

To: Water Committee

From: Kevin Brown, Division Manager, Watersheds and Environment, Water Services

Date: June 30, 2026

Meeting Date: July 15, 2026

Subject: **Wildfire Preparedness Update**

RECOMMENDATION

THAT the Water Committee receive for information the report dated June 30, 2026, titled, "Wildfire Preparedness Update".

EXECUTIVE SUMMARY

Water Services Wildfire Protection Program staff have expertise in wildfire management, specialized equipment, and are prepared for strategic deployment. The program maintains strong and proven partnerships with the BC Wildfire Service (BCWS) and local municipal fire departments to ensure wildfire season readiness.

Metro Vancouver provides a reliable supply of high-quality drinking water to three million residents through its member jurisdictions. Source water protection relies on safeguarding the forested lands of the Capilano, Seymour, and Coquitlam water supply areas from wildfires.

These areas have historically low wildfire incidence due to restricted public access and strict limitations on the type of work undertaken during fire season. With this approach, the primary wildfire risk remains lightning strikes during moderate to extreme fire risk levels. To ensure quick fire detection and response, staff utilize patrols, drones, weather reports, near real-time lightning maps, public and air traffic smoke reports, and rapid deployment of dedicated wildfire crews.

PURPOSE

To provide the Water Committee with an annual update on wildfire preparedness for the water supply areas in advance of the 2026 summer season.

BACKGROUND

As per the Water Committee's 2026 Work Plan, and those of previous years, wildfire preparedness reports are brought forward each spring. These reports provide an update on the current state of wildfire protection and readiness in advance of the summer wildfire season.

CONTEXT

The water supply areas encompass the mid and upper portions of the Capilano, Seymour, and Coquitlam watersheds and include approximately 60,000 hectares of forested lands. Access into these areas is controlled and limited through the GVWD Board *Watershed Access Policy*. The principle of protecting the water supply areas by restricting access is a fundamental component of the multiple barrier approach to drinking water quality protection.

The requirements for fire protection in the water supply areas date back to the 1927 and 1942 Provincial Crown land leases. These 999-year leases require Metro Vancouver to protect the lands from wildfire and retain qualified and trained staff for this purpose.

Currently, based on an Initial Attack model, three four-person fire crews are utilized, in conjunction with helicopters, for rapid deployment of wildfire resources to reported fires. In addition, Metro Vancouver maintains a long-standing resource sharing agreement with the BC Wildfire Service that ensures seamless communications with the Province and allows for additional resource requests, should they be needed.

In addition to providing wildfire response within the three water supply areas and the Lower Seymour Conservation Reserve, the Protection Program also leads the response and coordination for medium to larger wildfires in the Metro Vancouver Regional Parks system and will respond to wildfires in Electoral Area A if requested.

WILDFIRE PREPAREDNESS

Preparedness

For the 2026 season, the Protection Program has three dedicated Initial Attack fire crews supported by approximately 10 Watersheds and Environment staff trained to the same provincial standard as the dedicated Initial Attack crews, and approximately 25 additional staff trained to a basic fire response level. The Program also supports the training of Regional Parks staff for wildfire response readiness in Metro Vancouver Parks across the region.

To support a rapid recovery post wildfire, in 2025 staff retained a qualified professional consultant to review and provide updates to a post wildfire recovery plan. The review included relevant plans and policies, fire ecology, rehabilitation plans, and recovery best management practices. This recovery plan provides staff with the latest options and best management practices to mitigate the potential impacts of wildfire on the water quality in the reservoirs.

Equipment

The Watershed Protection Program has an extensive stockpile of wildfire suppression tools, including an array of pumps, hoses and water containment apparatus. These tools are primarily stored at the Bone Creek Works Yard on the North Shore, as well as strategically cached at tactical locations in the Capilano and Coquitlam Watersheds.

For mobile deployment, the Protection Program maintains three dedicated 4-wheel drive Initial Attack response trucks and two Response Officer vehicles. These vehicles are primarily staged in North Vancouver and are deployed across the region as the seasonal fire danger increases.

For inaccessible sites and rapid deployment, Metro Vancouver maintains a contract with a local helicopter company for dispatch throughout the fire season. Three 6,000 gallon "Heli-well" tanks (one per supply area) are strategically positioned to allow helicopters to bucket water reducing the risk of contamination, or aircraft incidents directly above the water supply area reservoirs.

The Program operates two drones equipped with infrared cameras to support crews in remote visual inspections after lightning storms or reports of smoke. Using drones supports quick confirmation of smoke locations, assists crews with the early assessment of a wildfire, and supports the development of tactical strategies (e.g. potential water sources, values at risk, etc.).

Resource Sharing Agreement

Metro Vancouver maintains a strong and collaborative relationship with the BC Wildfire Service through a resource sharing agreement. Metro Vancouver crews routinely backfill BC Wildfire Service crews throughout the Coastal Fire Centre under a cost recovery model and, as required, provincial crews are

available to provide additional support to the Metro Vancouver response efforts. This arrangement has been in place since 1997 and has been effective for regional fire response.

During the 2025 wildfire season, Watershed Protection staff were deployed for 33 days to support the province through the wildfire season. These deployments provide invaluable hands-on experience for Metro Vancouver crews ensuring skill levels remain high while supporting the provincial wildfire response.

For the 2026 season, staff participated in an annual meeting with key personnel from the BC Wildfire Service fire base in Hope and confirmed operational readiness of crews for the upcoming season.

Interagency Preparedness

Watershed Protection staff continue to lead the Watershed Wildfire Strategic Partners Working Group, started in 2021, that includes the fire chiefs from the District of North Vancouver, District of West Vancouver, and City of Coquitlam along with senior officers from the Province. This working group meets monthly to share local and regional wildfire initiatives; support planning, preparation, and cross training for wildfire responses; discuss specific tactical wildfire response objectives locally; and build strong relationships. This group also provides a venue to look for shared opportunities for wildfire fuel reduction initiatives, funding opportunities, or assessing new and emerging technologies. Annually, the working group hosts a tabletop exercise, led by the Province, to discuss operational responses in different areas of the region. The 2026 tabletop exercise is scheduled for July.

In May and June, staff participated in two field exercises. One full-scale multi-agency wildland urban interface exercise in a Kanaka Creek Regional Park, led by Metro Vancouver. This exercise allowed groups to confirm interagency operational capabilities, wildland firefighting abilities, structure protection, and evacuation preparedness. The second functional exercise, led by the District of North Vancouver Fire Department, was held in the Deep Cove area and involved Watershed Protection crews supporting a wildfire response.

To support and develop regional interagency relationships, staff also presented and participated in the fourth annual Metro Vancouver Regional Wildfire Workshop in May. This workshop is organized by Metro Vancouver's Protective Services and Emergency Management team with attendance by over 100 emergency managers and professionals from all member jurisdictions and local First Nations.

Watershed Protection staff continue to work closely with various municipal partners, including the North Shore Interface Wildfire Working Group and the Metro Vancouver Wildfire Conditions Task Group, to ensure preparedness and coordinated response across the region.

Fire Weather Monitoring

Staff carry out extensive fire weather monitoring and produce a bi-weekly Fire Weather Report that utilizes data from eight weather stations located throughout the water supply areas and the region. Municipal fire and parks staff, and the emergency planning community rely on this information to determine the fire danger rating for their jurisdiction and appropriate public activity restrictions.

Wildfire Fuels Management

Wildfire fuels management is defined as a planned approach to reduce the amount of living and dead vegetation that can act as fuel for wildfires. By decreasing fuel load, wildfire spread can be greatly reduced allowing time for crews to respond and contain fires. To support the protection of critical Water Services infrastructure, a wildfire fuels management prescription has been developed for the 69kV

substation and the British Properties urban interface area inside the Capilano Water Supply Area with full prescription treatments beginning in the fall of 2026.

Watershed Protection staff have participated in the North Shore and Coquitlam Community FireSmart and Resiliency Committees and will continue to work with partners for future fuel reduction opportunities in the interface areas and around critical infrastructure.

New and Emerging Technologies

Staff are also working with the District of West Vancouver, District of North Vancouver, the City of Coquitlam Fire Departments, and Regional Parks in assessing emerging wildfire detection technology (e.g., cameras) that could be strategically deployed and tested. For 2026, Watershed Protection has partnered with Regional Parks and the District of North Vancouver to trial two cameras employing AI technology to aid in the detection of potential fires and the dispatch of operational crews.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

The Protection Program initiatives are funded through the annual operating budget of the Watersheds and Environment Division. The fuels management project is funded through the Minor Capital Program for 2026. Costs associated with crew deployment to support the province are compensated under an existing Resource Sharing Agreement.

OTHER IMPLICATIONS

There are no implications for member jurisdictions, First Nations, Policy, or reputation/relationships with this report.

CONCLUSION

The 2026 Protection Program has trained staff ready to respond to regional wildfires, confirmed interagency readiness, new technology, and fuels management initiatives. With a focus on prevention, preparedness, and rapid response, the program leverages long-standing agency partnerships and continues to explore new technologies and strategies to ensure source water protection.

ATTACHMENT

1. Presentation re: Wildfire Preparedness Update.



Sea-to-Sky Wildfire, 2023

Annual Wildfire Preparedness Update

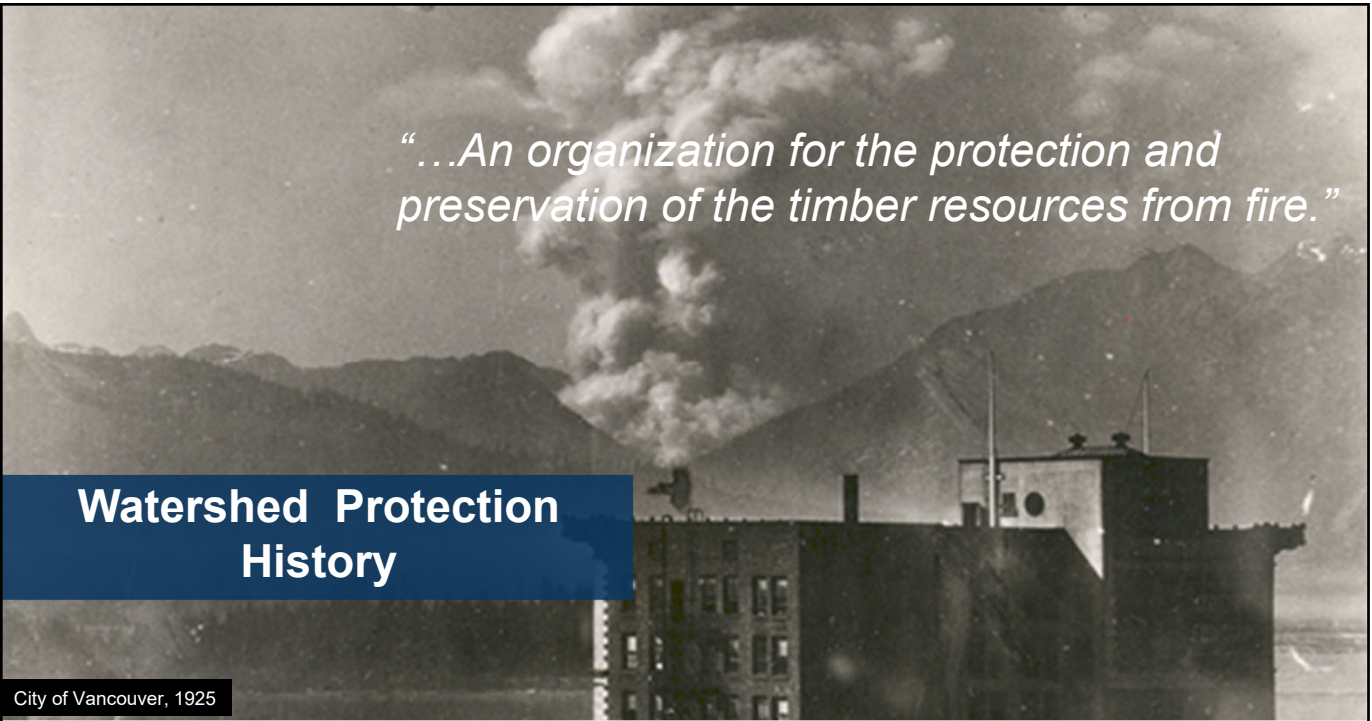
2026

Kevin Brown
Division Manager, Watershed Operations & Protection
Metro Vancouver

Water Committee, July 15, 2026

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“...An organization for the protection and preservation of the timber resources from fire.”

Watershed Protection History

City of Vancouver, 1925

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METRO VANCOUVER 2025 LOCAL WILDFIRE RESPONSE

- Crews on standby 151 days
- No fires in the water supply areas or LSCR
- 33 days deployed with the BC Wildfire Service

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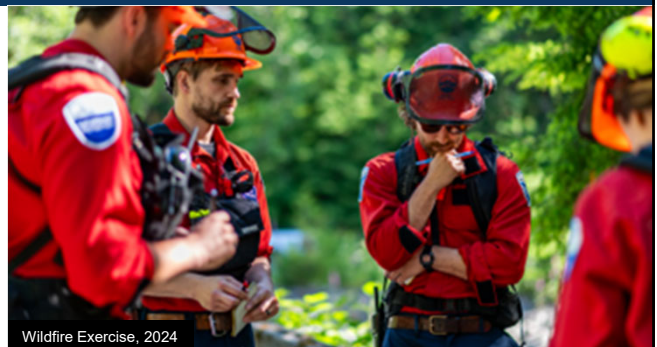
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METRO VANCOUVER WATERSHED PROTECTION

Wildfire response and support

- 3 initial attack crews
- Response officers
- On-call 24/7



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RESOURCE SHARING AGREEMENT AND INTERAGENCY READINESS



Sea to Sky wildfire, West Vancouver, 2023



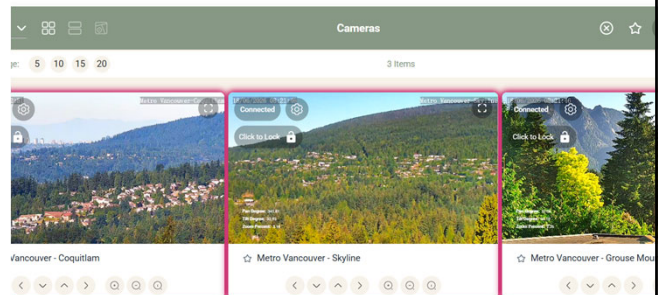
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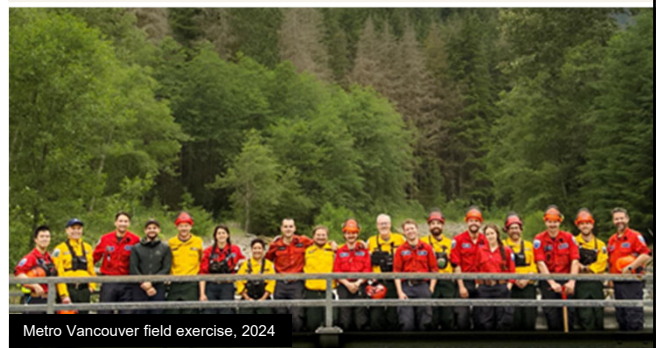
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METRO VANCOUVER WILDFIRE READINESS

- Crews and equipment
- Fire condition monitoring
- Response readiness



Wildfire Cameras



Metro Vancouver field exercise, 2024

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METRO VANCOUVER WILDFIRE FUEL TREATMENT PROJECT

- Wildfire fuel reduction in Capilano Water Supply Area
- Protect critical infrastructure
- Shared wildfire risk reduction



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2026 WILDFIRE CONDITIONS OUTLOOK

- Low snowpack
- Fire conditions depend on May/June rains
- Forecast calls for a warmer/drier summer season



Capilano Reservoir snow pack April 17, 2024

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To: Water Committee

From: Marilyn Towill, General Manager, Water Services

Date: June 29, 2026

Meeting Date: July 15, 2026

Subject: **DRAFT Five Year Capital Plan (2027 – 2031) Greater Vancouver Water District**

RECOMMENDATION

THAT the Water Committee receive for information the report dated June 29, 2026, titled “DRAFT Five Year Capital Plan (2027 – 2031) Greater Vancouver Water District”.

EXECUTIVE SUMMARY

The DRAFT Five Year Capital Plan for the Greater Vancouver Water District (GVWD) has been prepared following direction received at the April 15, 2026, Board Budget Workshop to prepare the Financial Plan and proceed through the 2027 budget cycle with household impact (HHI) targets as follows: 2027 at 3.0 per cent and 2028 to 2031 at 5.0 per cent.

The GVWD estimates capital spending of \$3.4 billion over the next five years funded by a combination of long-term debt, reserves, contributions from the operating budget, some external contributions from other agencies, as well as Development Cost Charges (DCCs) specifically funding growth projects. The net change from the previous five-year plan is an overall increase of \$357.7 million.

PURPOSE

To present to the Water Committee the DRAFT Water 2027 – 2031 Capital Plan for input and feedback, which will then be incorporated into the Fall Budget approval process.

BACKGROUND

On April 15, 2026, Metro Vancouver held a Board Budget Workshop seeking direction for the preparation of the 2027 – 2031 Financial Plan. This report provides the Water Committee with the information needed to provide comments on the DRAFT 2027 – 2031 Capital Plan which will then be incorporated into the 2027 – 2031 Financial Plan scheduled to be presented in October.

Water Customer Level of Service Objectives

Projects within the DRAFT 2027 – 2031 Capital Plan are guided by the Water Customer Level of Service Objectives, specifically:

- Maintain quality of the drinking water delivered;
- Maintain capacity and reliability of the Water Supply System;
- Improve environmental stewardship; and
- Minimize timeline to recover from a major event (including seismic, power interruption and climate change).

