ENOUGH

2015 drought revealed system vulnerability

- Stage 3 restrictions protected supply during peak demand
- Long-term reliability requires proactive measures



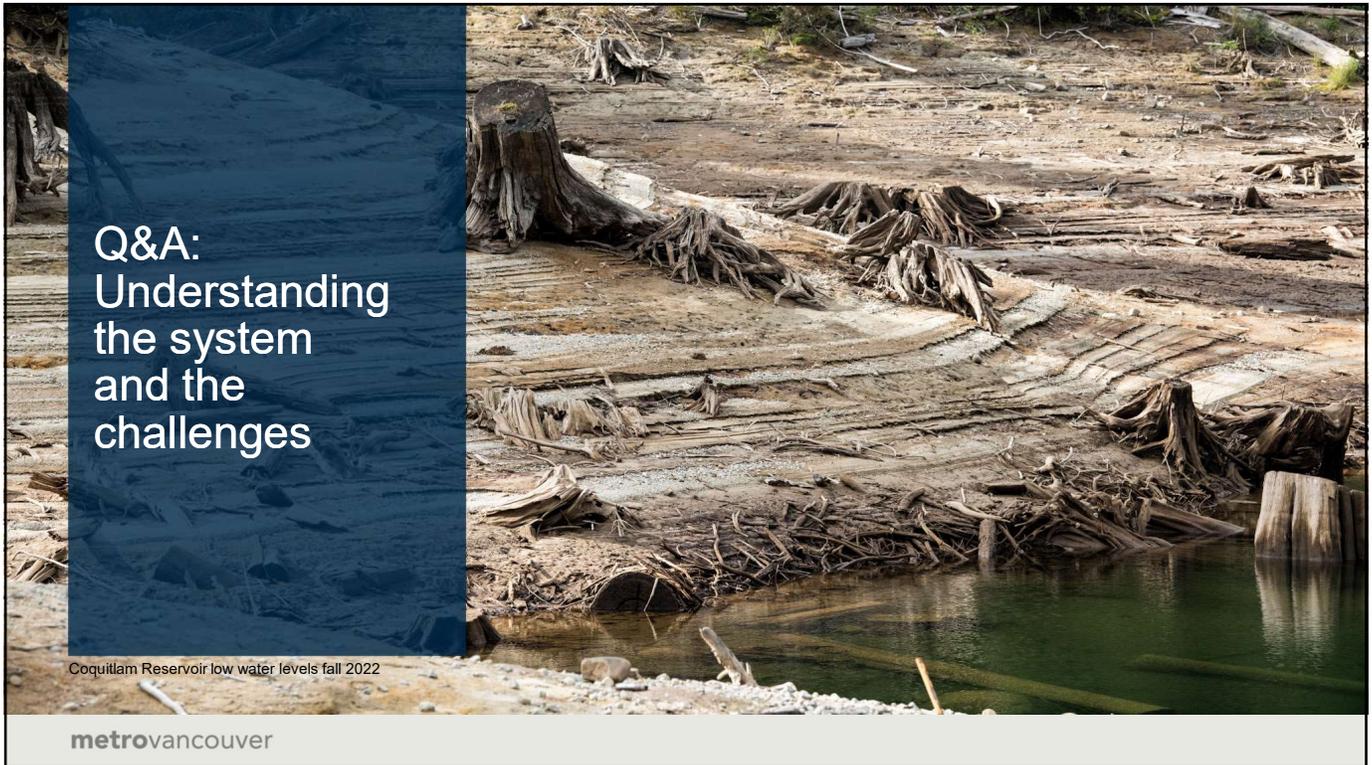
## How Metro Vancouver water restrictions affect local businesses

Drought conditions are having an impact on many Metro Vancouver businesses with some struggling under **Stage 3 water restrictions** and others finding a way to thrive.

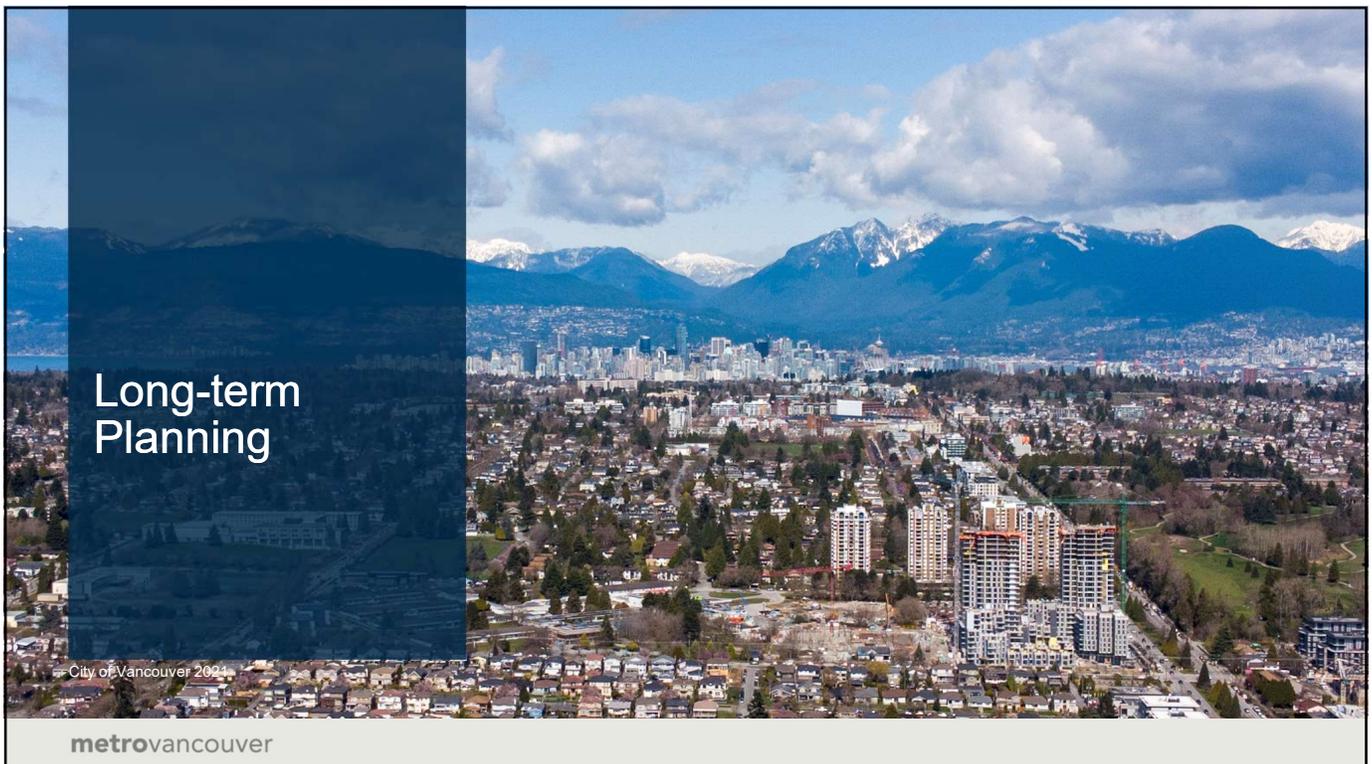
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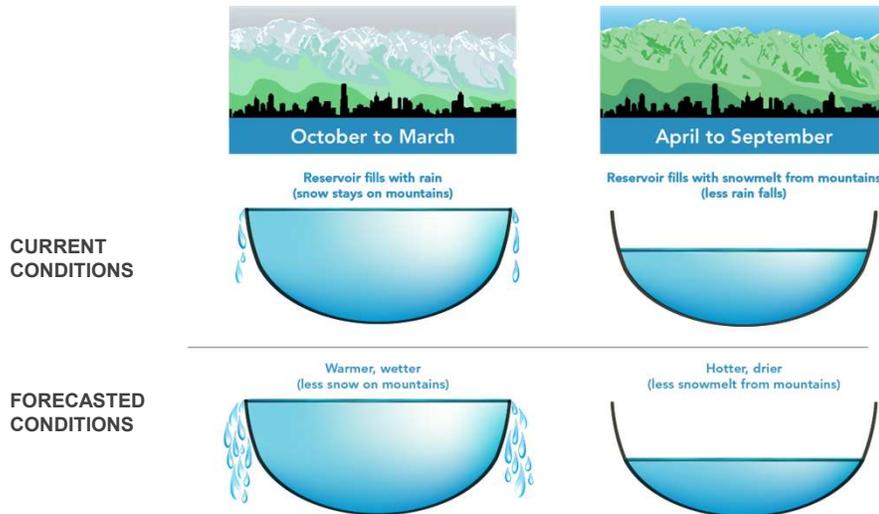
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# WATER SUPPLY FORECASTING