On an ongoing basis, staff monitor and evaluate the performance of the water supply system and its ability to achieve the service objectives. The projects in the Capital Plan include the infrastructure changes required to achieve the Customer Level of Service objectives on an ongoing basis while considering risk, affordability, and supply system constraints.

DRAFT Five Year Capital Plan (2027 – 2031) Greater Vancouver Water District

Water Committee Regular Meeting Date: July 15, 2026

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CAPITAL PLAN HIGHLIGHTS

The DRAFT Water 2027 – 2031 Capital Plan includes planned capital expenditures of \$486.1 million for 2027 and a total of \$3.4 billion over the five years, with an average expenditure of \$686.2 million per year (see **Attachment 1**). It should be noted that out of 188 projects on the 5-year plan, the largest eight projects make up 50 per cent of the capital spending.

The spending over the next five years is driven by infrastructure changes required as a result of:

- An increase in the number of residents moving into the region, creating an increased demand for drinking water, particularly South of the Fraser River (Growth);
- Need for replacement or refurbishment of existing infrastructure to ensure that the system continues to perform as required to meet Customer Level of Service objectives (Maintenance);
- Ensuring that infrastructure is resilient to major emergency events, including power outages, seismic events, and the impacts of climate change (Resilience); and
- Opportunities to reduce the life-cycle cost of services and/or achieve Board goals such as financial sustainability and the provision of enhanced service levels (Opportunity and Upgrade).

Table 1 below outlines the key capital projects planned or ongoing in 2027 – 2031 for Water Services.

Table 1. Key Water Services Capital Projects in 2027 (\$ Millions)

Asset Type	Project Name	Infrastructure Driver	2027 Capital Expenditures
Water Mains	Coquitlam Water Main	Growth	\$78.0M
Water Mains	Stanley Park Water Supply Tunnel	Maintenance	\$70.6
Treatment Plants	Coquitlam Lake Water Supply	Growth	\$55.1
Water Mains	Annacis Water Supply Tunnel	Growth	\$45.0
Water Mains	Annacis Main No. 5 (North)	Growth	\$30.0
Water Mains	Annacis Main No. 5 (South)	Growth	\$23.2
Pump Stations	Newton Pump Station No. 2	Growth	\$22.0
Water Mains	Central Park Main No. 2 (Patterson to 10th Ave)	Maintenance	\$18.6
Other Projects			\$143.6
Total 2027			\$486.1

The Capital Program for the GVWD is currently funded by a combination of long-term debt, reserves, contributions from the operating budget, some external contributions from other agencies, as well as DCCs specifically funding growth projects.

Capital Plan Changes

Metro Vancouver's annual capital planning process allows the Board to adjust the capital budget once a year, in the fall, to accommodate changes required to fund projects in response to new or changing project needs, emerging issues, and changing priorities. The completion of multi-year projects is complex and subject to change due to a variety of factors including delays in construction timing caused by global events, escalation in construction costs, changes in scope, and permitting processes.

The DRAFT 2027 – 2031 Capital Plan was increased from the prior cycle capital plan by \$357.7 million. The capital plan is the result of a detailed review of all projects following direction coming from the Board Budget Workshop on April 15, 2026.

DRAFT Five Year Capital Plan (2027 – 2031) Greater Vancouver Water District

Water Committee Regular Meeting Date: July 15, 2026

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Capital Plan Review Process

Water Services and Project Delivery staff carefully reviewed the project schedules to accommodate any carry forwards and cost adjustments by deferring project phases where possible. Throughout the capital planning process, staff review each project to ensure efficient project timing, deliverability, and scope.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

The Draft Water 2027 – 2031 Capital Plan estimates capital expenditures of \$3.4 billion over the next five years are funded by a combination of long-term debt, reserves, contributions from the operating budget, and some external contributions from other agencies, as well as Development Cost Charges (DCCs) specifically funding growth projects.

The \$3.4 billion estimated capital expenditure over five years is allocated to the following asset classes:

- Water Mains: \$2,160.6M
- Pump Stations: \$396.0M
- Reservoirs: \$146.0M
- Treatment Plants: \$404.7M
- Dams: \$105.3M
- Rechlorination Station: \$46.8M
- Water Supply Areas: \$4.5M
- Works Yard: \$120.0M
- Communication Systems: \$47.2M

The average estimated capital expenditures are approximately \$686.2M per year and the net change from the previous five-year plan is an increase of \$357.7M. This increase is a result of the 2031 expenditures being added into the 5-year window and the current year (2026) falling off, as well as adjustments to the schedules and estimates of projects as more up to date information is available.

Table 2. DRAFT Five Year Capital Plan (2027 – 2031) – Water Services.

	2027	2028	2029	2030	2031	DRAFT 5 YEAR CAPITAL PLAN (2027-2031)
Total Capital Expenditures (\$M)	\$486.1	\$544.3	\$672.7	\$882.5	\$845.5	\$3,431.1

This report provides an opportunity for Water Committee to provide feedback, which will then be incorporated into the 2027 Annual Operating Budget and Five-Year Financial Plan presentations to the Committees and the GVWD Board at the fall Board Budget Workshop.

OTHER IMPLICATIONS

The DRAFT Water 2027 – 2031 Capital Plan contains the water infrastructure projects needed to keep our regional transmission system in a state of good repair, serve the needs of the growing population, and be resilient to shocks and stresses.

DRAFT Five Year Capital Plan (2027 – 2031) Greater Vancouver Water District

Water Committee Regular Meeting Date: July 15, 2026

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CONCLUSION

The DRAFT Water 2027 – 2031 Capital Plan is the consolidated list of infrastructure projects required to meet and maintain the regional Water Customer Level of Service Objectives and includes the financial impacts of these projects over the next five years.

The presentation on the DRAFT Water 2027 – 2031 Capital Plan provides the opportunity for the Water Committee to provide feedback, which will be incorporated into the Water Capital Plan and included in the October budget presentations to the Water Committee and the GVWD Board.

ATTACHMENTS

1. Greater Vancouver Water District – Draft Five Year Capital Plan (2027-2031).
2. Presentation re: Greater Vancouver Water District 2027 – 2031 Capital Plan.

GREATER VANCOUVER WATER DISTRICT
CAPITAL PORTFOLIO
WATER SERVICES
DRAFT FIVE YEAR CAPITAL PLAN (2027 — 2031)

	DRAFT CAPITAL BUDGET**	2027 CAPITAL EXPENDITURES	2028 CAPITAL EXPENDITURES	2029 CAPITAL EXPENDITURES	2030 CAPITAL EXPENDITURES	2031 CAPITAL EXPENDITURES	2027 TO 2031 TOTAL CAPITAL EXPENDITURES	ACTIVE PHASE	PRIMARY DRIVER
CAPITAL EXPENDITURES									
Water Mains									
37th Avenue Main No. 2 (Rupert Street to Little Mountain Reservoir)	1,150,000	500,000	1,050,000	2,000,000	3,000,000	22,000,000	28,550,000	Design	Maintenance
Angus Drive Main	30,700,000	50,000	350,000	—	—	—	400,000	Construction	Growth
Angus Drive Turbine	—	—	50,000	1,550,000	1,000,000	—	2,600,000	Not Started	Opportunity
Annacis Main No. 2 (River Crossing Removal)	—	—	—	400,000	4,000,000	5,000,000	9,400,000	Not Started	Maintenance
Annacis Main No. 2 and Barnston Island Main Online Chlorine and pH Analyzers	1,500,000	50,000	200,000	—	—	—	250,000	Construction	Upgrade
Annacis Main No. 5 (North)	115,100,000	30,000,000	34,000,000	9,000,000	17,900,000	—	90,900,000	Construction	Growth
Annacis Main No. 5 (South)	103,550,000	23,150,000	7,750,000	1,400,000	19,350,000	—	51,650,000	Construction	Growth
Annacis Water Supply Tunnel*	482,200,000	45,000,000	20,000,000	12,070,141	7,998,141	—	85,068,282	Construction	Growth
BC Ferries Fleet Maintenance Unit Re-Development - Dike Construction - Lulu Island Delta Main Protection	3,000,000	1,500,000	—	—	—	—	1,500,000	Construction	Maintenance
Burnaby Mountain Main No. 2	2,300,000	200,001	699,999	2,500,000	5,500,000	6,500,000	15,400,000	Design	Maintenance
Cambie-Richmond Main (Oak Street) Aerial Crossing Rehabilitation	2,000,000	250,000	1,000,000	750,000	—	—	2,000,000	Construction	Maintenance
Cambie-Richmond Water Supply Tunnel*	82,850,000	7,000,000	7,000,000	17,376,927	10,000,000	60,000,000	101,376,927	Design	Resilience
Central Park Main No. 2 (10th Ave to Westburnco)	35,250,000	7,100,000	10,050,000	5,000,000	6,550,000	—	28,700,000	Construction	Maintenance
Central Park Main No. 2 (Patterson to 10th Ave)	140,850,000	18,600,000	17,350,000	8,550,000	—	—	44,500,000	Construction	Maintenance
Clayton Langley Main No. 2	11,700,000	500,001	2,199,999	5,300,000	3,000,000	—	11,000,000	Construction	Resilience
Coquitlam Water Main*	1,637,950,000	78,000,000	99,000,000	134,000,000	194,800,000	190,000,000	695,800,000	Multiple	Growth
Decommissioned and Abandoned Pipe projects	—	—	—	—	—	3,000,000	3,000,000	Not Started	Maintenance
Douglas Road Main No. 2 (Flow Meter 169) Replacement	2,000,000	50,000	—	—	—	—	50,000	Construction	Maintenance
Douglas Road Main No. 2 (Vancouver Heights Section)	22,950,000	800,000	950,000	—	—	—	1,750,000	Construction	Maintenance
Douglas Road Main No. 2 Still Creek	58,550,000	100,000	750,000	—	—	—	850,000	Construction	Maintenance
Douglas Road Main Protection	1,150,000	200,000	50,000	50,000	50,000	50,000	400,000	Construction	Maintenance
Emergency Reservoir and Valve refurbishments	10,000,000	1,000,000	5,000,000	8,800,000	5,000,000	5,000,000	24,800,000	Construction	Upgrade
Fortis Tilbury LNG Project Phase 2	200,000	50,000	50,000	50,000	—	—	150,000	Construction	Maintenance
Improvements to Capilano Mains No. 4 and 5	2,700,000	50,000	1,750,000	700,000	—	—	2,500,000	Construction	Maintenance
Kennedy Newton Main	181,650,000	2,850,000	3,000,000	2,000,000	—	—	7,850,000	Construction	Growth
Lulu Island - Delta Main - Scour Protection Phase 2	200,000	150,000	500,000	2,800,000	—	—	3,450,000	Design	Maintenance
Lulu-Delta Water Supply Tunnel*	56,000,000	3,500,000	5,500,000	10,379,000	34,000,000	—	53,379,000	Design	Maintenance

GREATER VANCOUVER WATER DISTRICT
CAPITAL PORTFOLIO
WATER SERVICES
DRAFT FIVE YEAR CAPITAL PLAN (2027 — 2031)

	DRAFT CAPITAL BUDGET**	2027 CAPITAL EXPENDITURES	2028 CAPITAL EXPENDITURES	2029 CAPITAL EXPENDITURES	2030 CAPITAL EXPENDITURES	2031 CAPITAL EXPENDITURES	2027 TO 2031 TOTAL CAPITAL EXPENDITURES	ACTIVE PHASE	PRIMARY DRIVER
Lynn Valley Aerial Crossing 20" BFV Replacement	2,400,000	2,300,000	—	—	—	—	2,300,000	Construction	Maintenance
Lynn Valley Road Main No. 2	650,000	50,000	550,000	1,000,000	800,000	6,000,000	8,400,000	Design	Maintenance
Lynn Valley Road Main, Seymour Main No. 3 & Seymour Main No. 4 Aerial Crossings Rehabilitation	8,400,000	2,810,000	500,000	—	—	—	3,310,000	Construction	Maintenance
Maple Ridge Main West Lining Repairs	5,400,000	50,000	1,000,000	2,500,000	1,450,000	—	5,000,000	Construction	Maintenance
Newton Reservoir Connection	6,250,000	1,100,000	1,550,000	4,200,000	8,000,000	9,000,000	23,850,000	Design	Growth
Pitt River (Haney) Water Supply Tunnel*	45,800,000	15,604,064	6,604,064	6,604,064	—	—	28,812,192	Design	Resilience
Port Coquitlam Water Main (Formerly Haney Main No. 4 (West Section))	10,050,000	1,500,000	3,050,000	21,900,000	39,450,000	51,050,000	116,950,000	Multiple	Growth
Port Mann Main No. 2 (South)	38,950,000	50,000	1,150,000	7,000,000	11,250,000	14,000,000	33,450,000	Multiple	Growth
Port Mann No. 1 South Section Decommissioning	2,350,000	150,000	800,000	500,000	450,000	250,000	2,150,000	Construction	Maintenance
Port Moody Main No. 1 Christmas Way Relocation	2,300,000	100,000	100,000	150,000	50,000	50,000	450,000	Construction	Maintenance
Port Moody Main No. 3 Scott Creek Section	63,500,000	5,300,000	10,150,000	15,150,000	10,100,000	4,900,000	45,600,000	Construction	Maintenance
Queensborough Main Royal Avenue Relocation	1,400,000	100,000	100,000	100,000	100,000	100,000	500,000	Construction	Maintenance
Relocation and Protection for MOTI Expansion Project Broadway	1,150,000	100,000	100,000	100,000	100,000	550,000	950,000	Construction	Maintenance
Relocation and Protection for MOTI George Massey Crossing Replacement	8,350,000	100,000	100,000	100,000	100,000	100,000	500,000	Construction	Maintenance
Relocation and Protection for Translink Expansion Project Surrey Langley SkyTrain	6,550,000	100,000	100,000	100,000	100,000	100,000	500,000	Construction	Maintenance
Sapperton Main No. 1 New Line Valve and Chamber	4,350,000	100,000	150,000	—	—	—	250,000	Construction	Upgrade
Sapperton Main No. 2 North Road Relocation and Protection	750,000	100,000	100,000	100,000	100,000	—	400,000	Construction	Maintenance
Scour Protection Assessments and Construction General	3,900,000	100,000	500,000	600,000	500,000	—	1,700,000	Design	Resilience
Second Narrows Crossing 1 & 2 (Burrard Inlet Crossing Removal)*	2,000,000	400,000	1,099,978	3,000,000	12,000,000	10,000,000	26,499,978	Design	Maintenance
Second Narrows Water Supply Tunnel*	468,550,000	15,000,000	10,000,000	8,129,859	2,354,554	—	35,484,413	Construction	Resilience
Seymour Main No. 2 Joint Improvements	7,100,000	1,250,000	1,000,000	2,000,000	1,500,000	1,500,000	7,250,000	Construction	Resilience
Seymour Valley Water Main (formerly Seymour Main No. 5 III (North))	21,100,000	2,720,000	6,330,000	29,670,000	32,900,000	37,250,000	108,870,000	Construction	Resilience
South Delta Main No. 1 - Ferry Road Check Valve Replacement	2,600,000	500,000	600,000	—	—	—	1,100,000	Construction	Maintenance
South Delta Main No. 1 Replacement Project	2,300,000	100,000	400,000	1,000,000	1,800,000	2,000,000	5,300,000	Design	Maintenance
South Delta Main No. 3 - 12th Ave to Pebble Hill	450,000	—	—	—	300,000	200,000	500,000	Not Started	Resilience
South Delta Mains - 28 Ave Crossover	12,350,000	550,000	—	—	—	—	550,000	Construction	Upgrade

GREATER VANCOUVER WATER DISTRICT
CAPITAL PORTFOLIO
WATER SERVICES
DRAFT FIVE YEAR CAPITAL PLAN (2027 — 2031)

	DRAFT CAPITAL BUDGET**	2027 CAPITAL EXPENDITURES	2028 CAPITAL EXPENDITURES	2029 CAPITAL EXPENDITURES	2030 CAPITAL EXPENDITURES	2031 CAPITAL EXPENDITURES	2027 TO 2031 TOTAL CAPITAL EXPENDITURES	ACTIVE PHASE	PRIMARY DRIVER
South Surrey Main No. 1 Nickomekl Dam Relocation	7,100,000	100,000	250,000	2,000,000	3,450,000	—	5,800,000	Construction	Maintenance
South Surrey Main No. 2	30,600,000	1,850,000	6,700,000	29,250,000	44,500,000	36,400,000	118,700,000	Construction	Growth
South Surrey Main No. 2 Nickomekl Dam Prebuild	2,000,000	50,000	500,000	1,350,000	—	—	1,900,000	Construction	Growth
Stanley Park Water Supply Tunnel*	495,000,000	70,556,500	70,000,000	42,000,000	82,945,560	20,242,266	285,744,326	Construction	Maintenance
Tilbury Junction Chamber Valves Replacement with Actuators	7,600,000	50,000	1,650,000	1,000,000	—	—	2,700,000	Construction	Upgrade
Tilbury Main North Fraser Way Valve Addition	3,100,000	100,000	1,400,000	1,050,000	—	—	2,550,000	Construction	Maintenance
Vancouver Heights System Resiliency Improvements	2,650,000	50,000	—	—	—	—	50,000	Construction	Resilience
Water Chamber Improvements and Repairs	1,850,000	300,000	300,000	300,000	—	—	900,000	Construction	Maintenance
Water Meter Upgrades	22,400,000	1,500,000	1,300,000	3,350,000	3,000,000	3,000,000	12,150,000	Construction	Upgrade
Whalley Kennedy Main No. 2	2,900,000	50,000	50,000	50,000	1,400,000	250,000	1,800,000	Design	Growth
Whalley Main	31,800,000	50,000	400,000	—	—	—	450,000	Construction	Growth
Total Water Mains	\$4,321,450,000	\$ 345,540,566	\$ 346,834,040	\$ 408,929,991	\$ 570,848,255	\$ 488,492,266	\$ 2,160,645,118		
Pump Stations									
Barnston/Maple Ridge Pump Station - Back-up Power	\$ 16,900,000	\$ 300,000	\$ 5,200,000	\$ 5,300,000	\$ 12,200,000	\$ 21,500,000	\$ 44,500,000	Construction	Resilience
Barnston/Maple Ridge Pump Station Power Generation	2,900,000	—	200,000	1,000,000	1,300,000	—	2,500,000	Not Started	Opportunity
Burnaby Mountain Pump Station Improvement	6,000,000	500,000	2,000,000	2,000,000	1,300,000	—	5,800,000	Construction	Upgrade
Burnaby Mountain Pump Station No. 2	13,100,000	2,200,000	3,200,000	26,800,000	26,700,000	26,600,000	85,500,000	Design	Maintenance
Cape Horn Pump Station No. 2 Power Distribution and DC Drive Replacement	400,000	250,000	850,000	4,300,000	6,700,000	—	12,100,000	Design	Maintenance
Cape Horn Pump Station No. 3	37,650,000	2,300,000	5,500,000	9,350,000	32,000,000	41,500,000	90,650,000	Design	Growth
Capilano Raw Water Pump Station - Back-up Power	81,000,000	500,000	5,450,000	—	—	—	5,950,000	Construction	Resilience
Capilano Raw Water Pump Station and Capilano Facilities	400,000	200,000	400,000	400,000	400,000	400,000	1,800,000	Design	Maintenance
Capilano Raw Water Pump Station Bypass PRV Upgrades	5,450,000	1,000,000	1,000,000	2,000,000	—	—	4,000,000	Construction	Maintenance
Capilano Raw Water Pump Station VFD Upgrades	4,000,000	850,000	2,150,000	900,000	—	—	3,900,000	Construction	Maintenance
Central Park WPS Starters Replacement	20,000,000	600,001	600,000	2,999,999	4,200,000	5,000,000	13,400,000	Construction	Maintenance
Cleveland Dam Pump House Improvement and Seismic upgrade	500,000	500,000	2,000,000	1,500,000	1,000,000	50,000	5,050,000	Design	Maintenance
Grandview Pump Station Improvements	4,550,000	100,000	700,000	—	—	—	800,000	Construction	Resilience

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Kersland Pump Station Improvement and Seismic upgrade	250,000	250,000	1,000,000	500,000	800,000	2,500,000	5,050,000	Design	Resilience
Kersland Pump Station No. 2	—	—	—	—	2,000,000	3,000,000	5,000,000	Not Started	Maintenance
Little Mountain Pump Station Improvement and Seismic upgrade	450,000	450,000	2,000,000	1,500,000	1,800,000	3,300,000	9,050,000	Design	Resilience
Little Mountain Pump Station No. 2	—	—	—	—	2,000,000	3,000,000	5,000,000	Not Started	Maintenance
Newton Pump Station No. 1 - Decommissioning and PRV	—	—	—	—	500,000	2,500,000	3,000,000	Not Started	Maintenance
Newton Pump Station No. 2	90,050,000	22,050,000	8,800,000	6,000,000	1,300,000	—	38,150,000	Construction	Growth
Pebble Hill Pump Station Seismic Upgrade	—	—	150,000	350,000	1,000,000	1,000,000	2,500,000	Not Started	Resilience
Pump Station Assessments and Upgrade Recommendations	2,550,000	500,000	500,000	500,000	500,000	500,000	2,500,000	Construction	Upgrade
Vancouver Heights Pump Station	1,000,000	250,000	1,500,000	1,250,000	500,000	50,000	3,550,000	Design	Maintenance
Westburnco Pump Station - Back-up Power	99,900,000	300,000	1,500,000	7,000,000	11,500,000	25,550,000	45,850,000	Design	Resilience
Westburnco Pump Station No. 2 VFD Replacements	3,050,000	200,000	250,000	—	—	—	450,000	Construction	Maintenance
Total Pump Stations	\$ 390,100,000	\$ 33,300,001	\$ 44,950,000	\$ 73,649,999	\$ 107,700,000	\$ 136,450,000	\$ 396,050,000		
Reservoirs									
Burnaby Mountain Tank No. 2 and No. 3	\$ 8,350,000	\$ 1,000,000	\$ 3,200,000	\$ 7,150,000	\$ 20,000,000	\$ 17,000,000	\$ 48,350,000	Design	Resilience
Cape Horn Reservoir Condition Assessment and Structural Repair	500,000	200,000	1,000,000	1,000,000	—	—	2,200,000	Design	Maintenance
Capilano Energy Recovery Facility 66" PRV Replacement	1,800,000	500,000	1,800,000	3,750,000	1,500,000	1,000,000	8,550,000	Design	Maintenance
Capilano Energy Recovery Facility Operational Upgrades	1,550,000	900,000	—	—	—	—	900,000	Construction	Maintenance
Central Park Reservoir Structural Improvements	700,000	50,000	2,300,000	3,000,000	1,600,000	—	6,950,000	Design	Maintenance
Dechlorination for Reservoir Overflow and Underdrain Discharges	3,500,000	300,000	600,000	1,800,000	—	—	2,700,000	Construction	Maintenance
Fleetwood Reservoir	61,150,000	250,000	1,000,000	500,000	—	—	1,750,000	Construction	Growth
Hellings Tank No. 2	—	—	2,500,000	4,000,000	7,500,000	4,000,000	18,000,000	Not Started	Growth
Hellings Tank Operational Upgrades	23,650,000	2,500,000	11,200,000	1,250,000	—	—	14,950,000	Construction	Growth
Kersland Reservoir No. 1 Structural Improvements	5,500,000	100,000	1,600,000	—	—	—	1,700,000	Construction	Maintenance
Newton Reservoir Cell #2 Structural Improvements	800,000	200,000	1,900,000	2,700,000	1,500,000	—	6,300,000	Design	Maintenance
Pebble Hill Reservoir No. 3 Seismic Upgrade	500,000	50,000	3,000,000	6,000,000	3,000,000	—	12,050,000	Design	Resilience
Prospect Reservoir Knotweed Removal and Drainage Improvements	7,000,000	50,000	200,000	—	2,000,000	—	2,250,000	Construction	Maintenance
Reservoir Isolation Valve Automation	6,400,000	50,000	1,000,000	1,450,000	1,700,000	550,000	4,750,000	Construction	Resilience

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Reservoir Sampling Kiosks - Multi Location	2,100,000	300,000	400,000	850,000	200,000	—	1,750,000	Construction	Upgrade
Reservoir Structural Assessments Phase 1	3,200,000	800,000	150,000	—	—	—	950,000	Design	Maintenance
Reservoir Structural Assessments Phase 2	—	—	500,000	1,700,000	1,000,000	—	3,200,000	Not Started	Maintenance
Sasamat Reservoir Seismic Upgrade	—	—	—	—	—	1,200,000	1,200,000	Not Started	Resilience
Seismic upgrade - Cape Horn Reservoir	—	—	—	—	—	2,000,000	2,000,000	Not Started	Resilience
Seismic upgrade - Vancouver Heights Reservoir	—	—	—	—	—	2,000,000	2,000,000	Not Started	Resilience
Sunnyside Reservoir Units 1 and 2 Seismic Upgrade	17,200,000	100,000	400,000	2,950,000	—	—	3,450,000	Construction	Resilience
Total Reservoirs	\$ 143,900,000	\$ 7,350,000	\$ 32,750,000	\$ 38,100,000	\$ 40,000,000	\$ 27,750,000	\$ 145,950,000		
Treatment Plants									
Coquitlam Intake Tower Seismic Upgrade	\$ 2,150,000	\$ —	\$ 2,000,000	\$ 2,000,000	\$ 8,000,000	\$ 15,000,000	\$ 27,000,000	Not Started	Resilience
Coquitlam Lake Water Supply*	253,950,000	55,150,000	33,300,000	32,500,000	34,300,000	43,300,000	198,550,000	Design	Growth
CWTP CO2 System Improvements	11,200,000	900,000	2,100,000	3,350,000	2,000,000	2,500,000	10,850,000	Construction	Maintenance
CWTP Mobile Disinfection System	2,900,000	750,000	1,150,000	—	500,000	—	2,400,000	Construction	Upgrade
CWTP Ozone Back-up Power	3,350,000	200,000	1,000,000	3,000,000	4,135,000	5,000,000	13,335,000	Design	Resilience
CWTP Ozone Generation Upgrades for Units 2 & 3	7,500,000	50,000	50,000	300,000	300,000	—	700,000	Construction	Upgrade
CWTP Ozone Sidestream Pump VFD Replacement	1,400,000	50,000	200,000	—	—	—	250,000	Construction	Maintenance
CWTP Process Equipment Improvements and Rehabilitation	750,000	250,000	1,000,000	500,000	500,000	200,000	2,450,000	Design	Maintenance
CWTP Soda Ash Double Containment	1,250,000	50,000	500,000	700,000	—	—	1,250,000	Construction	Maintenance
CWTP Temporary Water Supply	—	—	400,000	2,000,000	1,000,000	—	3,400,000	Not Started	Maintenance
Graphics Software Migration	8,300,000	500,000	2,000,000	3,000,000	800,000	1,900,000	8,200,000	Construction	Maintenance
SCFP - Greenwood and Back Wash Water Supply Pumps & SCOUR Blower VFD Replacement	4,500,000	1,700,000	1,600,000	500,000	—	—	3,800,000	Construction	Maintenance
SCFP Additional Pre-Treatment	4,000,000	500,000	1,700,000	8,700,000	13,000,000	16,000,000	39,900,000	Design	Upgrade
SCFP Centralized Compressed Air System	1,900,000	250,000	150,000	850,000	—	—	1,250,000	Construction	Maintenance
SCFP Clearwell Baffle Replacement	4,100,000	1,450,000	1,050,000	6,500,000	4,500,000	—	13,500,000	Construction	Maintenance
SCFP Clearwell Membrane Replacement	25,800,000	700,000	5,600,000	13,000,000	5,800,000	—	25,100,000	Construction	Maintenance
SCFP CO2 Tank Upgrade - Heat Insulation/Heater Replacement	1,000,000	50,000	200,000	700,000	—	—	950,000	Construction	Upgrade
SCFP Floc Tank Baffle Replacement and Ladder Installation to Improve Accessibility	13,800,000	1,400,000	5,000,000	2,400,000	4,000,000	—	12,800,000	Construction	Maintenance
SCFP Heat Pump Retrofit	6,000,000	500,000	1,000,000	2,500,000	1,700,000	—	5,700,000	Construction	Maintenance
SCFP OMC Building Expansion	9,400,000	2,550,000	3,200,000	1,800,000	—	—	7,550,000	Construction	Maintenance
SCFP Polymer System Upgrade	4,650,000	50,000	500,000	—	—	—	550,000	Construction	Maintenance
SCFP Residuals Handling PH Adjustment Permanent System	4,000,000	300,000	1,000,000	—	2,500,000	—	3,800,000	Construction	Upgrade

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SCFP Roofing Replacement	1,200,000	200,000	3,600,000	4,200,000	3,500,000	9,950,000	21,450,000	Design	Maintenance
Total Treatment Plants	\$ 373,100,000	\$ 67,550,000	\$ 68,300,000	\$ 88,500,000	\$ 86,535,000	\$ 93,850,000	\$ 404,735,000		
Dams									
Capilano Hydropower	\$ 250,000	\$ —	\$ —	\$ —	\$ —	2,100,000	2,100,000	Not Started	Opportunity
Capilano Reservoir and Seymour Reservoir Boom Maintenance	—	—	—	—	250,000	750,000	1,000,000	Not Started	Maintenance
Capilano Reservoir and Seymour Reservoir Dam Safety Boom Replacement	10,100,000	7,000,000	2,500,000	—	—	—	9,500,000	Construction	Maintenance
CLD & SFD Fasteners Replacement & Coating Repairs	2,350,000	300,000	200,000	—	—	—	500,000	Construction	Maintenance
CLD and SFD Lead Paint Removal, Surface Crack Injection and General Corrosion Mitigation	5,500,000	2,000,000	900,000	500,000	—	—	3,400,000	Construction	Maintenance
CLD Bridge Expansion Joint Renewal	100,000	50,000	300,000	—	—	—	350,000	Design	Maintenance
CLD Dam Control System Upgrade	350,000	140,000	390,000	250,000	600,000	1,000,000	2,380,000	Design	Maintenance
CLD Upper Outlet Slide Gate Refurbishment and Potential Flow Control Upgrade	750,000	400,000	150,000	1,275,000	1,275,000	950,000	4,050,000	Construction	Maintenance
Cleveland Dam - Lower Outlet HBV Rehabilitation	5,150,000	50,000	200,000	—	—	—	250,000	Construction	Maintenance
Cleveland Dam Domestic Intake Concrete Repair	450,000	250,000	—	—	—	—	250,000	Construction	Maintenance
Cleveland Dam Drumgate Seal Replacement	1,300,000	50,000	—	—	—	—	50,000	Construction	Maintenance
Cleveland Dam East Abutment Groundwater Control Seismic Upgrade	—	—	500,000	500,000	1,000,000	5,000,000	7,000,000	Not Started	Upgrade
Cleveland Dam MCE Seismic Upgrades	—	—	1,000,000	1,000,000	1,000,000	2,000,000	5,000,000	Not Started	Resilience
Cleveland Dam Power Resiliency Improvements	1,700,000	250,000	250,000	500,000	300,000	—	1,300,000	Construction	Resilience
Cleveland Dam Public Warning System and Enhancements	10,000,000	1,300,000	300,000	700,000	—	—	2,300,000	Construction	Maintenance
Cleveland Dam Seismic Stability Evaluation	1,500,000	400,000	450,000	—	—	—	850,000	Design	Resilience
Cleveland Dam Spillway Resurfacing	—	—	—	—	400,000	4,000,000	4,400,000	Not Started	Maintenance
Loch Lomond Formalized Spillway Design and Construction	—	—	50,000	250,000	1,500,000	500,000	2,300,000	Not Started	Maintenance
Loch Lomond Outlet Works Rehabilitation	12,350,000	800,000	3,200,000	3,500,000	2,000,000	2,000,000	11,500,000	Construction	Resilience
Palisade and Burwell Dam Boom Detailed Design and Construction	100,000	50,000	150,000	550,000	100,000	—	850,000	Design	Resilience
Palisade Outlet Works Rehabilitation	11,950,000	50,000	50,000	50,000	50,000	5,000,000	5,200,000	Construction	Maintenance
Rice Lake Dams Rehabilitation	3,000,000	350,000	250,000	1,000,000	500,000	250,000	2,350,000	Construction	Maintenance
Rice Lake Tunnel Decommissioning	500,000	250,000	350,000	2,500,000	2,500,000	—	5,600,000	Design	Maintenance
SCFP Facility Rehabilitation	4,450,000	400,000	1,000,000	1,000,000	1,000,000	1,000,000	4,400,000	Construction	Maintenance
Seymour Dam Hydropower	—	—	—	—	600,000	2,800,000	3,400,000	Not Started	Opportunity

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Seymour Falls and Cleveland Dam ADAS Integration of New Instruments	800,000	400,000	425,000	25,000	—	—	850,000	Construction	Upgrade
Seymour Falls Dam Backup Generator Containment and Replacement	2,000,000	800,000	350,000	—	—	—	1,150,000	Construction	Maintenance
Seymour Falls Dam Domestic Slide Gates HPU Replacement	250,000	25,000	125,000	350,000	250,000	50,000	800,000	Design	Maintenance
Seymour Falls Dam Public Warning System	10,000,000	750,000	2,000,000	1,000,000	100,000	5,200,000	9,050,000	Construction	Maintenance
Seymour Falls Dam Seismic Stability Assessment	3,800,000	1,000,000	1,000,000	700,000	2,850,000	2,500,000	8,050,000	Design	Resilience
Seymour Falls Dam Turbine Replacement	—	—	—	—	2,800,000	—	2,800,000	Not Started	Maintenance
Seymour Falls Dam Turbine Upgrade	200,000	150,000	450,000	600,000	50,000	—	1,250,000	Design	Maintenance
SFD and CLD Debris Removal	1,200,000	650,000	450,000	—	—	—	1,100,000	Construction	Maintenance
Total Dams	\$ 90,100,000	\$ 17,865,000	\$ 16,990,000	\$ 16,250,000	\$ 19,125,000	\$ 35,100,000	\$ 105,330,000		
Rechlorination Stations									
Capilano Primary Disinfection Decommissioning	—	—	500,000	2,000,000	500,000	—	3,000,000	Not Started	Maintenance
Newton Rechlorination Station No. 2	850,000	50,000	700,000	900,000	1,400,000	3,000,000	6,050,000	Design	Maintenance
Pitt River Rechlorination Station Reconstruction	—	—	500,000	800,000	1,000,000	3,300,000	5,600,000	Not Started	Maintenance
Rechlorination Sites - Back-Up Power	—	—	—	200,000	400,000	500,000	1,100,000	Not Started	Resilience
Rechlorination Station Upgrades	24,950,000	3,200,000	7,900,000	5,000,000	9,900,000	5,000,000	31,000,000	Construction	Maintenance
Total Rechlorination Stations	\$ 25,800,000	\$ 3,250,000	\$ 9,600,000	\$ 8,900,000	\$ 13,200,000	\$ 11,800,000	\$ 46,750,000		
Water Supply Areas									
Capilano Watershed Bridge Replacements - Crown Creek and Capilano River	100,000	95,000	200,000	1,000,000	—	—	1,295,000	Design	Maintenance
Capilano Watershed Security Gatehouse	5,700,000	100,000	600,000	—	—	—	700,000	Construction	Maintenance
Twin Bridge East Abutment Protection - Lower Seymour Conservation Reserve	—	—	—	—	—	400,000	400,000	Not Started	Maintenance
Water Supply Area Aggregate Production	1,000,000	550,000	450,000	—	—	100,000	1,100,000	Construction	Resilience
Water Supply Area Gate Replacements	—	—	750,000	250,000	—	—	1,000,000	Not Started	Maintenance
Total Water Supply Areas	\$ 6,800,000	\$ 745,000	\$ 2,000,000	\$ 1,250,000	\$ —	\$ 500,000	\$ 4,495,000		
Works Yard									
Beach Yard Facility - Site Redevelopment	3,000,000	500,000	1,500,000	2,700,000	5,000,000	24,500,000	34,200,000	Design	Maintenance
Lake City HVAC Upgrade	6,200,000	400,000	1,050,000	2,000,000	1,500,000	950,000	5,900,000	Design	Resilience
Microbiology Laboratory Expansion	1,900,000	500,000	650,000	1,150,000	3,000,000	5,000,000	10,300,000	Design	Maintenance
South Fraser Storage Yard	9,000,000	1,750,000	4,950,000	1,850,000	7,550,000	2,000,000	18,100,000	Construction	Maintenance
South Fraser Works Yard	59,000,000	1,400,000	4,800,000	17,350,000	16,000,000	12,000,000	51,550,000	Design	Maintenance
Total Water Works Yard	\$ 79,100,000	\$ 4,550,000	\$ 12,950,000	\$ 25,050,000	\$ 33,050,000	\$ 44,450,000	\$ 120,050,000		