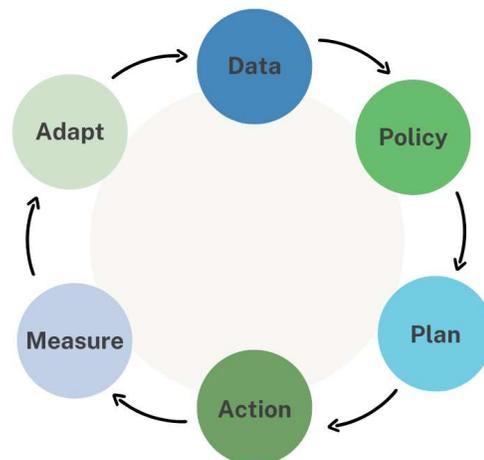
Water Supply Outlook 2120



# HOW THE DRINKING WATER MANAGEMENT PLAN FITS IN

A regional framework to turn data into coordinated action

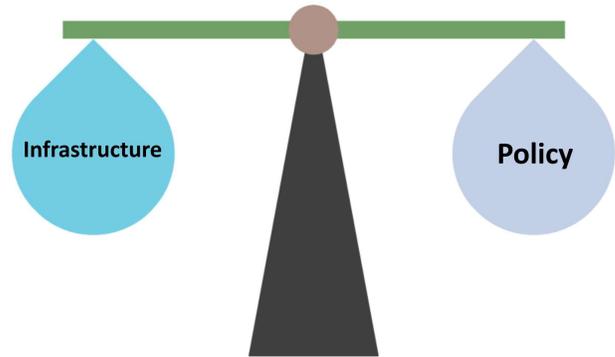
- Defines shared regional priorities and targets
- Guides decisions in related policies and plans: capital planning and conservation
- Ensures all jurisdictions are working from the same evidence and in the same direction



# PROJECTS AND POLICIES: TWO SIDES OF RESILIENCE

Why we need both supply and demand solutions

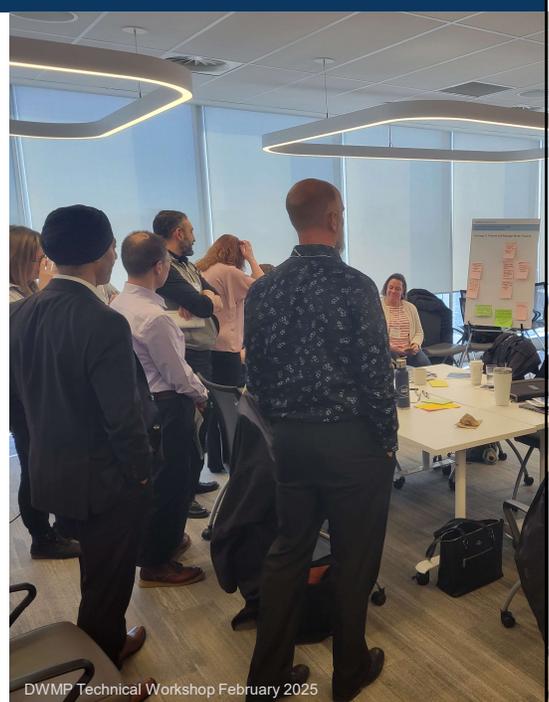
- Supply projects expand capacity and resilience, but they cost billions of dollars
- Policies and programs reduce demand and extend system capacity
- Together, they ensure one reliable and cost-efficient system



# WORKING TOGETHER ACROSS THE REGION

Collaboration drives the Drinking Water Management Plan

- Aligns Metro Vancouver and member jurisdictions on priorities and approaches
- Guides consistent decision-making across plans and programs
- Consistent regional approach is the most cost-effective for managing



DWMP Technical Workshop February 2025

# OUR WATER. OUR FUTURE.

Engaging people across the region to shape the future of our drinking water

- Engagement confirmed strong support for stewardship, conservation, and reliability
- Public values directly shaped the plan's priorities and actions



Community members participating in DWMP engagement events 2025

## Community Engagement and Public Values

DWMP Phase 2 public engagement at Mount Pleasant Day 2025



# A SUMMER OF RECORD PARTICIPATION AND CONNECTION

Engagement across the region-built understanding and pride



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## AT THE BOOTH

Turning learning into participation

- Visitors explored how the drinking water system works
- Activities included a trivia quiz and sharing personal stories about drinking water
- Each interaction deepened understanding of shared stewardship



Activities at the DWMP Phase 2 public engagement booth 2025

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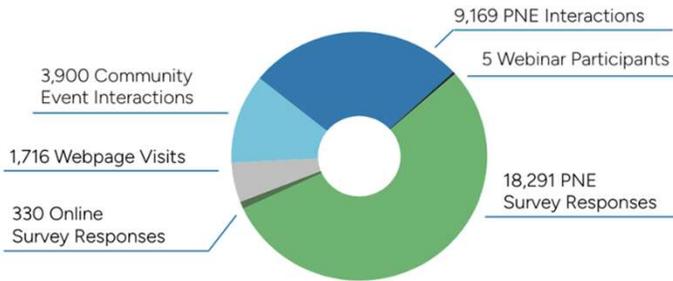
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# ENGAGEMENT REACH AND PARTICIPATION

33,000 interactions across Metro Vancouver

## How We Engaged

- 7 Community Events
- 15-Day PNE Activation
- DWMP Project Webpage
- 2 PNE Survey Questions
- Drinking Water Management Plan Online Survey
- 1 Online Webinar
- 5 Stakeholder Meetings