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Communication Systems									
Critical Control Sites - Back-Up Power	–	–	300,000	500,000	800,000	1,400,000	3,000,000	Not Started	Resilience
Facilities O&M Documentation Development	2,000,000	400,000	550,000	600,000	–	–	1,550,000	Design	Resilience
Industrial Communication Manager Migration	7,750,000	1,600,000	2,150,000	1,500,000	500,000	750,000	6,500,000	Construction	Maintenance
Online Chlorine and pH Analyzers	3,500,000	1,000,000	1,500,000	2,250,000	1,500,000	–	6,250,000	Construction	Upgrade
SCFP & CWTP Control System I/O Modernization	–	–	250,000	3,200,000	3,200,000	1,000,000	7,650,000	Not Started	Maintenance
Small Logic Controller Control System Upgrades Phase 1	3,000,000	600,000	600,000	600,000	750,000	–	2,550,000	Construction	Maintenance
Water Optimization - Instrumentation	21,550,000	2,350,000	4,600,000	3,200,000	4,800,000	3,700,000	18,650,000	Multiple	Upgrade
Water Supply Area Hydrometric and Meteorological Station Replacements	–	–	–	250,000	500,000	250,000	1,000,000	Not Started	Maintenance
Total Communication Systems	\$ 37,800,000	\$ 5,950,000	\$ 9,950,000	\$ 12,100,000	\$ 12,050,000	\$ 7,100,000	\$ 47,150,000		
TOTAL CAPITAL EXPENDITURES	\$5,468,150,000	\$ 486,100,567	\$ 544,324,040	\$ 672,729,990	\$ 882,508,255	\$ 845,492,266	\$ 3,431,155,118		
SUMMARY BY DRIVER									
Growth	\$3,140,150,000	\$ 265,950,000	\$ 239,800,000	\$ 275,820,141	\$ 419,748,141	\$ 389,500,000	\$ 1,590,818,282		
Maintenance	1,297,000,000	160,826,502	213,314,977	245,753,999	302,620,560	212,892,266	1,135,408,304		
Resilience	913,750,000	49,374,065	68,634,063	116,430,850	123,639,554	205,000,000	563,078,532		
Upgrade	114,100,000	9,950,000	22,325,000	32,175,000	33,600,000	33,200,000	131,250,000		
Opportunity	3,150,000	–	250,000	2,550,000	2,900,000	4,900,000	10,600,000		
Total	\$5,468,150,000	\$ 486,100,567	\$ 544,324,040	\$ 672,729,990	\$ 882,508,255	\$ 845,492,266	\$ 3,431,155,118		

**Draft Capital Budget refers to the estimated project costs to active phase.

* Project is part of Metro Vancouver's formal stage gate framework. Detailed project report will be brought forward as part of the stage gate review process.



Clayton Reservoir Valve Chamber

GREATER VANCOUVER WATER DISTRICT

DRAFT FIVE YEAR CAPITAL PLAN (2027 – 2031)

Marilyn Towill

General Manager, Water Services

Water Committee Meeting, July 15, 2026
85840287

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AGENDA

- Water System Overview
- Financial Plan Process Overview
- Capital Plan Drivers
- Water Services Projects Overview

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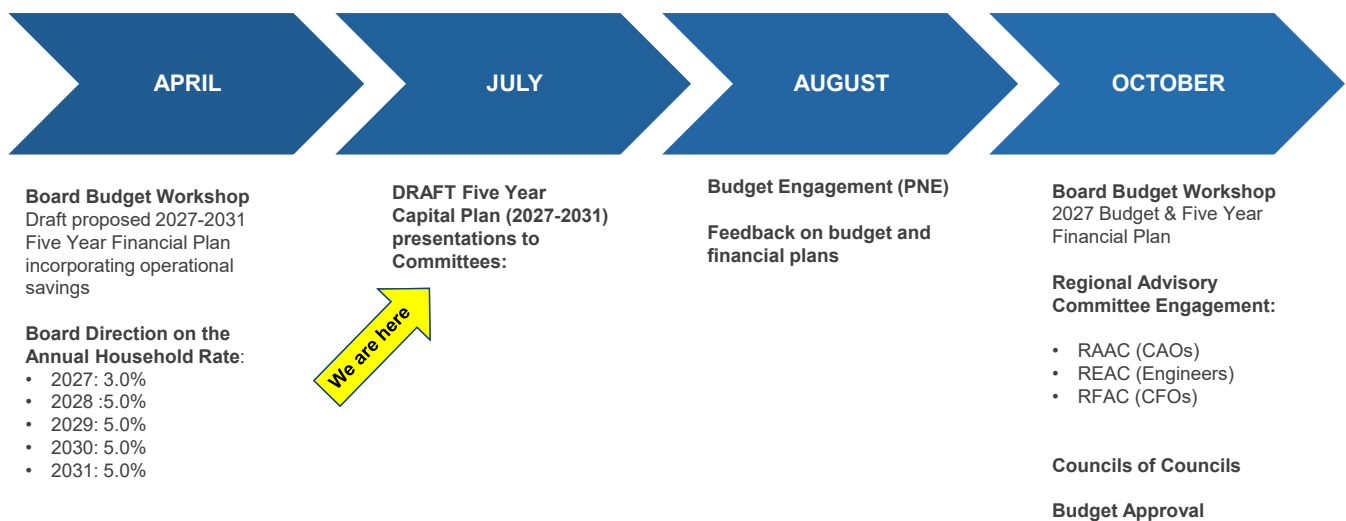
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2027-2031 FINANCIAL PLAN & ANNUAL BUDGET TIMELINE



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WATER SERVICES CAPITAL PROGRAM

GREATER VANCOUVER WATER DISTRICT
CAPITAL PORTFOLIO
WATER SERVICES
DRAFT FIVE YEAR CAPITAL PLAN (2027 – 2031)

- 188 Capital Projects
- Capital Expenditures for five years
- Provides active phase; primary driver
- Nine Asset Classes

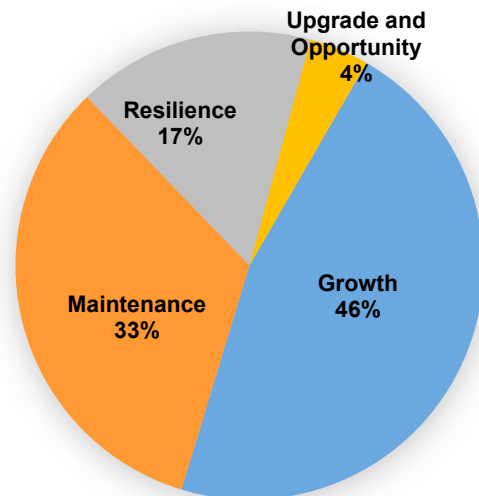
	DRAFT CAPITAL BUDGET	2027 CAPITAL EXPENDITURES	2028 CAPITAL EXPENDITURES	2029 CAPITAL EXPENDITURES	2030 CAPITAL EXPENDITURES	2031 CAPITAL EXPENDITURES	2027 TO 2031 TOTAL CAPITAL EXPENDITURES	ACTIVE PHASE	PRIMARY DRIVER
CAPITAL EXPENDITURES									
Water Mains									
Decommissioned and Abandoned Pipe projects	–	–	–	–	–	3,000,000	3,000,000	Not Started	Maintenance
37th Avenue Main No. 2 (Rupert Street to Little Mountain Reservoir)	1,150,000	500,000	1,050,000	2,000,000	3,000,000	22,000,000	28,550,000	Design	Maintenance
Angus Drive Main	30,700,000	50,000	350,000	–	–	–	430,000	Construction	Growth
Angus Drive Turbine	–	–	50,000	1,550,000	1,000,000	–	2,600,000	Not Started	Opportunity
Annacis Main No. 2 (River Crossing Removal)	–	–	–	400,000	4,000,000	5,000,000	9,400,000	Not Started	Maintenance
Annacis Main No. 2 and Bannerton Island Main Online Chlorine and pH Analysis	1,500,000	50,000	200,000	–	–	–	250,000	Construction	Upgrade
Annacis Main No. 5 (North)	115,100,000	30,000,000	34,000,000	9,000,000	17,900,000	–	90,900,000	Construction	Growth
Annacis Main No. 5 (South)	103,550,000	23,150,000	7,750,000	1,400,000	19,350,000	–	51,650,000	Construction	Growth
Annacis Water Supply Tunnel*	482,200,000	45,000,000	20,000,000	12,070,141	7,999,141	–	55,068,282	Construction	Growth
BC Ferries Fleet Maintenance Unit Re-Development - Dike Construction - Lulu Island Delta Main Protection	3,000,000	1,500,000	–	–	–	–	1,500,000	Construction	Maintenance
Burnaby Mountain Main No. 2	2,300,000	200,000	689,999	2,500,000	5,500,000	6,500,000	15,400,000	Design	Maintenance
Cambie-Richmond Main (Oak Street) Aerial Crossing Rehabilitation	2,000,000	250,000	1,000,000	750,000	–	–	2,000,000	Construction	Maintenance
Cambie-Richmond Water Supply Tunnel*	82,850,000	7,000,000	7,000,000	17,376,927	10,000,000	60,000,000	101,376,927	Design	Resilience
Central Park Main No. 2 (10th Ave to Westburncroft)	35,250,000	7,100,000	10,050,000	5,000,000	6,550,000	–	28,700,000	Construction	Maintenance
Central Park Main No. 2 (Patterson to 10th Ave)	140,850,000	18,600,000	17,350,000	8,550,000	–	–	44,500,000	Construction	Maintenance
Clayton Langley Main No. 2	11,700,000	500,000	2,199,999	5,300,000	3,000,000	–	11,000,000	Construction	Resilience
Couquet Water Main*	1,437,950,000	78,000,000	99,000,000	134,000,000	134,000,000	130,000,000	695,000,000	Multiple	Growth
Douglas Road Main No. 2 (Flow Meter 188) Replacement	2,000,000	50,000	–	–	–	–	50,000	Construction	Maintenance
Douglas Road Main No. 2 (Vancouver Heights Section)	22,950,000	800,000	950,000	–	–	–	1,750,000	Construction	Maintenance
Douglas Road Main No. 2 Still Creek	58,550,000	100,000	750,000	–	–	–	850,000	Construction	Maintenance
Douglas Road Main Protection	1,150,000	200,000	50,000	50,000	50,000	50,000	400,000	Construction	Maintenance
Emergency Reservoir and Valve Refurbishments	10,000,000	1,000,000	5,000,000	8,800,000	5,000,000	5,000,000	24,800,000	Construction	Upgrade
Fortis Tibbury LNG Project Phase 2	200,000	50,000	50,000	50,000	–	–	150,000	Construction	Maintenance
Fort Couquet Water Main (Formerly Haney Main No. 4 (West Section))	10,050,000	1,500,000	3,050,000	21,900,000	39,450,000	51,050,000	116,950,000	Multiple	Growth
Improvements to Capilano Main No. 4 and 5	2,700,000	50,000	1,750,000	700,000	–	–	2,500,000	Construction	Maintenance
Kennedy Newton Main	181,650,000	2,850,000	3,000,000	2,000,000	–	–	7,850,000	Construction	Growth
Lulu Island - Delta Main - Sewer Protection Phase 2	200,000	150,000	500,000	2,800,000	–	–	3,450,000	Design	Maintenance

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CAPITAL PLAN DRIVERS

Driver	Outcome	2027-2031 Capital Plan (\$M)
Growth	Accommodate population and economic growth	\$1,590.8
Maintenance	Maintain assets in a state of good repair	\$1,135.4
Resilience	Minimize impacts resulting from seismic events and climate change	\$563.1
Upgrade and Opportunity	Enhance levels of service	\$141.9
Total		\$3,431.2



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WATER SERVICES

188 Projects in the Capital Plan

Driver	DRAFT 5 Year Capital Plan (2027-2031) (\$Million)	Key Projects
Growth	\$1,590.8	Coquitlam Water Main Coquitlam Lake Water Supply South Surrey Main No. 2
Maintenance	\$1,135.4	Stanley Park Water Supply Tunnel Burnaby Mountain Pump Station No. 2
Resilience	\$563.1	Seymour Main No. 5 III (North) Cambie-Richmond Water Supply Tunnel
Upgrade	\$131.3	SCFP Additional Pre-Treatment Emergency Reservoir and Valve refurbishments
Opportunity	\$10.6	Seymour Dam Hydropower Angus Drive Turbine
Total	\$3,431.2	

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WATER SERVICES

DRAFT 5 YEAR (2027 – 2031) CAPITAL PLAN EXPENDITURES

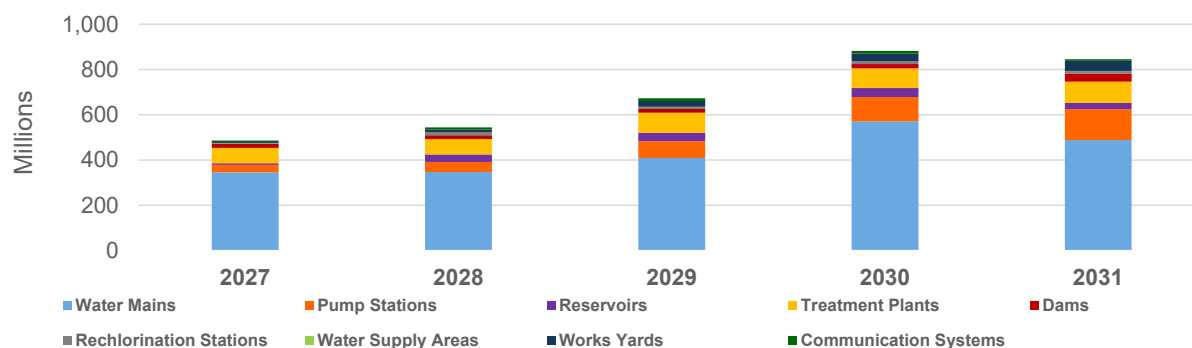
Overview:

- 2027 - 2031 Capital Plan: \$3.4B
- 2027 Estimated Capital Expenditure: \$486.1M
- 188 projects

Drivers:

- Capital project in progress carried forward
- Reviewed for deferrals and savings
- Project risks and scope provisions