## Participation



**+33,000**  
People Interacted with Our Water. Our Future.

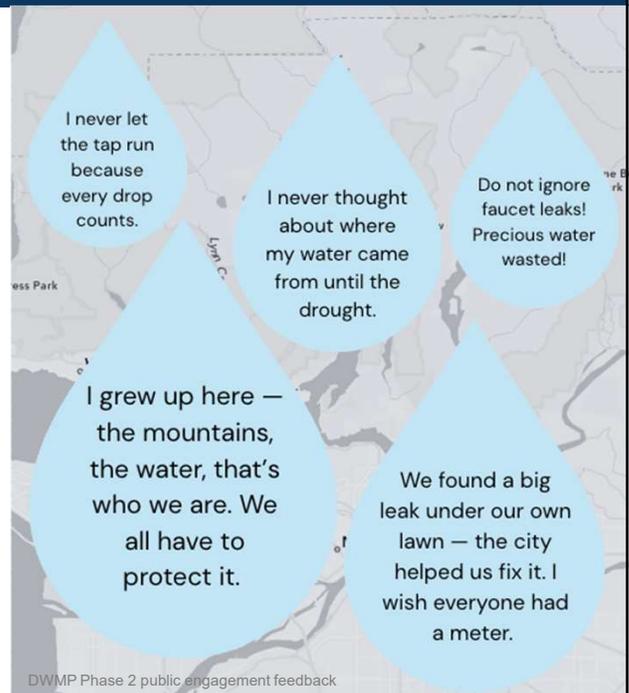


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# WHAT WE HEARD

Values that unite the region

- **Shared responsibility:** everyone has a role in protecting water
- **Preparedness and resilience:** support for climate adaptation and growth planning
- **Conservation mindset:** strong support for using water wisely
- **Support for metering:** fairness and leak detection matter



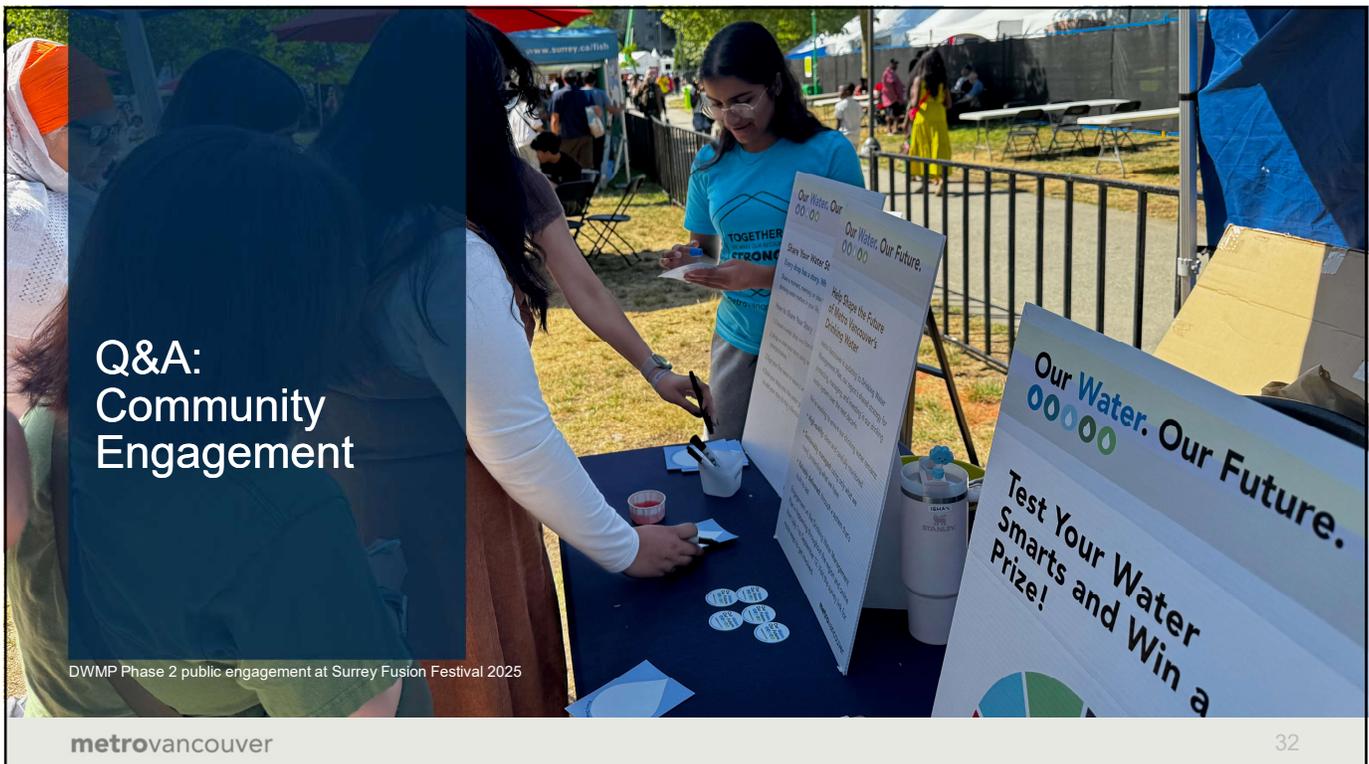
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# REFLECTING PUBLIC VALUES IN THE DRINKING WATER MANAGEMENT PLAN

Engagement insights directly shaped the plan's priorities

What We Heard	Reflected in
<ul style="list-style-type: none"> <li>• People want fair billing and better leak detection through water metering</li> </ul>	<b>Priority Area 3 – Conservation and Efficiency</b>
<ul style="list-style-type: none"> <li>• Residents asked for stronger watering rules, drought communication, and enforcement</li> </ul>	<b>Priority Area 3 – Conservation and Efficiency</b>
<ul style="list-style-type: none"> <li>• First Nations, business, and public feedback supported using non-potable water for irrigation and industry to conserve high-quality drinking water</li> </ul>	<b>Priority Area 3 – Conservation and Efficiency</b>
<ul style="list-style-type: none"> <li>• People are concerned about climate change, drought, and seismic risk</li> </ul>	<b>Priority Area 1 – Resilient Water System and Priority Area 2 – Water Supply Quantity and Quality</b>

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DWMP Phase 2 public engagement at Surrey Fusion Festival 2025

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## VISION AND GUIDING PRINCIPLES

### Vision:

Deliver high-quality drinking water in a reliable and environmentally sensitive manner to meet the needs of a growing region

### Guiding Principles:



## DRINKING WATER MANAGEMENT PLAN STRATEGIES AND ACTIONS FOR A RESILIENT FUTURE

From shared values to practical action

### Priority Areas:



- The Drinking Water Management Plan translates regional priorities into implementable strategies
- Each priority area addresses a critical part of system reliability and resilience
- Together, they form a roadmap for coordinated regional delivery



Resilient water system

## MAINTAINING AND ADAPTING CRITICAL INFRASTRUCTURE

Ensuring that infrastructure is resilient to climate change, natural hazards, and power outages.

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Resilient water system

-  Advance planning and designing for resilient infrastructure
-  Respond and recover from emergencies
-  Proactively manage existing infrastructure for longevity

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# PROTECTING WATER FROM SOURCE TO TAP

How we will safeguard drinking water quality and supply a growing region in the future in the face of changing conditions.