2027 – 2031 Water Services Capital Plan



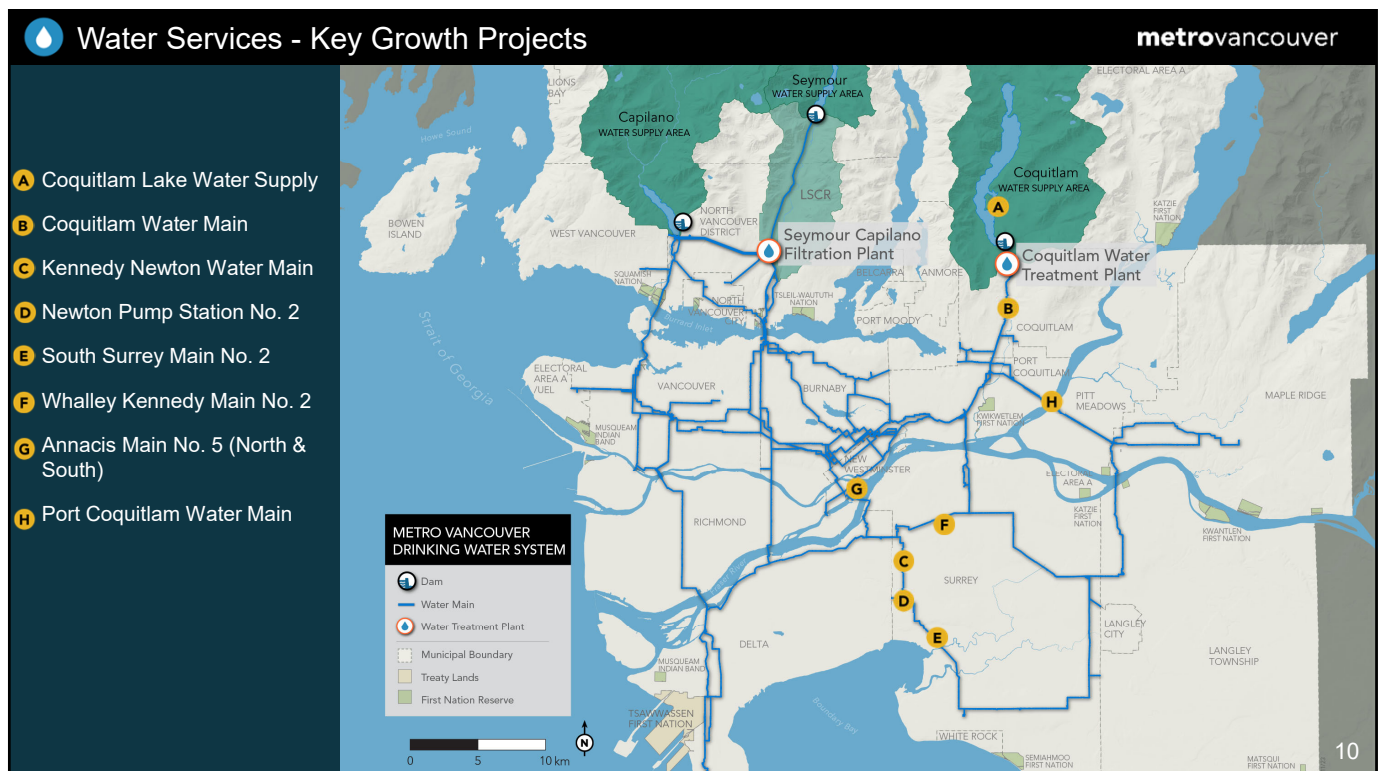
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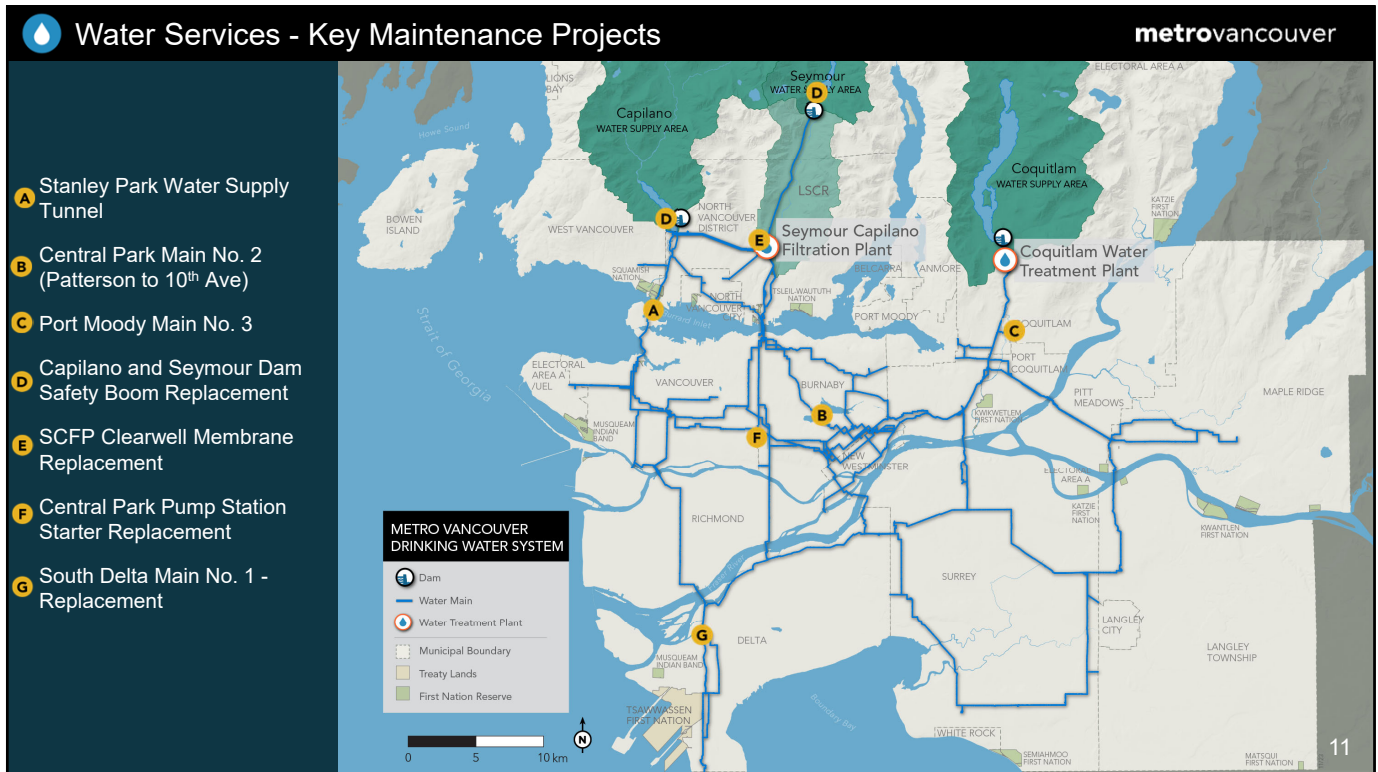
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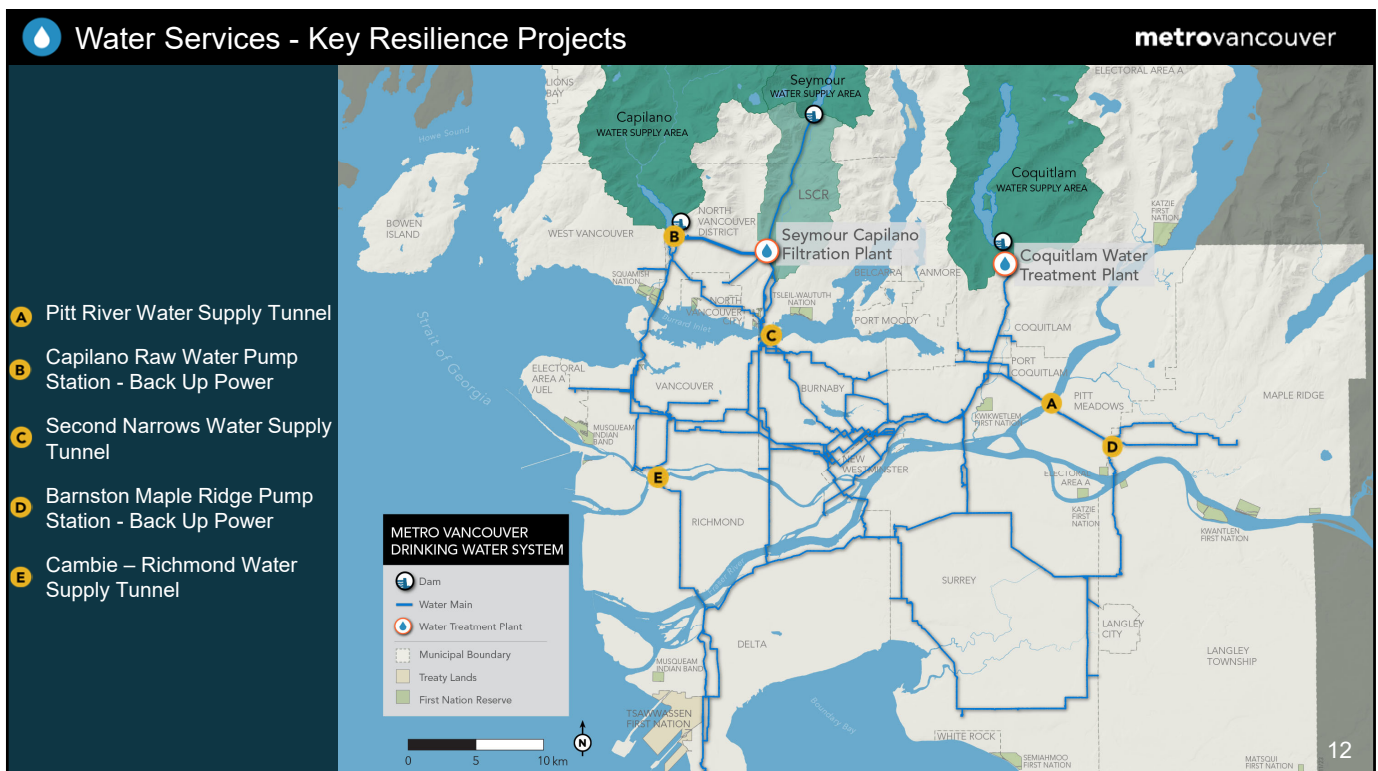
2027 CAPITAL EXPENDITURES

- The following 8 projects make up 67% of the proposed 2027 capital expenditures for all 188 projects
 - Coquitlam Water Main
 - Stanley Park Water Supply Tunnel
 - Coquitlam Lake Water Supply
 - Annacis Water Supply Tunnel
 - Annacis Main No. 5 (South)
 - Newton Pump Station No. 2
 - Central Park Main No. 2 (Patterson to 10th Ave)
 - Pitt River (Haney) Water Supply Tunnel





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EXAMPLES OF ONGOING PROJECTS



Second Narrows Water Supply Tunnel – North Valve Chamber



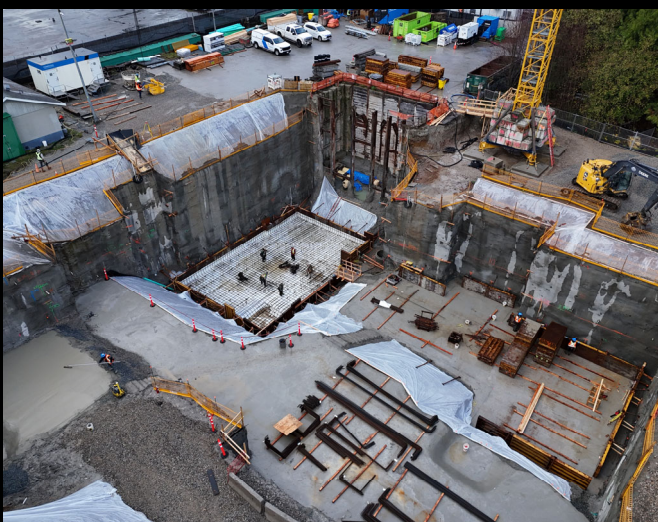
Annacis Water Supply Tunnel South Shaft

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EXAMPLES OF ONGOING PROJECTS



Newton Pump Station No. 2 – Site Preparation



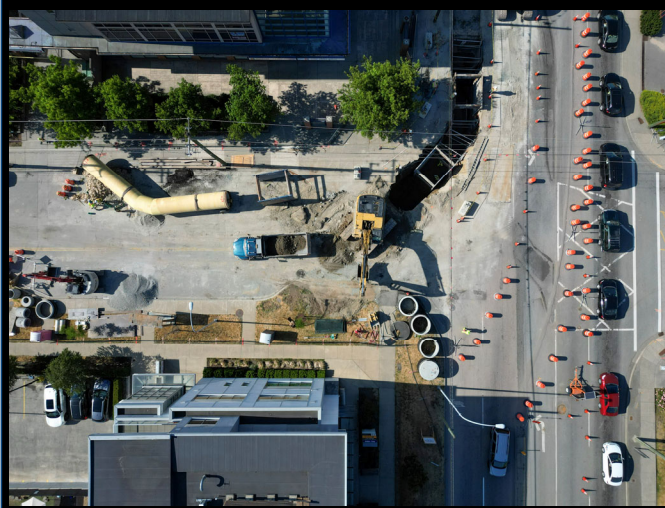
Coquitlam Water Main – Robson to Guildford Section

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EXAMPLES OF ONGOING PROJECTS



Kennedy Newton Water Main – Scott Road



Central Park Main – Imperial Street

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NEXT STEPS

1. Consider Committee comments on the 2027 – 2031 Capital Plan
2. Present revised 2027 – 2031 Capital Plan and 2027 Operating and Capital Budgets for Committee and Board consideration on:
 - October 14, 2026, to Water Committee
 - October 21, 2026, to the Board Budget Workshop
 - October 24, 2026, to Council of Councils
 - October 30, 2026, to the GVWD Board

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To: Water Committee

From: Ian Manning, Director, Dam Safety, Water Services

Date: June 18, 2026

Meeting Date: July 15, 2026

Subject: **2025 GVWD Dam Safety Program Annual Update**

RECOMMENDATION

THAT the Water Committee receive for information the report dated June 18, 2026, titled “2025 GVWD Dam Safety Program Annual Update”.

EXECUTIVE SUMMARY

The GVWD owns and operates seven dams that are regulated by the Ministry of Water, Land and Resource Stewardship – Dam Safety Section, five of which are regional drinking water supply dams and two of which store water for ecological and recreational purposes. The GVWD Dam Safety Program is compliant with the requirements outlined in the provincial Dam Safety Regulation (BC Regulation 40/2016; amended by Regulation 32/2023) for the water supply dams.

There were no unsafe or unacceptable conditions identified from the check and review activities carried out at the GVWD dams in 2025, including routine surveillance, monitoring, and formal dam inspections.

PURPOSE

To provide the Water Committee with an annual update on dam safety activities associated with the Cleveland, Seymour Falls, Palisade, Burwell, Loch Lomond, Rice Lake North, and Rice Lake South Dams.

BACKGROUND

The Water Services (WS) Dam Safety division monitors and reviews the performance of seven GVWD dams, including five water supply dams, to ensure they remain safe and reliable for the continued supply of drinking water. The dam safety program supports the goals and initiatives of the Board Strategic Plan and Drinking Water Management Plan through its contribution to the long-term resilience of the regional drinking water system.

GVWD DAMS

Cleveland Dam and Seymour Falls Dam

Cleveland Dam is a 92-meter-high concrete gravity dam that impounds Capilano Reservoir. Seymour Falls Dam is a 30-meter-high composite concrete and earthfill dam that impounds Seymour Reservoir. Both dams include discharge outlets to release water downstream to their respective rivers, as well as water supply intakes to convey water for treatment at the Seymour Capilano Filtration Plant. The reservoir areas upstream of the dams are kept clear of debris with a series of booms that float on the reservoir surface preventing the passage of large debris towards the dams and associated intakes.

Alpine Lake Dams

The three Alpine Lake Dams (Palisade, Burwell, and Loch Lomond dams) are located within the Capilano and Seymour watersheds and range in height from 5.8 m to 8.2 m. Palisade and Burwell Dams are rockfill dams with concrete slabs on their crests and upstream faces, while Loch Lomond Dam is a vertical-face concrete dam. All three Alpine Lake Dams include spillways and discharge outlets that allow for the release of water to their respective downstream reservoirs. Palisade Lake discharges to the Capilano Reservoir, while Burwell and Loch Lomond Lakes discharge to the Seymour Reservoir. The alpine lakes are primarily used to augment the summertime storage capacity of the two downstream water supply reservoirs.

Rice Lake Dams

The two Rice Lake Dams are located at the north and south ends of Rice Lake within the Lower Seymour Conservation Reserve (LSCR) in North Vancouver. Metro Vancouver operates and maintains the LSCR primarily for future water supply potential as well as to conserve its ecological and recreational value. The Rice Lake North Dam is a 5.5-meter-high earthfill dam and includes an overflow spillway, and the Rice Lake South Dam is a 7.5-meter-high earthfill dam. The Rice Lake Dams were constructed in the late 1950s to provide a supplemental drinking water supply for the City of North Vancouver. The function of Rice Lake as a drinking water supply ceased in the 1980s and it has since been used for recreational purposes including public walking trails, a floating dock, and fishing.

COMPLIANCE WITH BC DAM SAFETY REGULATION

Cleveland Dam and Seymour Falls Dam are classified as “extreme” consequence dams according to the provincial Dam Safety Regulation. The three Alpine Lake Dams are classified as “significant” consequence dams, while the two Rice Lake Dams are classified as “very high” consequence dams.

The following work was completed in 2025 to ensure continued compliance with the Dam Safety Regulation:

- Site surveillance was carried out, at a minimum, weekly at Cleveland and Seymour Falls Dams.
- Weekly site surveillance was carried out at the Rice Lake Dams.
- Monthly site surveillance is typically required at significant consequence dams, unless otherwise specified in the Operation, Maintenance, and Surveillance (OMS) Manual. Given their remote locations and winter helicopter access restrictions, the Alpine Lake Dams were periodically inspected between May and October in accordance with their OMS Manuals.
- Semi-annual formal inspections were completed for Cleveland Dam and Seymour Falls Dam.
- Annual formal inspections were completed for the Alpine Lake Dams and Rice Lake Dams.
- Annual test operation of mechanical, electrical, and communications components was completed for all water supply dams where applicable. There are currently no mechanical, electrical, or communications components at the Rice Lake Dams.
- Instrumentation readings were collected at various intervals, ranging from near-continuous to annually for Cleveland Dam and Seymour Falls Dam. Data from instrumentation at the Rice Lake Dams as well as Alpine Lake Dams was collected at intervals ranging from near-continuous to annually. Geotechnical and lake level instrumentation data is reviewed by staff daily (Monday – Friday) through an automated data acquisition system.