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Prepare for water quality changes due to climate change and natural hazards



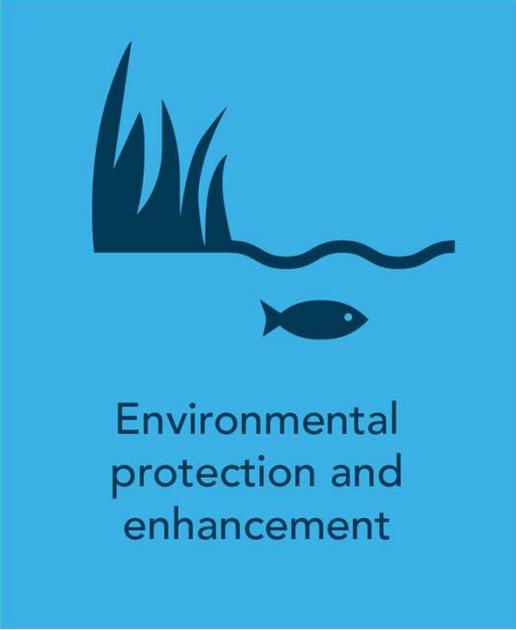
Protect and manage water quality



Prepare for future drinking water supply and demands



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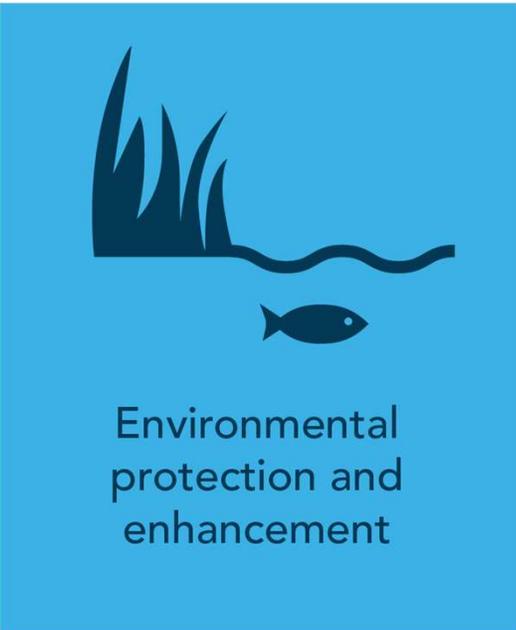
**HEALTHY ENVIRONMENT,  
HEALTHY WATER**

Advances integration of GHG reduction and environmental management with infrastructure planning and operations, recognizing the vital links between our drinking water and ecosystems.

Environmental protection and enhancement

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**HEALTHY ENVIRONMENT,  
HEALTHY WATER**

-  Reduce GHG emissions and implement energy efficiency measures
-  Advance ecological health and environmental stewardship
-  Support healthy fish populations in the Capilano, Seymour, and Coquitlam river systems
-  Minimize the environmental impacts of leaks and spills

Environmental protection and enhancement

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## USING EVERY DROP WISELY

This area promotes reducing per capita drinking water demand and increasing operational efficiency throughout the regional system.

**Target:** Metro Vancouver and members to work together to reduce total annual average demand to a maximum of 320 litres per capita per day by 2035.



Advance water metering to support conservation and system efficiency



Reduce drinking water use through active conservation



Optimize cost efficiency across operational and capital programs



Increase operational efficiency



Promote the recovery and reuse of non-potable water





## PEOPLE BEHIND THE SYSTEM

Focuses on improving the retention and recruitment of qualified water operators to ensure the continued safe and reliable delivery of drinking water

Operational workforce development

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## Operational workforce development

-  Promote regional youth recruitment opportunities
-  Collaborate with key industry advocates and training providers
-  Enhance career development opportunities for existing Metro Vancouver operators

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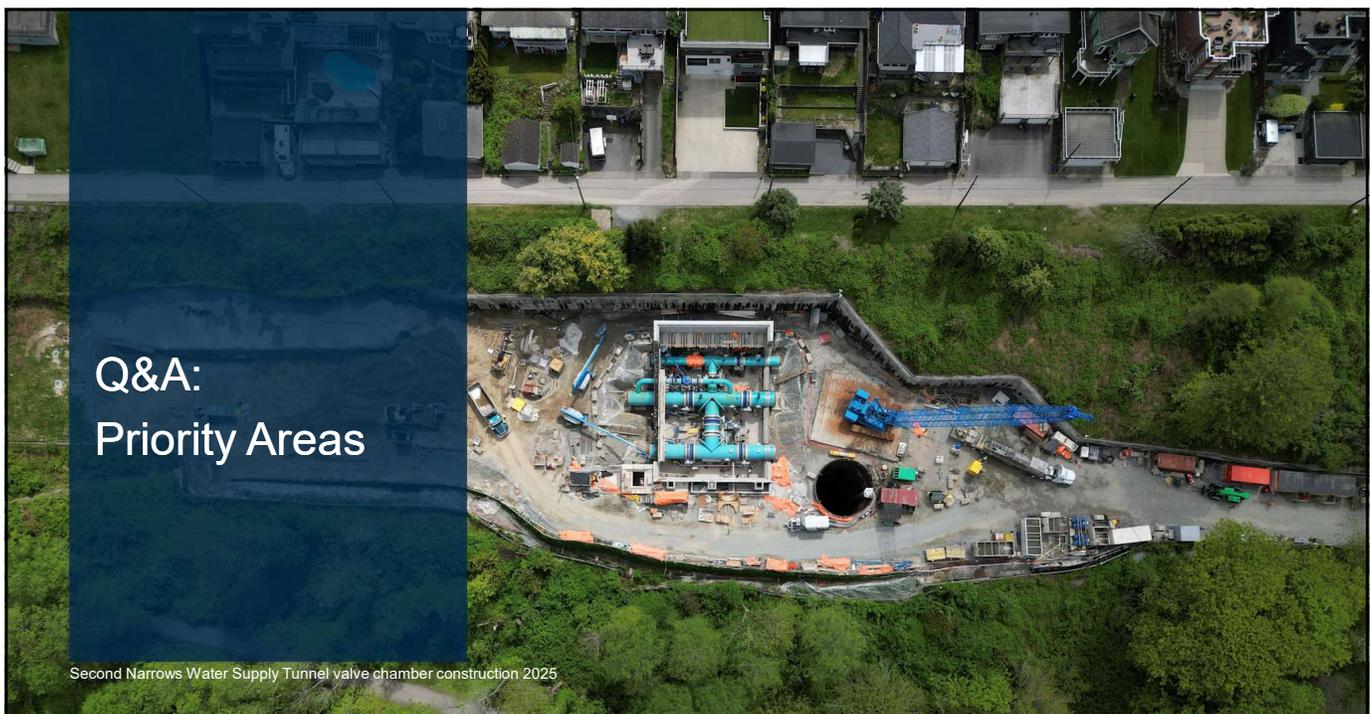
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# FROM STRATEGIES TO IMPLEMENTATION

## Coordinated delivery through collaboration

- Each priority area includes measurable outcomes and shared responsibilities
- Implementation will occur collaboratively across Metro Vancouver and member jurisdictions
- Progress will be reported to the Water Committee



# LOCAL LEADERSHIP IN ACTION

Member jurisdictions advancing water efficiency and resilience

- Local governments are leading on conservation, leak reduction, and metering
- Today’s speakers will share how practical, local action delivers results



Presenter:  
 John Irving,  
 Deputy CAO,  
 City of  
 Richmond

City of Richmond

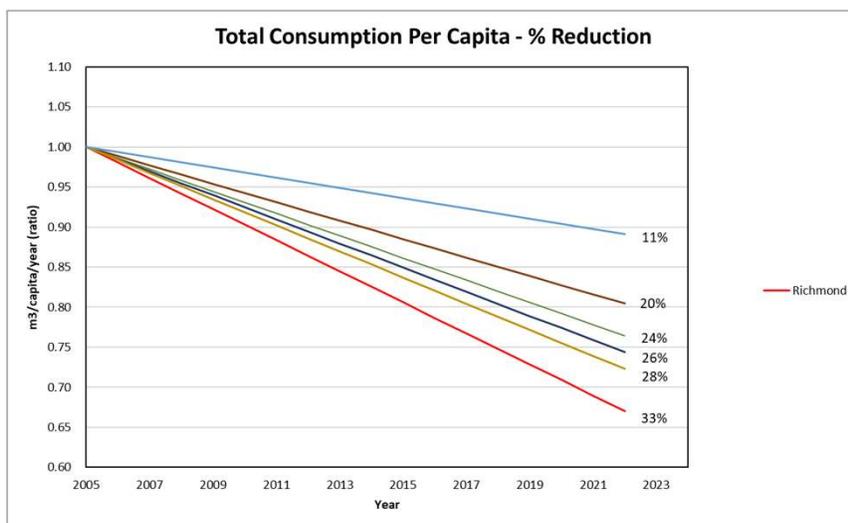
# City of Richmond Water Metering

Metro Vancouver Water Committee Workshop  
November 26, 2025  
John Irving, Deputy CAO



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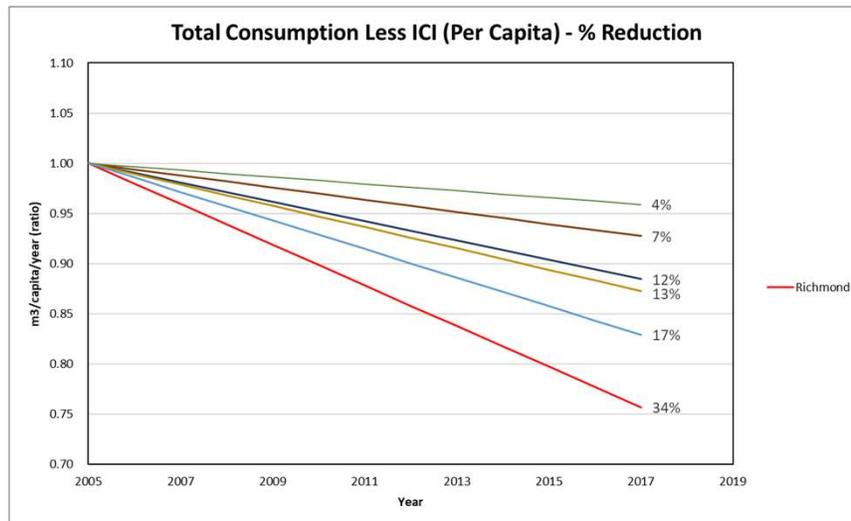
## Water Consumption Reduction



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# Water Consumption Reduction



# Capital and Operating Costs

## Since Start of Program (2004)

- Total capital cost – \$35M
- Total cost savings from private-side leak reduction – \$28M

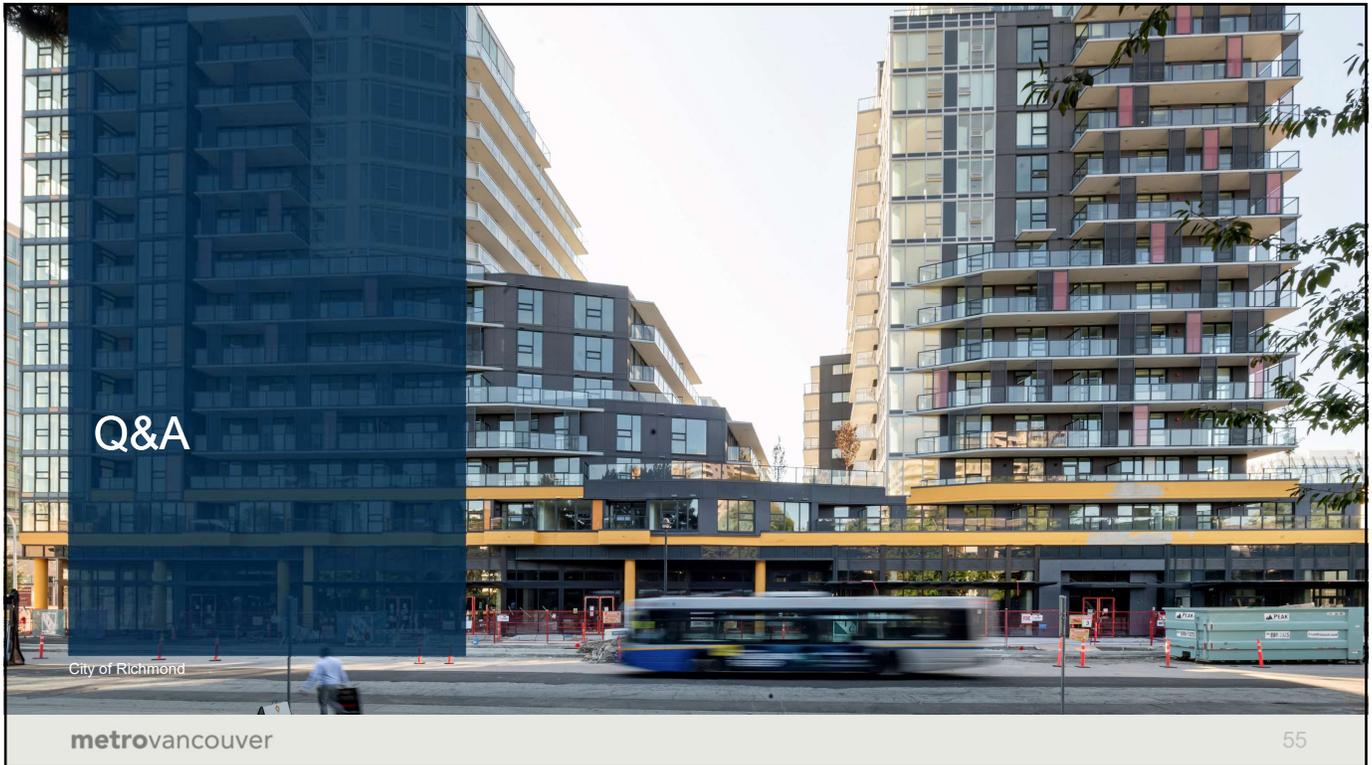
## Current Annual Finances

- Annual operating cost – \$3M
- Annual cost savings from private-side leak reduction – \$6.3M