-
- Annual review of contact information in the Dam Emergency Plan (DEP) is required, and if necessary, revision and submission to the Provincial Dam Safety Officer. The internal and external contact information for all Water Services regulated dams were reviewed in late 2025 and resubmitted to the Dam Safety Officer as part of DEP revisions in 2026.
 - At a minimum, the OMS Manual and DEP for “extreme” and “very high” consequence dams must be reviewed every seven years and revised and reported to the Dam Safety Officer, if necessary.
 - **Cleveland Dam:** The current OMS Manual was issued in July 2023. An update to the DEP was issued in March 2026.
 - **Seymour Falls Dam:** The current OMS Manual was issued in March 2025. An update to the DEP was issued in March 2026.
 - **Rice Lake Dams:** The OMS Manual was issued in February 2025. The DEP was issued in October 2025, with additional updates following external partner engagement issued in December 2025 and February 2026. A DEP tabletop exercise was completed in November 2025.
 - For “significant” consequence dams, the OMS Manual and DEP must be reviewed and, if necessary, updated and reported to the Dam Safety Officer at least every 10 years. The Alpine Lake Dams OMS Manuals were last revised in 2016, and updated versions will be issued in 2026. Updates to the DEPs were issued in May 2026.
 - A formal Dam Safety Review (DSR) must be carried out, with the report submitted to the Dam Safety Officer every seven years for “extreme” consequence dams, and every 10 years for “very high” consequence dams.
 - **Cleveland Dam:** The most recent DSR commenced in 2023 and was completed in 2024. The review identified no unsafe or unacceptable conditions related to design, construction, or operation. The consultant’s report was submitted to the BC Dam Safety Office in December 2024.
 - **Seymour Falls Dam:** The most recent DSR commenced in 2021 and was finalized in 2024. The review concluded that the dam is reasonably safe, operated safely, maintained in a safe condition, and that surveillance is adequate to detect any developing safety problems. The consultant’s report was submitted to the BC Dam Safety Office in June 2024.
 - **Rice Lake Dams:** A comprehensive DSR was initiated in 2025 following completion of detailed hydrotechnical and geotechnical assessments, and will be completed in 2026.
 - A formal DSR is not required for “significant” consequence dams. To be proactive, a DSR was carried out for the Alpine Lake Dams in 2012, with results indicating that the dams are being operated and maintained in a satisfactory manner.
 - Formal dam audits are conducted by the provincial Dam Safety Officer approximately every five years for “extreme” and “very high” consequence dams, and every 10 years for “significant” consequence dams. The most recent audits for Cleveland and Seymour Falls Dams were completed in 2020; the Cleveland audit noted the October 1, 2020 safety incident, with no other significant concerns identified. Follow-up audits for Cleveland and Seymour Falls Dams are being planned by the Dam Safety Officer for 2026. An audit was carried out for the Rice Lake Dams in June 2025, and the Dam Safety Officer noted the outstanding DSR which is currently in progress.

- A water licence application was submitted for the Rice Lake Dams in October 2023. In June 2025, the Ministry of Water, Land and Resource Stewardship requested a detailed assessment of Environmental Flow Needs (EFN) and Instream Flow Requirements (IFR). A report was submitted to address these requests in April 2026, and issuance of the updated water licence remains pending.

CLEVELAND DAM SAFETY ENHANCEMENTS

The Cleveland Dam Safety Enhancements program was initiated in 2021 and involves the identification and management of various initiatives to improve the safety and reliability of the dam. Key activities in 2025 included:

- Engagement with the Dam Safety Advisory Panel (DSAP), comprised of external technical experts. With major DSAP review work largely complete, efforts in 2025 focused on transitioning the panel's role and reconfiguring its membership and mandate to support broader strategic input across Metro Vancouver's dam portfolio.
- Completion of installation of new monitoring equipment for the spillway gate position and related safety systems in 2025, following design work completed in 2023.
- Advanced the Capilano River Evacuation System (formerly referred to as the Capilano Public Warning System). Preliminary studies completed in 2024 (including river user characterization, hydraulic and hazard modelling, and an updated public safety risk assessment) supported the initiation of detailed design in 2025, which is expected to be completed by the end of 2026. Construction is anticipated to begin in late 2026 or early 2027.

TRANSITION TO A CENTRALIZED CORPORATE DAM SAFETY PROGRAM

Metro Vancouver has taken significant steps to strengthen dam safety management across the organization through the establishment of a corporate policy framework and a centralized model to support dam safety activities across all departments with dam assets, which include Water Services, Liquid Waste Services, and Regional Parks.

The Interim Corporate Dam Safety Policy, first approved in 2022, established the requirements and accountabilities for the safe operation and maintenance of Metro Vancouver dams. The policy was updated in October 2025 to reflect organizational changes, updates to the regulatory landscape, and to clarify key definitions and expectations.

In 2025, further progress was made in establishing the corporate Dam Safety Management System through development of the Dam Safety Governance and Implementation Manuals. These documents will document the framework for dam governance, risk management, and program delivery across the organization.

DAM ASSET CONDITION

The five drinking water supply dams and two Rice Lake Dams are regularly maintained and upgraded to ensure they remain in good operating condition and to extend their service life. Issues are identified through surveillance, inspections, assessments, and independent expert reviews.

Improvement projects are prioritized and incorporated into GVWD's operating and capital financial planning process.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

There are no financial implications arising from this report. The cost of routine surveillance, monitoring, and inspection activities form part of the Water Services annual operating budget, and financial contributions are in place to support the centralized management of dam safety activities on behalf of all dam owner departments.

CONCLUSION

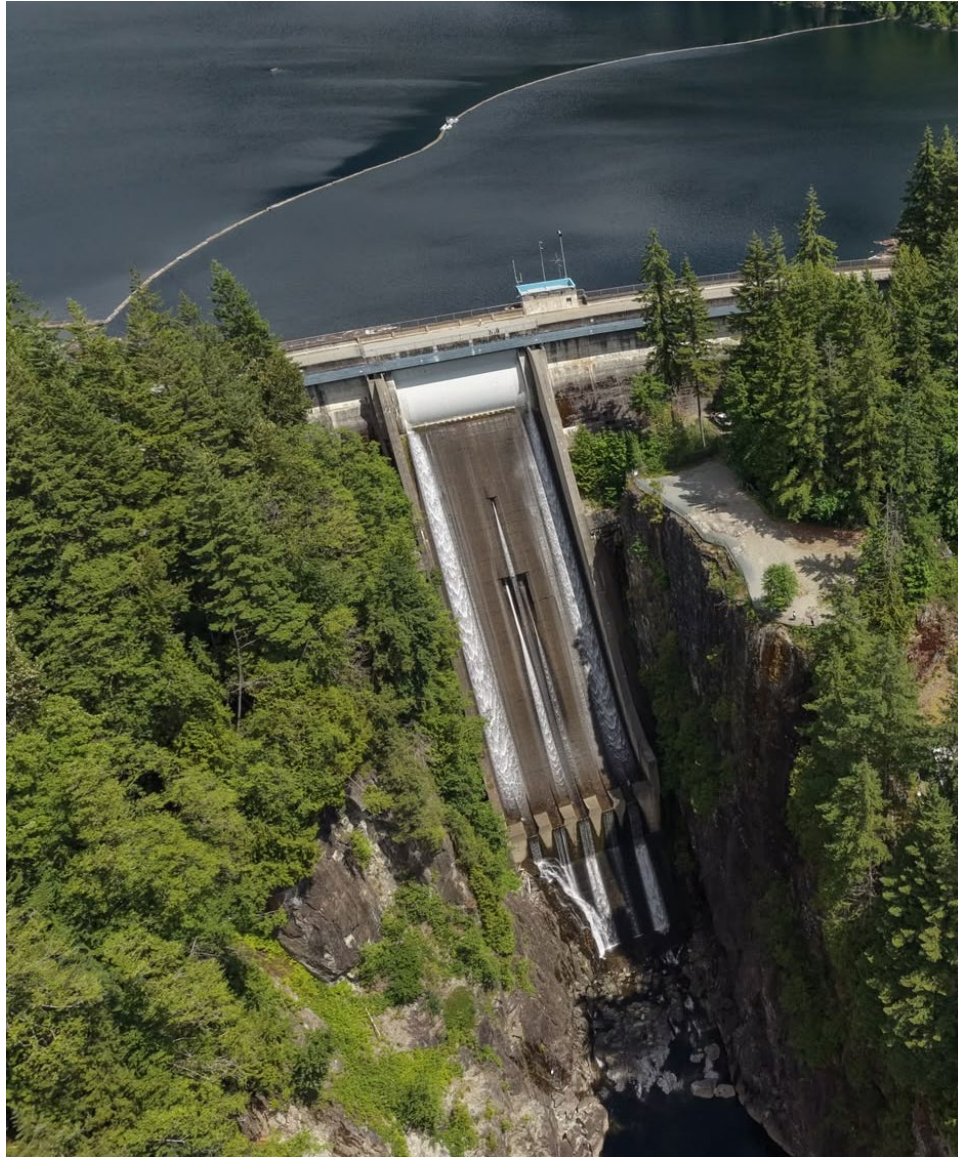
The GVWD Dam Safety Program is compliant with the requirements of the provincial Dam Safety Regulation for the water supply dams. No significant concerns were identified from the 2025 routine surveillance, monitoring, and formal dam inspections.

ATTACHMENT

1. Photos of the GVWD Water Supply Dams and other GVWD Dams.

REFERENCE

- 1 *Dam Safety Regulation*, BC Reg 40/2016
https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/40_2016



Cleveland Dam



Seymour Falls Dam



Burwell Dam



Loch Lomond Dam



Palisade Dam



Rice Lake North Dam



Rice Lake South Dam



To: Water Committee

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

Date: June 30, 2026

Meeting Date: July 15, 2026

Subject: **2026 Update on Water Sustainability Innovation Fund Projects**

RECOMMENDATION

THAT the Water Committee receive for information the report dated June 30, 2026, titled “2026 Update on Water Sustainability Innovation Fund Projects”.

EXECUTIVE SUMMARY

This report provides an update on 20 projects that received Board-approved contributions from the Water Sustainability Innovation Fund (WSIF) and are currently in-progress or have been completed or discontinued since the last update to the designated Standing Committee, in June of 2025.

Projects receiving funding support regional sustainability, protect the environment, advance resilience, and continuously improve service delivery by allowing Metro Vancouver to explore and implement innovative approaches, and respond to emerging issues and evolving best practices. Of the 20 projects mentioned in this report, five have been recently completed, one is on hold, and 14 are in progress, with three of those nearing completion. WSIF projects in progress include the assessment of emerging contaminants; enhancements to water supply monitoring; development of early earthquake warning systems; and modernization of hydrological and hydraulic analytical processes.

PURPOSE

To provide the Water Committee with an update on projects funded by the Water Sustainability Innovation Fund that are currently in progress or that have been completed or discontinued since the last annual update to this Committee.

BACKGROUND

The Sustainability Innovation Fund program (**Reference 1**) supports regional sustainability and drives continuous improvement in the delivery of Metro Vancouver services by supporting projects that reduce emissions, protect the environment, and advance resilience. The Regional District, Water, and Liquid Waste Sustainability Innovation Funds have been in place since October 29, 2004, when the Greater Vancouver Regional District (GVRD), Greater Vancouver Water District (GVWD), and Greater Vancouver Sewerage and Drainage District (GVS&DD) Boards, respectively, approved their creation. In 2014, policies to guide and manage the Sustainability Innovation Funds were adopted by the respective Boards, with amendments in 2016 and 2021. The policies require that the designated Standing Committee be kept updated on the deliverables, outcomes, and measurable benefits of the projects that have received funding. Projects funded wholly or in part by the Sustainability Innovation Fund program have been undertaken by Metro Vancouver in coordination with project partners since 2015.

Annually, Metro Vancouver staff submit applications for project funding, which are approved by the respective Standing Committees and Boards. The amount dispersed from the Sustainability Innovation Funds in any year is at the discretion of the respective Boards and depends on the merit of proposals submitted. Additionally, many projects amplify the financial contributions from the Sustainability

Innovation Fund by leveraging external funding through partnerships, such as with the region's academic institutions.

At its February 21, 2025, meeting, the Metro Vancouver Regional District (MVRD) Board re-affirmed support for the Sustainability Innovation Fund program. The GVWD Board is responsible for overseeing the Water Sustainability Innovation Fund and reviewing/approving funding for projects from the Water Services department. The Water Committee is responsible for reviewing Water Sustainability Innovation Fund applications and making recommendations to the GVWD Board. The Water Committee also receives annual updates on in progress or recently completed projects.

STATUS OF WATER SUSTAINABILITY INNOVATION PROJECTS - 2026 UPDATE

From 2015 to 2025, the Water Sustainability Innovation Fund contributed to a total of 35 projects. Of these projects, 17 have been completed, 14 are in progress, one is on hold, and three have been discontinued. Of the 14 projects that are in progress, three are nearing completion, and are expected to be completed by the end of 2026.

This report provides an update on 20 projects that have received funding and are currently in progress or that have not yet been reported as complete or discontinued.

Updates on other Sustainability Innovation Fund projects are being provided to the relevant Standing Committees.

Table 1 below provides an update on project status and financial information while a detailed update on each of the 20 projects, including a summary of the work, trajectory to completion, project outcomes to date, and impact for the organization/region, can be found in **Attachment 1**.

Table 1. Summary of Water Sustainability Innovation Fund Projects – 2026 Update

Project	Total Funding Approved	Estimated Spent (as of March 31, 2026)	Status
2019 Approval Year			
Treating Emerging Contaminants at the Seymour Capilano Filtration Plant	\$300,000	\$238,000	Nearing Completion
2020 Approval Year			
UV Transmittance Analyzers for Continuous Monitoring of Disinfection By-Products	\$500,000	\$110,000	In Progress
2021 Approval Year			
Building Information Modeling (BIM): Transforming Utilities Information Management	\$800,000	\$566,907	Complete
Microplastics Study in Source Waters and Water Treatment	\$150,000	\$150,000	In Progress
Visual Documentation of Key Water Services Infrastructure (BIM Phase 2)	\$800,000	\$121	In Progress
2022 Approval Year			
10-year Salmon Enhancement Action Plan	\$180,000	\$141,000	Complete
Hydrological Models for the Capilano and Seymour Watersheds	\$750,000	\$372,286	In Progress

2026 Update on Water Sustainability Innovation Fund Projects

Water Committee Regular Meeting Date: July 15, 2026

Page 3 of 4

Project	Total Funding Approved	Estimated Spent (as of March 31, 2026)	Status
Digital Transformation of Water Transmission System Planning & Analysis	\$950,000	\$337,720	In Progress
Feasibility Study to Optimize Transmission System Energy Use	\$350,000	\$0	On Hold
Regional Equity and Affordability of Drinking Water	\$550,000	\$153,000	In Progress
New Technology for the Determination of Enterococci in Recreational Water to Enhance Public Safety	\$200,000	\$193,677	Complete
2023 Approval Year			
Next Generation Snowpack Monitoring – Phase 3	\$450,000	\$331,988	Complete
Studying the Preliminary Feasibility of Green Hydrogen Production from Hydropower at Cleveland Dam (Green Hydrogen Project)	\$250,000	\$260,011	Complete
Evaluation of Biofiltration at the Seymour Capilano Filtration Plant	\$300,000	\$39,915	Nearing Completion*
Reducing Oxygen Use and Increasing Resiliency at the Coquitlam Water Treatment Plant	\$150,000	\$35,720	In Progress
Building the Next Generation of Seasonal Water Supply & Demand Planning	\$550,000	\$104,160	In Progress
2024 Approval Year			
Expansion of the Earthquake Early Warning (EEW) & Structural Health Monitoring (SHM) Systems	\$1,000,000	\$402,633	In Progress
2025 Approval Year			
Integrating Natural Assets into Water Services' Asset Management Program	\$300,000	\$0	In Progress
Evaluating Agricultural Water Demands in the Metro Vancouver Region	\$350,000	\$0	In Progress
Quantifying Climate Change Impact on Dam Safety – A Case Study	\$500,000	\$0	In Progress
TOTAL	\$9,380,000	\$3,015,130	

* Project expected to be complete by the end of 2026

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

The projects summarized in this report received funding from the Water Sustainability Innovation Fund as approved by the GVWD Board between 2019 and 2025. Disbursals of funds were made in accordance with the related Policy that governs the use and management of the Fund. Table 1 above outlines the funding approved and the estimated amount spent to March 31, 2026, for each project.

As of December 31, 2025, the estimated reserve balance of the Water Sustainability Innovation Fund was approximately \$16 million. Of this, approximately \$5.9 million in Board-approved funding is committed to be spent on currently in-progress projects across Water Services. Any unspent funds from completed or discontinued projects are maintained in the Regional District Sustainability Innovation Fund reserve.

OTHER IMPLICATIONS

The Sustainability Innovation Fund program provides support for piloting leading edge technologies at a regional scale. This presents the opportunity for Metro Vancouver to collaborate with member jurisdictions, First Nations, and other government and academic entities to advance shared priorities in sustainability and innovative service delivery. This kind of collaboration allows for certain economies of scale and cross-municipal efficiencies that would not otherwise be possible. Furthermore, the Sustainability Innovation Fund program offers the opportunity to engage meaningfully with First Nations on issues of shared interest, aligning with the *Board Strategic Plan* priority of reconciliation. Taken together, these opportunities allow Metro Vancouver to benefit from improved service delivery and continue to build relationships.

This report does not contemplate the Other Implications of specific Water Sustainability Innovation Fund projects. Those implications are considered when each project is brought forward to the GVWD Board for approval.

CONCLUSION

This report provides an update on 20 projects funded under the Water Sustainability Innovation Fund that are currently in progress or have been completed or discontinued since the last update to the designated Standing Committee. The results and findings from these projects will be used to drive continuous improvement in the delivery of Metro Vancouver's services.

ATTACHMENT

1. "2026 Status Update on Current Water Sustainability Innovation Fund Projects", dated June 30, 2026.

REFERENCE

1. Metro Vancouver. (2026). *Sustainability Innovation Fund*. Retrieved from <https://metrovancover.org/about-us/sustainability-innovation-fund>

June 30, 2026

2026 Status Update on Current Water Sustainability Innovation Fund Projects

2019 APPROVAL YEAR

1. Treating Emerging Contaminants at the Seymour Capilano Filtration Plant

Status: Nearing completion

Years active: 2019 – 2026

Overview

This project utilizes consulting engineering services to assess and study current and future emerging contaminants at the Seymour Capilano Filtration Plant (SCFP) over two project phases.

In Phase 1, a desktop literature survey was conducted to develop a comprehensive understanding of potential future contaminants in source water, assess existing treatment processes, and evaluate best practices for managing contaminants of emerging concern.

Phase 2 was initially proposed to include pilot testing on a selection of the highest-risk contaminants. However, it was subsequently revised to focus on the development of conceptual designs for treatment options including associated cost estimates.

Outcomes to Date

- Phase 1 was completed in the first quarter of 2023, with two successful workshops and final technical memorandums on the literature survey and treatability assessment. These reports assessed the risks of different emerging contaminants on treatment operations at the SCFP, and to source and drinking water quality. The assessments helped determine the SCFP's ability to treat the highest-risk contaminants, mainly those from natural watershed disturbances.
- The recommendations from Phase 1 include potential facility improvements, operational enhancements, and capital improvements to manage these risks with several treatment strategies.
- Phase 2 began in early 2024 with a revised scope and was completed in the first quarter of 2026, with two technical memorandums on recommended treatment strategies and options for SCFP, one technical workshop held in May 2025 to help select treatment options and proposed facility improvements, and a final sealed report submitted to Metro Vancouver.
- In Phase 1, emerging contaminants in SCFP raw water were evaluated across multiple categories, including taste and odour compounds. Based on historical raw water chemistry and watershed data, these compounds were assessed as posing relatively low risk compared to other contaminant groups.
- However, elevated levels of certain taste and odour compounds were observed at the Seymour source in October 2025, resulting in public complaints and prompting a coordinated operational and communications response.
- Given that taste and odour compounds were already within the scope of the study, a high-level review of potential treatment options is being considered as a natural extension of the existing project and is seen as both relevant and aligned with the original project objectives.

The intent is to build on the study's technical findings and framework to further evaluate mitigation approaches.

Next Steps

Phase 1 and Phase 2 were successfully completed in the first quarters of 2023 and 2026, respectively. A related scope of work stemming from the Phase 2 results are currently being explored. Internal discussions are underway to determine whether this additional scope will proceed or if the project can be formally closed, with a decision expected by end of 2026.

2020 APPROVAL YEAR

1. UV Transmittance Analyzers for Continuous Monitoring of Disinfection By-Products

Status: In Progress

Years active: 2020 – 2026

Overview

Through consulting engineering services, this two-phase project evaluates and utilizes multi-spectrum UV visible analyzers for continuous monitoring of disinfection by-products (DBPs) at the Coquitlam Water Treatment Plant (CWTP) and, if needed, at various locations in the transmission system.

Phase 1 includes a literature survey and desktop analysis of the data collected over a one-year period. Data collected using UV visible analyzers is expected to support the implementation of DBP prediction models, enabling optimization of sodium hypochlorite and ozone dosing at CWTP and thereby minimizing the formation of DBPs in the drinking water transmission system.

Outcomes to Date

- The consultant completed the evaluation of the multi-spectrum UV visible analyzers, and an instrument was selected, procured, and installed at the CWTP in the second quarter of 2023.
- The project team reviewed the original scope and deliverables and updated the original data collection and implementation plan, which was executed with continuous monitoring and testing from end of 2023 through 2025.
- Three technical memorandums were completed including the literature review, equipment evaluation, and preliminary data review, and a workshop was held in March 2025 to outline the results and findings.
- The Phase 1 final report was submitted, marking the completion of Phase 1 in the first quarter of 2026.

Next Steps

Phase 1 of the project was completed in early 2026. Next step is to hold discussions with Water Services Operations and Maintenance staff to assess whether there is organizational benefit in pursuing further studies on this topic.

2021 APPROVAL YEAR

1. Building Information Modeling (BIM): Transforming Utilities Information Management

Status: Complete

Years active: 2021 – 2025

Overview

‘Building Information Modeling (BIM) is the process of designing, constructing or operating a building or infrastructure assets using object-oriented design.’ (British Standards Institute, 2013) This project explores and advances the potential of BIM for Metro Vancouver utilities, including Water Services, Liquid Waste Services, Project Delivery, and Corporate Services, using consulting engineering services. An earlier review of BIM and its benefits for utilities showed tangible efficiencies and cost reductions over the long term. The project will be completed in three phases, each stage-gated for review and approval through separate SIF applications.

The three-phased BIM initiative is a transformative digital data journey for the utilities that started in 2021. Phase 1, BIM: Transforming Utilities Information Management, introduces BIM standards and associated tools and training (capacity building) for Metro Vancouver vertical infrastructure projects.

Phase 2, Visual Documentation of Key Water Services Infrastructure, builds the BIM data management platform and enables the utilization of BIM standards and tools in-house throughout the project lifecycle, including effecting proper exchange and review of 3D models with consultants engaged on the delivery of infrastructure projects.

The final Phase 3 project, yet to be fully scoped and approved, pilots a Digital Twin environment that explores integration with Enterprise Asset Management (EAM), GIS and other corporate systems to optimize infrastructure management, including planning, performance benchmarking, asset management, and business intelligence.

Outcomes to Date

- Consulting engineering services for Phase 1 were procured in 2021.
- Standards and process development and adoption are complete.
- Initial training of Metro Vancouver staff on the use of BIM tools was completed.
- Consulting community awareness on new standards and processes was also completed.
- Project teams have already started utilizing these new Metro Vancouver BIM standards for major projects such as the Northwest Langley and Iona Island Wastewater Treatment Plant Upgrades projects.

Next Steps

Phase 1 was completed in early 2025. Phase 2 will build on the BIM Phase 1 project and will be completed under the Visual Documentation of Key Water Services Infrastructure project (WSIF 2021), which had been put on hold until Phase 1 was complete.

2. Visual Documentation of Key Water Services Infrastructure

Status: In progress (On Hold 2021 -2025)

Years active: 2021 – Present

Overview

This project aims to create a pilot visual database, a Building Information Model (BIM) Common Data Environment (CDE), capable of hosting critical components of Metro Vancouver's drinking water infrastructure. These hosted models of the infrastructure are used to improve access to information, support better decision-making, and enhance service delivery across the region.

The CDE, together with companion laser scanning tools, offers a range of potential benefits by enabling the creation and hosting of 3D virtual models of both existing and proposed infrastructure, including:

- 360° site walk-throughs that allow for remote management and visualization;
- Measurable 2D and 3D images that document existing conditions; and
- Accurate and representative floorplans of scanned infrastructure.

By establishing the CDE, this project aims to enhance organizational capabilities, including providing access to visual tools that support collaboration during projects and maintenance activities, enabling remote access to facility information, and expanding in-house capacity to conduct laser scanning of existing facilities.

An accurate inventory of Metro Vancouver's infrastructure is crucial for effective asset management and informed decision-making related to future development.

Outcomes to Date

- This project was contingent on the development of BIM standards and supporting infrastructure from the BIM: Transforming Utilities Information Management Phase 1 (WSIF 2021) project. The starting date was deferred to ensure strategic alignment and value, and to avoid duplication and rework.
- With the required elements now in place from the completion of the BIM: Transforming Utilities Information Management Phase 1 (WSIF 2021) project, work for this project will now proceed to implement the elements required to build the 3D environment.
- This project is now considered Phase 2 of the larger BIM initiative. Phase 2 requirements have been reviewed, and the project scope has been recast to fit the framework that has been built through Phase 1, in alignment with the new BIM standards.

Next Steps

The target completion timeline for this project is by mid-2028.

3. Microplastics Study in Source Waters and Water Treatment

Status: In progress

Years active: 2021 – Present

Overview

This study was originally proposed to evaluate the presence and concentration of microplastics in Metro Vancouver's source water reservoirs (Capilano, Seymour, and Coquitlam), treatment residuals from the Seymour Capilano Filtration Plant (SCFP), and within the water treatment process at both SCFP and the

Coquitlam Water Treatment Plant (CWTP); however, the project scope has been revised several times as new research and regulatory information around microplastics testing became available. In addition, the [WSIF 2019] project “*Treating Emerging Contaminants at the Seymour Capilano Filtration Plant*” did not identify microplastics as a concern for Metro Vancouver.

Since 2021, sampling and testing methodologies and polymer characterization technologies have reached an acceptable standard across this developing field of research. Due to potential sensitivity, evolving practices, and limited industry expertise in this area, Metro Vancouver has opted to participate in a tailored collaboration with three other utilities through the Water Research Foundation, led by a subject matter expert who will provide advisory and scientific support to the project team. The project will focus most of its investigation on the prevalence of microplastics in distribution systems and will include raw and treated water sampling. This work could potentially inform standard and regulatory development in years to come.

Outcomes to Date

- A tailored collaboration proposal was successful with the Water Research Foundation by end of 2024.
- An agreement with the Water Research Foundation was executed and the study started in the third quarter of 2025.
- Three other North American utilities with varying drinking water sources and treatment systems are participating. With protected water supply areas, the expectation is that Metro Vancouver’s system will provide reliable baseline results that can be compared to the findings from other systems.
- The tailored collaboration project will leverage close to US \$200,000 of external funding and utilize innovative and leading-edge research, methods, and subject expertise from the University of Toronto Drinking Water Research Group.

Next Steps

Sampling in the Metro Vancouver region will likely take place in early 2027. The outcomes will provide valuable information for Metro Vancouver to make critical decisions in the future with the strategic and operational goal of ensuring a reliable and safe drinking water supply. The project is expected to conclude by end of 2027.

2022 APPROVAL YEAR

1. 10-year Salmon Enhancement Action Plan

Status: Complete

Years Active: 2022 – 2026

Overview

The project scope involves developing a 10-year Salmon Enhancement Action Plan for Metro Vancouver, intended to provide a consolidated and strategic list of potential salmon enhancement activities. These initiatives are identified to maximize salmon populations and increase salmon viability, particularly in areas influenced by Metro Vancouver operations, as opportunities allowed.

A foundational component of the project is the early and ongoing involvement of First Nations ensuring that their perspectives, knowledge, and priorities help shape the scope and direction of the plan. Engagement with Metro Vancouver member jurisdictions and salmon-focused agencies and organizations throughout the process is also intended to support a coordinated and informed approach to salmon enhancement.

Outcomes to Date

- Engagement workshops with First Nations, member municipalities and salmon-focused organizations were completed.
- The consultant team, with assistance from internal project team members, compiled workshop results and categorized the input broadly into areas within and outside of Metro Vancouver's scope of operations.
- Project deliverables and scope were reduced to meet budget constraints.
- A project summary memorandum, accompanied by in-scope and out-of-scope opportunities, was circulated to Metro Vancouver staff as a resource to support the integration of salmon enhancement and restoration opportunities and considerations into future capital project planning.
- The final report is complete, marking the completion of the SIF project in June 2026.

Next Steps

This project concluded in June 2026.

2. Hydrological Models for the Capilano and Seymour Watersheds

Status: In progress

Years active: 2022 – Present

Overview

This project utilizes specialized consulting engineering services and embraces the latest advances in data science and model development to build and calibrate integrated, in-house hydrological models for Metro Vancouver's watersheds, supporting improved management of this valuable water resource.

These models help predict reservoir inflows, generate forecasts using real-time data, support source water supply planning, monitor long-term climate change scenarios, and inform key decision-making related to watershed management. They also enhance productivity and efficiency of watershed management and hydrological analysis by bringing together key functions related to how water is generated, moves through the watershed, and is managed—such as precipitation, snowmelt, reservoir operations, forecasting, and reporting—into a unified framework.

This project initially focused on the Capilano and Seymour water supply areas; however, the scope was subsequently expanded to include the Coquitlam watershed.

Outcomes to Date

- The Coquitlam water supply area has been added to the scope within the approved budget, and a Non-Disclosure Agreement was executed with BC Hydro to share their reservoir operation data.
- The selected modelling software was used for building the semi-distributed hydrological models (models that balance simplicity and detail by grouping similar areas within a watershed) for the three watersheds. Model calibration and validation is done.
- A total of three hydrological models were developed for each of the three Metro Vancouver watersheds.
- The consultant has provided technical memorandums with climate change-induced future flows using the updated models for reservoir inflows, forecasting up to and including 2055 and 2085.

- A hydrological advisor was retained to provide guidance on developing an inflow forecasting model for Capilano and the Seymour reservoirs using these new hydrological models and specialized software.
- The project is also investigating how to integrate BC Hydro's existing forecasting model for the Coquitlam watershed with these new models to establish a unified forecasting platform. Alternatively, forecasted volumes from the Coquitlam Reservoir could be added to the MV's forecast model.
- A total of four technical sessions on "Methodology for Inflow Forecasting System Development" with Metro Vancouver Water Services staff were held in the first half of 2026, to identify the best options for Metro Vancouver.

Next Steps

The project will continue to update the hydrological models for all three Metro Vancouver water supply areas, after which they will be integrated with the existing 1D- hydraulic models. Then, the hydrologic and hydraulic models will be integrated in the Inflow-Outflow forecasting platform (via MIKE OPERATION software) in early 2027. A technical workshop on "Inflow Forecasting System Development" is planned to inform MV management about the proposed methodology and forecasting objectives by end of 2026.

3. Digital Transformation of Water Transmission System Planning & Analysis

Status: In progress

Years active: 2022 – Present

Overview

This project aims to develop an up-to-date water transmission model using the newly adopted InfoWater Pro software. It will address deficiencies in existing models and ensure the new model meets and exceeds current industry standards for infrastructure planning and operational decision support.

This project is broken into two parts, each delivering critical components needed to establish the Smart Water Network, a digitally enabled, data-driven water system that combines hydraulic modelling, real-time monitoring, and analytics to support smarter planning and operations:

- Phase 1 – development of an up-to-date regional water transmission model in InfoWater Pro
- Phase 2 – deployment of a Data Analysis Platform (DAP) to integrate historical and live data with the new modelling software, enabling time-series data visualization and aggregation, current and predictive analyses, and the development of dashboards, KPIs, and real-time alerts.

Enabling the water model to access and process real-time data will substantially improve the accuracy of modelled predictions under varying future scenarios, resulting in process excellence, risk reduction, and informed decision-making in Metro Vancouver's water planning, operations, and maintenance teams on a daily, mid-term, and long-term basis.

Outcomes to Date

- The consultant completed Phase 1 in the first quarter of 2025, including the development of the Regional Water Transmission Model with steady state and extended period simulation calibration and delivery of the final report for Phase 1.
- Three training sessions on the transmission model have been completed.

- Phase 1 outcomes will inform the Digital Twinning model development. At the same time, it will inform the *Feasibility Study to Optimize Transmission System Energy Use* project (WSIF 2022) that is currently on hold.

Next Steps

A review will be completed to determine whether sufficient instrumentation is in place to support digital twinning of the transmission system. The findings will inform any additional instrumentation requirements, as well as the expected timelines for Phase 2 of the project.

In Phase 2, a DAP will be deployed and integrated with the transmission model developed in Phase 1. Pending the results of the review, Phase 2 is anticipated to extend through 2027, with subsequent digital twin development commencing in 2028.

4. Feasibility Study to Optimize Transmission System Energy Use

Status: On hold

Years Active: 2022

Overview

Consultant engineering services are required for this two-phased project. Phase 1 will investigate options to reduce Metro Vancouver's electricity purchases from BC Hydro and overall energy consumption by optimizing the water transmission system operations. Phase 2 will examine alternative, lower-carbon energy sources to power high-energy-demand operations and develop the business case for implementing these innovative solutions.

This project is currently on hold and will resume once sufficient progress has been made on the *Digital Transformation of Water Transmission System Planning & Analysis project* (WSIF 2022), including completion of the water transmission model. The scope of services will be reassessed when the project resumes to ensure the most current and relevant information is incorporated to achieve the project objectives.

Outcomes to Date

On Hold

Next Steps

On Hold

5. Regional Equity and Affordability of Drinking Water

Status: In progress

Years active: 2022 – Present

Overview

This project supports the goal of ensuring that the regional drinking water supply remains sustainable, equitable, and affordable amid the challenges of rising utility and household costs, post-pandemic recovery, and ongoing climate and demographic changes.

The project aims to identify opportunities to enhance the local affordability and equity of drinking water services.

Outcomes to Date

- A consultant was engaged to carry out an environmental scan and provide recommendations for further consideration in scope development. This work was completed in December 2023.
- Based on these recommendations, as well as direct requests from the Regional Engineers Advisory Committee – Water Sub-Committee (REAC WSC) members, the *Member Water Rate Structure Affordability Study* has been undertaken to investigate the following:
 - Existing retail water rate structures, policies, and processes; water billing and collection efficacy; affordability practices and policies; income-related demographic and household data; and identification of common issues, trends, gaps, and areas for improvement.
 - Issues related to water equity and/or affordability at the member level, including whether an assistance policy or program is needed for low- and fixed-income households.
 - Case studies of similar jurisdictions with established affordability programs to identify best practices, lessons learned, and potential affordability programs for further consideration by members.
- The *Member Water Rate Structure Affordability Study* was completed in June 2026, marked by a presentation of findings to participating members of the study and distribution of the final study report to all members at advisory committee level.
- A *Regional Water Rate Structure Evaluation* will also be undertaken to explore different rate structures that may be feasible within the Metro Vancouver regional context. Scoping and development of this study is expected to begin in fall of 2026.