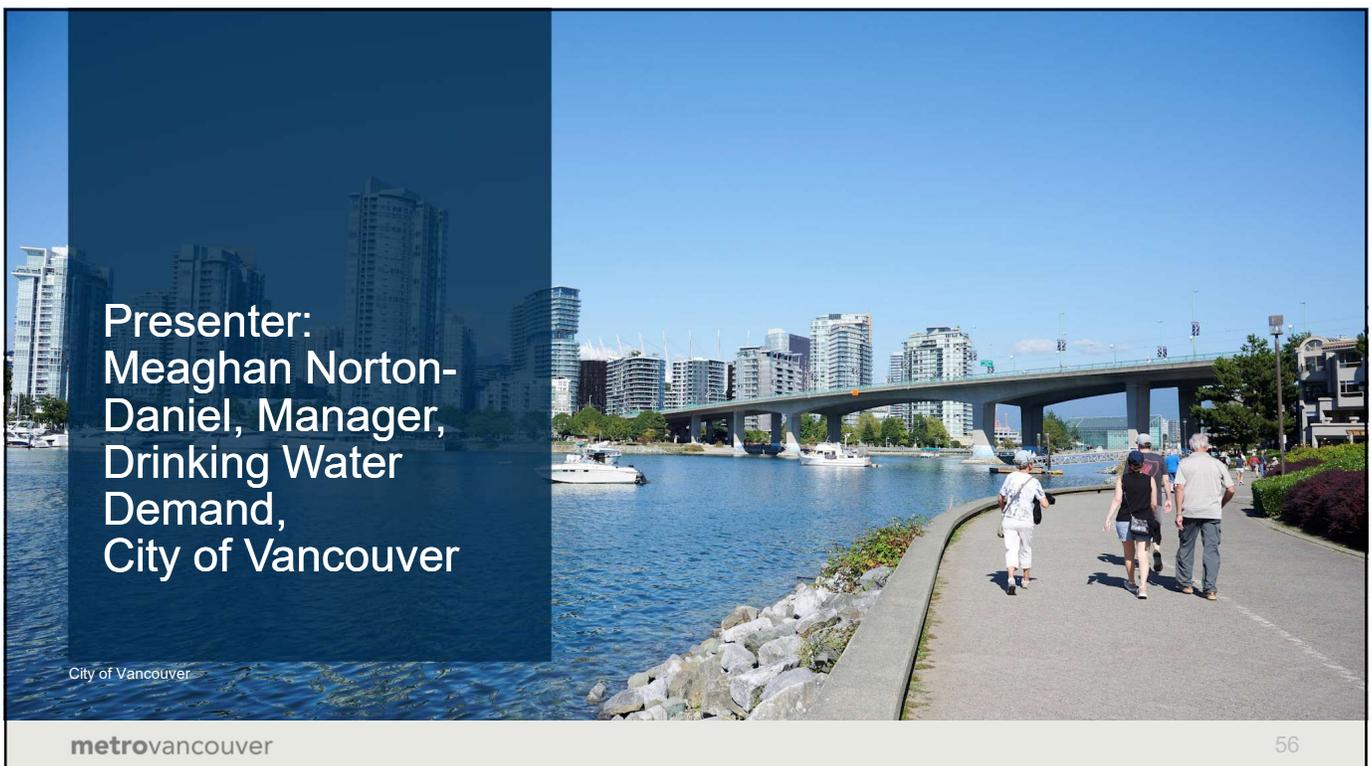
## Cost Savings Due to Water Use Reduction

- Current annual savings – \$17M
- Total cumulative savings – over \$150M





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# Vancouver's Metering Strategy to Minimize the Growing Cost of Leaks

Meaghan Norton Daniel  
Drinking Water Demand Management  
Engineering Services, City of Vancouver



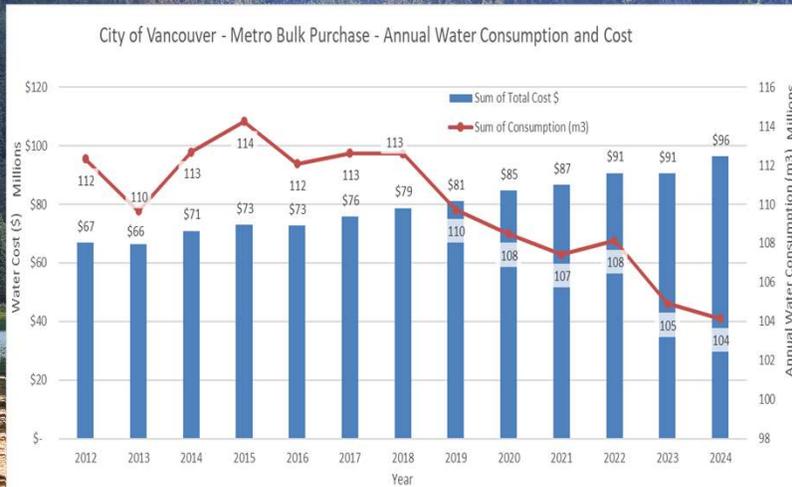
## Increasing Pressures on Vancouver's Water Utility

Climate Change

Population Growth

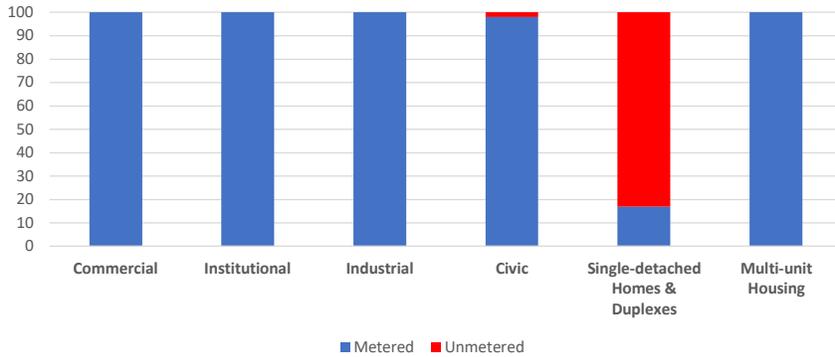
Water Rates

Densification



## Vancouver's Water Utility – Current State

**Percent Metered by Sector (2025)**



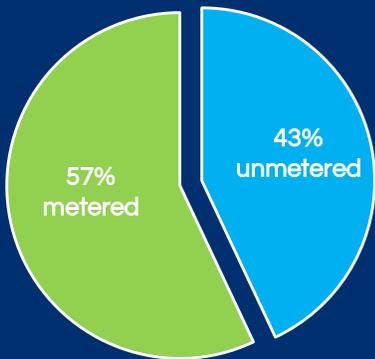
- \$96M bulk purchase (2024); \$110M projected (2025).
- Metered customers: base meter charge + volume rate.
- Flat-rate customers: set rate (bulk purchase – metered).
- Approx. 1,000 meters installed annually through re-development.

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## Water Demand Management Strategy

### Water Consumption



- Single-detached & duplex homes
- Distribution system leaks
- Unmetered private side leaks
- Other non-revenue water

### AMI Metered Utility



Leak detection & repair.\*



Equitable billing for use. Ability to reduce bills.



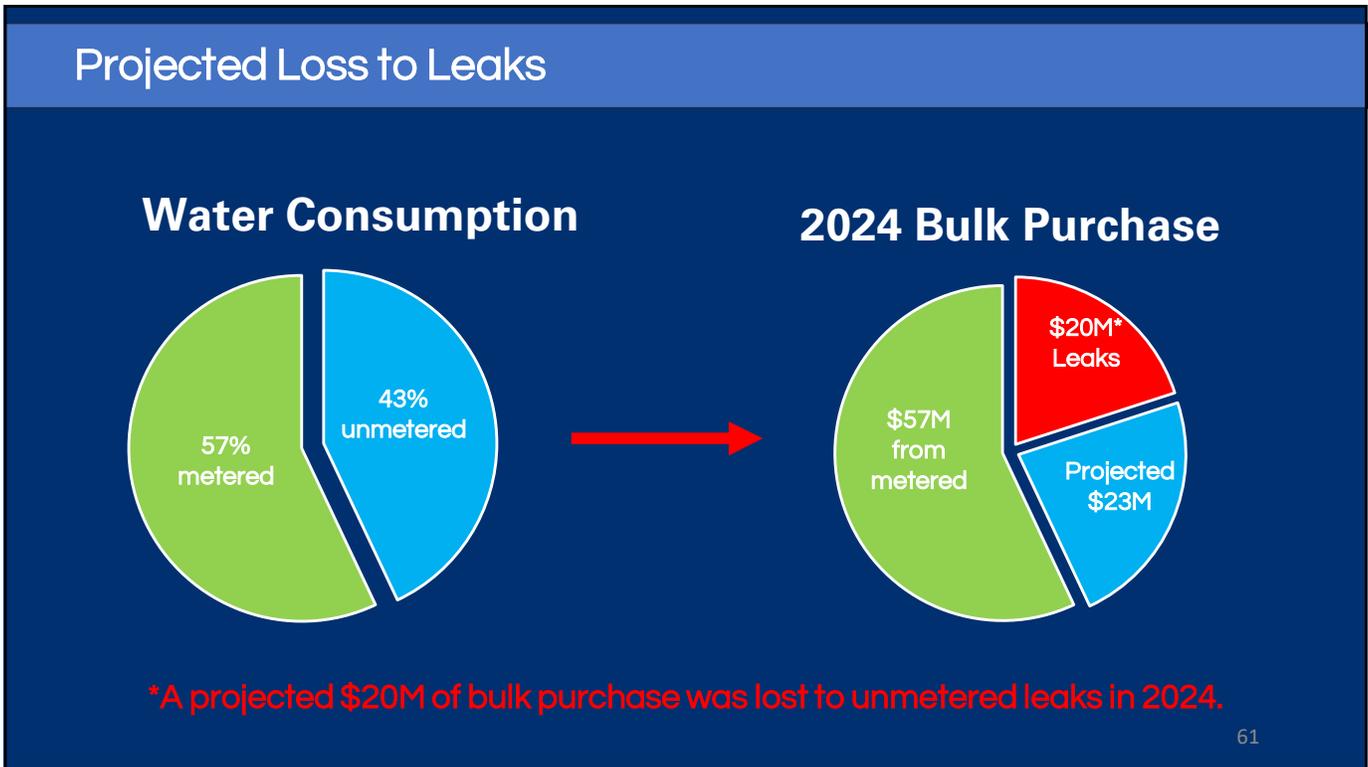
Metering older homes reduces demand by 25%.



Water saved offsets new housing demands.

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### Vancouver Council Approved: Invest in AMI Metering

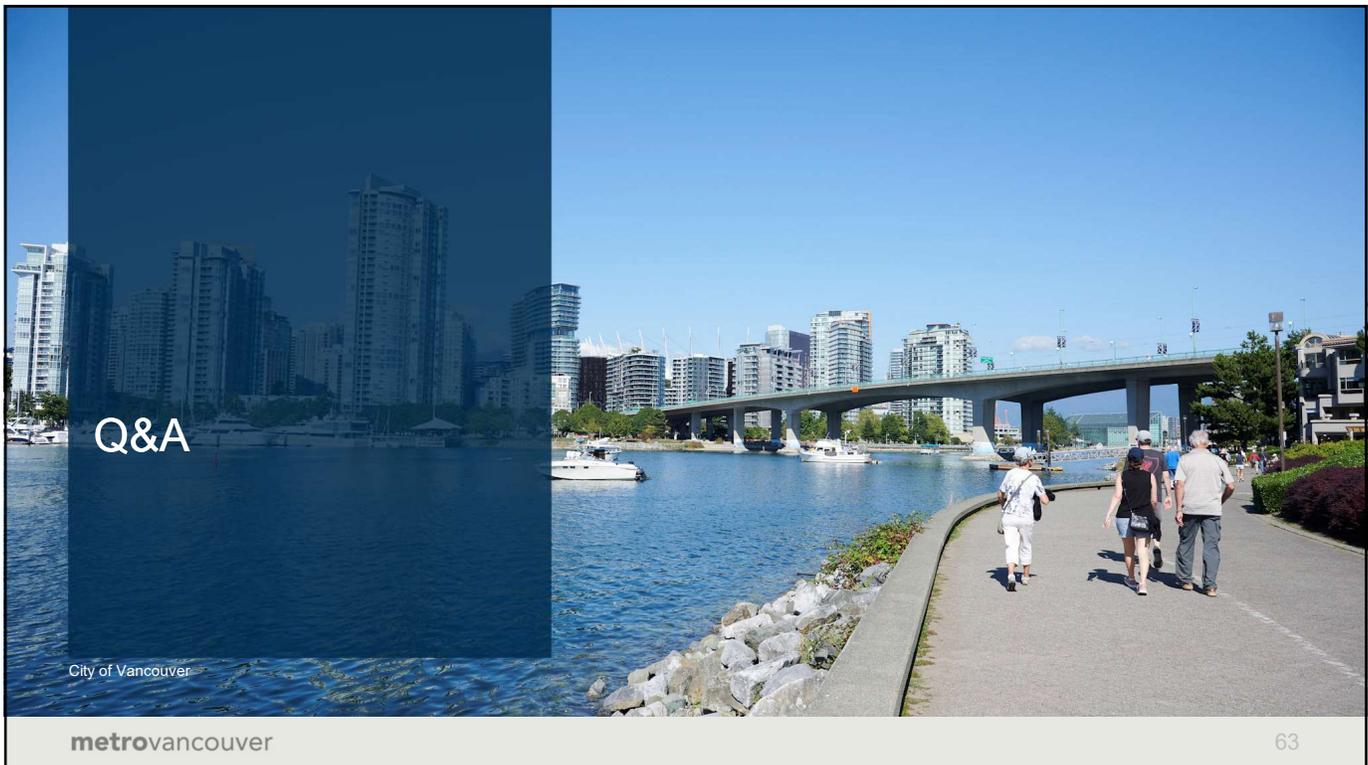
- ✓ Invest in utility assets not leaks.
- ✓ Reduce water use in older homes by 25%.
- ✓ Allow for data-driven decision making on policy and pricing.

- ✓ Address private-side leaks, improve distribution leak detection.
- ✓ Ensure equitable, user-pay rates.
- ✓ Reallocate water resources to support new housing developments.

	Capital Funding Approved/Required	Investment Area	
		AMI	Accelerated Metering
Capital Plan 2019-2022	\$8,000,000	\$4,000,000	\$4,000,000
Capital Plan 2023-2026	\$23,000,000	\$3,000,000	\$20,000,000
Capital Plan 2027-2030	<b>\$47,100,000</b>		<b>\$47,100,000</b>
Capital Funding 2031-2040	\$140,500,000		\$140,500,000
<b>Total to fund WDMS</b>	<b>\$218,600,000</b>	<b>\$7,000,000</b>	<b>\$211,600,000</b>

**10% leak reduction = 7,000 homes worth of water demand**

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## WHY THE DWMP FOCUSES ON REDUCING PER CAPITA WATER USE

Getting the most from the systems we already have

- Reducing per capita use is the most cost-effective way to service the growing population and secure our water future
- Metering supports early leak detection, fairer billing, and smarter planning
- Lower drinking water use also reduces flows to wastewater treatment plants

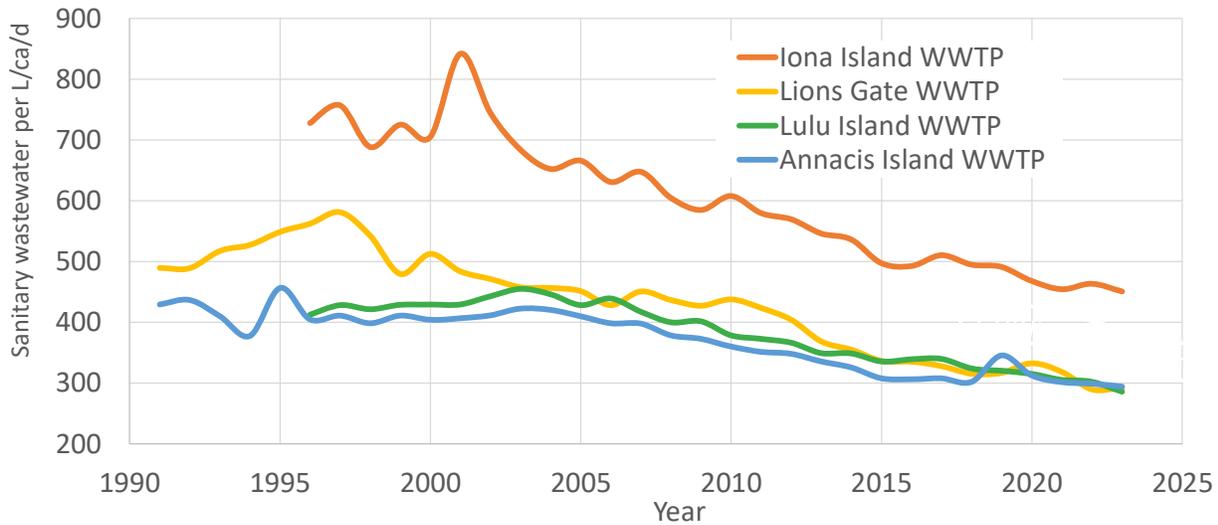
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# IMPACT OF METERING AND CONSERVATION ON WWTP

## Dry weather flows

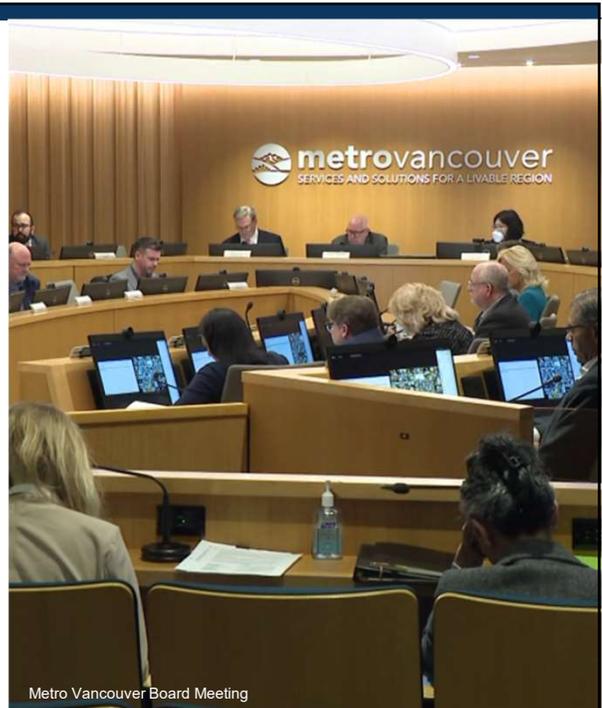


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## WORKING TOGETHER REGIONALLY

### A coordinated approach to demand reduction

- Regional collaboration maximizes impact and consistency
- Shared targets and data will support planning across jurisdictions
- Builds on public support: 84% of residents support metering for fairness



Metro Vancouver Board Meeting

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## COMMITTEE DISCUSSION

### Questions for input and reflection

- What feedback do you have for staff at this point?
- Are there any barriers to adoption in early 2026?

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# NEXT STEPS

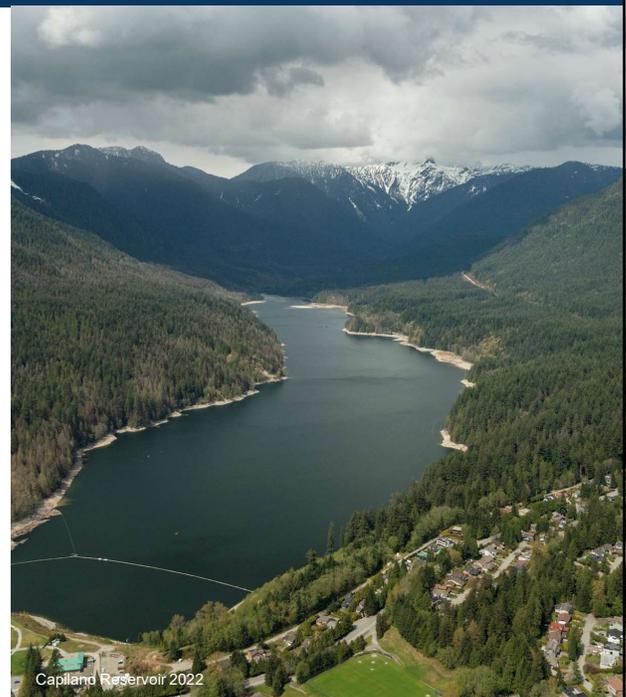
## Finalizing the Drinking Water Management Update

- Incorporate Committee feedback and finalize the Drinking Water Management Plan in Q1 2026
- Conduct final engagement with the public and First Nations
- Present through REAC WSC, REAC, RAAC, Water Committee and Board in Q1 and Q2 2026



# CLOSING REFLECTIONS

Our collective responsibility to steward, plan, and deliver reliable, high-quality drinking water for generations to come.



Capilano Reservoir 2022