Next Steps

The *Regional Water Rate Structure Evaluation* study is currently in the scoping stage and is expected to commence in fall of 2026. Based on the evaluation findings, further studies or engagement activities may be required.

6. New Technology for the Determination of Enterococci in Recreational Water to Enhance Public Safety

Status: Complete

Years active: 2022 – 2026

Overview

This project was initially titled *New Technology for the Determination of E. coli in Recreational Water to Enhance Public Safety*.

Following the release of the 2022 draft Health Canada *Guidelines for Canadian Recreational Water Quality*, which now include the qPCR method for enterococci, the project focus shifted to method development for enterococci rather than *Escherichia coli* (*E. coli*) as was originally planned. Accordingly, the project title has been amended to *New Technology for the Determination of Enterococci in Recreational Water to Enhance Public Safety*.

Outcomes to Date

- The British Columbia Centre for Disease Control (BCCDC) was sole sourced to evaluate, test, verify, and optimize the new molecular testing methods.
- The BCCDC completed the literature review, detailed method development, and method optimization studies.

- A sampling and analysis plan was developed for 2024, and trials were completed between April and September.
- The project was staged over two years and the BCCDC provided a final report in April 2026, marking the project's completion.

Next Steps

The project was completed in the second quarter of 2026.

2023 APPROVAL YEAR

1. Next Generation Snowpack Monitoring – Phase 3

Status: Complete

Years active: 2023 – 2025

Overview

The goal of this project was to implement the tools and analytical methods developed during the completed research and development phases of the *Next Generation Snowpack Monitoring* project (Phases 1 and 2, completed in 2021 and 2023 respectively). In this third phase, LiDAR-derived snow depth and snow water equivalent (SWE) products are produced within one week of data acquisition. These products will be used to guide operational water supply planning.

Outcomes to Date

- Three LiDAR snow surveys were completed in 2023 in the Seymour watershed.
- Three LiDAR snow surveys were completed in 2024 and in 2025, covering the Capilano and Seymour Watersheds.
- A LiDAR-drone survey of the Loch Lomond basin in the Seymour watershed has been completed.
- A three-year contract with a consultant was signed for 2023 to 2026 for satellite snow monitoring. These products are being used operationally and are incorporated into snow survey reports.
- New snow sensors have been installed at weather stations to provide real-time data and validate remote sensing data.

This project used an innovative and comprehensive approach to snowpack monitoring in the water supply areas. It also improved the understanding of snowpack distribution and melt timing in the WSAs. Data generated from the project was used to enhance snow survey reporting, and long-range streamflow predictions. Some of the products developed during this project are now used operationally and Phase 3 is now complete.

Next Steps

Additional LiDAR snow surveys have been completed in 2026 to supplement snowpack monitoring during an exceptionally low snowpack year. These surveys are covered by operational budgets.

2. Studying the Preliminary Feasibility of Green Hydrogen Production from Hydropower at Cleveland Dam (Green Hydrogen Project)

Status: Complete

Years active: 2023 – 2026

Overview

In 2021, an options analysis was completed for the *Cleveland Dam Downstream Fish Passage and Hydropower Project* (CLD Project 2021). This analysis examined potential hydropower generation and downstream fish passage options at Cleveland Dam (CLD), with the objective of improving downstream fish passage from Capilano Reservoir to Capilano River. The study did not identify a fiscally responsible end use for hydropower and the potential sale of power to BC Hydro was only considered after 2030.

The Green Hydrogen Project is a preliminary feasibility study of green hydrogen production using hydropower at Cleveland Dam. It investigates the production of hydrogen and oxygen via electrolysis at CLD using hydropower and explores their market potential in the region. It also includes a business case assessment to help determine whether green hydrogen production can improve the business case for hydropower generation and downstream fish passage.

Metro Vancouver will further its understanding of the potential sustainable end uses for hydropower power that can be produced at the CLD through this project.

Outcomes to Date

- Procurement of a consultant was completed and the project commenced in early 2024.
- Three detailed technical memorandums were completed:
 - Green Hydrogen Literature Review, Resource Mapping and Market Scan
 - Green Hydrogen Production and Distribution Options and Pathway Analysis
 - Benefits, Challenges, Triple Bottom Line, & Costing Analysis
- The final summary report was received in April 2026, marking the completion of the Green Hydrogen Project.

Next Steps

The project was completed in April 2026.

3. Evaluation of Biofiltration at the Seymour Capilano Filtration Plant

Status: Nearing Completion

Years active: 2023 – Present

Overview

This project evaluates the implementation of biofiltration at Seymour Capilano Filtration Plant (SCFP) through desktop reviews and a full-scale biofiltration demonstration study. Biofiltration has the potential to provide multiple benefits to drinking water treatment, including improved finished drinking water quality, filter operation, and chlorine residual stability, as well as reduced chemical costs and distribution flushing requirements.

The project will be delivered in two stage-gated phases. Phase 1 evaluates the feasibility of biofiltration and test planning, and Phase 2 implements a full-scale demonstration trial at the plant, contingent on Phase 1 confirming sufficient overall benefits to proceed.

Outcomes to Date

- A subject matter expert identified by the Water Research Foundation has been contracted to provide research and scientific advisory support during the project. The expert has recent relevant experience in introducing biofiltration at a fully operational plant.
- Phase 1 feasibility work is nearing completion, including site visit data collection and desktop assessment. A draft feasibility report has been prepared and reviewed internally, with feedback provided by Operations and Maintenance (O&M).
- Based on current findings, O&M has identified limited benefits in proceeding to full scale or pilot testing.

Next Steps

The consultant will revise and finalize the feasibility report based on internal feedback. Based on current findings and O&M input, staff propose to close the project following completion of the report rather than proceeding to Phase 2 demonstration testing.

Major stakeholders and subject matter experts will reconvene after the final Phase 1 report is issued to discuss path forward. The project is expected to be completed by end of 2026 with recommendations provided either for or against long-term implementation of biofiltration at the SCFP.

4. Reducing Oxygen Use and Increasing Resiliency at the Coquitlam Water Treatment Plant

Status: In Progress

Years active: 2023 – Present

Overview

This project evaluates the application of on-site oxygen generation and oxygen recovery systems and considers their optimal implementation at the Coquitlam Water Treatment Plant (CWTP). These commercially available technologies have the potential to reduce reliance on cross-border oxygen suppliers by enabling on-site oxygen generation and increasing recovery and reuse of oxygen within the treatment process.

Potential benefits include increased system resilience, reduced chemical consumption and operating costs, lower transportation-related emissions, and mitigation of supply chain vulnerabilities.

Outcomes to Date

- A consultant has been engaged, and a design-basis memorandum has been completed.
- A final draft report is expected by mid-2026.

Next Steps

The consultant will proceed with a detailed analysis and technical feasibility assessment of the selected and recommended option and prepare a technical memorandum. The study will consider technology maturity, effectiveness, operational complexity, life cycle costs (including ongoing maintenance), and the anticipated payback period based on high-level cost estimates.

The project is expected to be completed by early 2027.

5. Building the Next Generation of Seasonal Water Supply & Demand Planning

Status: In Progress

Years active: 2023 – Present

Overview

This project intends to update the tools used to manage the seasonal drinking water supply and develop tools to improve communication with the public on the status of the water supply during the high-demand season. Consultant engineering services are required for this two-phased project.

Phase 1 aims to update Metro Vancouver's Decision Support System (DSS) Model to align with current industry standards. The current Excel-based DSS Model is used to plan the management of the drinking water supply through the annual high demand period (May 1 and October 15). The updated model is expected to improve this process using modern modelling software, together with new reservoir inflow and seasonal demand projection models.

Phase 2 of the project focuses on the development of a Drinking Water Stress Index (DWSI) based on outputs from the updated DSS model from Phase 1. The DWSI is intended to inform member jurisdictions and the public of the water supply condition throughout the high-demand period through a public-facing webpage on the Metro Vancouver website. The DWSI will also support transparent decision-making for Drinking Water Conservation Plan (DWCP) water restrictions and enhance their implementation.

Outcomes to Date

- Phase 1: Updating the DSS model
 - A project charter has been drafted for review and approval.
 - Extensive research work was completed to develop the project scope of work.
- Phase 2: Creation of DWSI
 - Metro Vancouver's Reservoir Levels and Water Use webpage was launched in May 2025. The webpage lays the groundwork for the ultimate DWSI dashboard and public interface.
 - Audience research testing on the webpage was conducted in early 2026 and the consultant report was submitted in April 2026.

Next Steps

- Phase 1: Updating the DSS model
 - Procurement of a consultant for software selection is expected in fall of 2026.
 - Procurement of a consultant to develop a seasonal demand model is expected in late 2026.
- Phase 2: Creation of a DWSI
 - The dashboard design will be reviewed and updated in late 2026 based on audience research testing results.

2024 APPROVAL YEAR

1. Expansion of the Earthquake Early Warning (EEW) & Structural Health Monitoring (SHM) Systems

Status: In Progress

Years active: 2024 – Present

Overview

Building on the success of the “*Earthquake Early Warning (EEW) and Structural Health Monitoring (SHM) Pilot*” project (WSIF 2020), this expansion project aims to complete regional coverage of the EEW sensor network. It enhances early warning capabilities, enables automated, EEW-generated earthquake damage mitigation actions at additional critical water facilities, and includes the addition of SHM sensors at the Coquitlam Water Treatment Plant (CWTP) and the Lake City Operations Centre (LCOC) to enable immediate post-earthquake damage assessment at these sites.

The benefits of an expanded system include increasing staff safety and allowing some automated actions to reduce water loss and mitigate damage. Overall, the expanded and more reliable EEW system strengthens the resiliency of the water supply system.

Outcomes to Date

- Planning for the work was completed by mid-2024 and the supporting vendor contract was set up at the end of 2024.
- The implementation of the expansion system is progressing well and the SHM sensors at CWTP and LCOC are in place and undergoing testing.

Next Steps

The project is underway and is on track for final commissioning in early 2027.

2025 APPROVAL YEAR

1. Integrating Natural Assets into Water Services’ Asset Management Program

Status: In Progress

Years active: 2025 - Present

Overview

Natural assets provide a range of ecosystem services such as supporting drinking water quality, protecting and maintaining regional environmental health, enhancing climate resiliency, and contributing to overall livability. This project aims to advance natural asset management in the Metro Vancouver region by integrating the natural assets in the Capilano, Seymour, and Coquitlam Water Supply Areas and Lower Seymour Conservation Reserve into the existing Water Services’ Asset Management Program.

Key components of this project will be executed in three phases.

- Phase 1: create an inventory of natural assets within the water supply areas and conduct condition and risk assessments.
- Phase 2: complete an economic valuation of the priority ecosystem services provided to the region by these natural assets.
- Phase 3: apply the information obtained from Phases 1 and 2 to operationalize natural assets management within Water Services’ Asset Management Program.

The overarching goal is to support the protection and long-term sustainability of these assets. This work contributes to the growing body of knowledge on natural asset management, with a specific focus on drinking water utilities, and will build upon and model similar ongoing initiatives led by Regional Parks.

Outcomes to Date

- Project scoping completed (December 2025)
- Project procurement completed (April 2026)
- Project kick-off meeting (May 2026)

Next Steps

Phase 1 of the project began in May 2026 and is scheduled for completion by October 2026. The project is on track for completion of all three phases by the end of 2027.

2. Evaluating Agricultural Water Demands in the Metro Vancouver Region

Status: In Progress

Years active: 2025 - Present

Overview

This project aims to improve understanding of the potential impacts of the agricultural sector on drinking water demand, recognizing its susceptibility to external pressures such as climate change, policy shifts, and regulatory changes. This work will support the regional water utility's long-term planning by examining current and projected future water demands of this important sector. It also contributes to the Regional District's efforts to foster a sustainable agricultural industry facing ongoing water insecurity.

The project investigates the potential changes in agricultural water supply and demand, how those changes may influence water use decisions, and the potential cascading impacts on drinking water demand. The project also aims to identify water quality requirements and research opportunities to explore alternative water sources for the sector, aligning with the objectives of the *Non-Potable Water Use Project* (WSIF 2020) completed in 2023. This work informs potential future assessments that support reduced reliance on drinking water for agricultural purposes.

Partnering and collaborating stakeholders include the province, representatives from the agricultural sector, and member jurisdictions with significant agricultural areas.

Outcomes to Date

- Development of the project scope was completed in early 2026, in collaboration with Regional Planning.
- Procurement of consulting services commenced by mid-2026.

Next Steps

Procurement is underway, with the consultant anticipated to be onboard by July 2026. The full scope of work and associated deliverables are expected to extend into 2028.

3. Quantifying Climate Change Impact on Dam Safety – A Case Study

Status: In Progress

Years active: 2025 - Present

Overview

This project aims to help address the vulnerability of Metro Vancouver's dams and diversion structures to climate change impacts and to fill gaps in regulatory and engineering practices by developing a framework and methodology to quantifiably assess these projected impacts on dam safety.

The study considers extreme conditions, projections, and operational factors, moving beyond conventional methods that rely primarily on historical data and baseline regulatory compliance. The project integrates climate projections into dam safety assessments and supports the development of proactive adaptation strategies that protect public safety, secure reliable access to clean water, and safeguard environmental and cultural values.

This forward-looking approach aligns with regional sustainability goals by reducing risks, optimizing resource management, and enhancing the region's capacity to respond to future climate uncertainties.

Outcomes to Date

- Proposals have been received and a preferred proponent has been identified. The project is currently progressing through the procurement process.

Next Steps

Procurement is underway, with the consultant anticipated to be onboard by July 2026. The full scope of work and associated deliverables are expected to extend into 2027.

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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Water Committee

From: Matthew Dybwad, Division Manager, Water Services Engineering, Design & Construction
Ben Suleiman, Lead Senior Engineer, Engineering, Design & Construction, Water Services

Date: July 6, 2026 Meeting Date: July 15, 2026

Subject: **Kennedy Newton Water Main and Newton Pump Station Replacement**

RECOMMENDATION

THAT the Water Committee receive for information the report dated July 6, 2026, titled “Kennedy Newton Water Main and Newton Pump Station Replacement”.

EXECUTIVE SUMMARY

The Kennedy Newton Water Main and Newton Pump Station Replacement projects are key components of the Greater Vancouver Water District’s long-term strategy to increase resiliency and transmission system capacity to deliver high-quality drinking water to the growing population south of the Fraser River. The projects have attained significant milestones over the past year with completion of pipe installation on the Kennedy Newton Main and commencement of construction of the Newton Pump Station.

Water Services undertook careful project planning, early stakeholder and community engagement, and pre-vetted well-qualified consultants and contractors to implement these significant water infrastructure projects. This has resulted in a program that has been delivered a significant upgrade to our drinking water system, while mitigating impacts to the public.

PURPOSE

To inform the Water Committee of the key milestones attained on the Kennedy Newton Water Main and Newton Pump Station Replacement projects and the collaborative implementation process used to mitigate impacts on the community.

BACKGROUND

The existing Surrey Hickleton Main supplies water to the Newton Reservoir and the existing Newton Pump Station. Both the existing water main and the pump station are reaching the end of their design life and are vulnerable to seismic events. New infrastructure is required to replace them and reliably meet the growing water demand south of the Fraser River.

Planning for the projects started in 2014 and construction was implemented in multiple phases. This phased approach minimizes impacts on residents and businesses, addresses capacity constraints within the local construction industry, and promotes participation in the procurement process.

The Kennedy Newton Main is a significant upgrade to the transmission system in the City of Surrey and includes 9 kilometres of 1.8 metre-diameter steel water main between the Kennedy and Newton Reservoirs. Over the past year, the project has hit a significant milestone with the installation of all the water main now complete. The team will be working over the next year to complete chamber installations and coordinate the commissioning of the new water main.

Construction of the Newton Pump Station Replacement is well underway with the installation of two new reservoir outlets completed between 2022 and 2024. In the summer of 2025, the project achieved a key milestone with the commencement of construction of the new pump station. This work is expected to be complete by fall 2028, which will be followed up with system testing, tie-ins and commissioning.

Planning for Success

Detailed design of the two projects started in 2017 with the design services for the Kennedy Newton Water Main provided by Jacobs, and the design services for the Newton Pump Station Replacement provided by WSP. Metro Vancouver and the consultant engineers worked closely with staff from the Cities of Surrey and Delta to select the best water main alignment and pump station location to reduce overall impacts on residents, businesses and commuters.

Contractor Pre-qualification Process

Prior to initiating construction procurement, the project team executed a pre-qualification process to select only the most qualified contractors to submit a proposal. This process evaluated the expertise and references of interested contractors to establish a shortlist of qualified bidders. The contractors who were awarded the projects had significant experience working on similar large, regional infrastructure projects in urban settings and had a proven track record of successfully implementing community impact mitigation measures.

Agency Collaboration and Public Engagement

Metro Vancouver worked with the Cities of Surrey and Delta staff, local residents, businesses, and community organizations to research and understand potential construction impacts, and to develop construction impact mitigation measures. These potential impacts include traffic, noise, vibration, dust, parking and access. Feedback received through community engagement was integrated directly into the construction contracts in the form of required mitigation measures. A multi-tiered community engagement approach was successfully implemented, including project webpage, newsletters, social media, traffic advisories and signage.

A strong example of coordination between Metro Vancouver, municipalities, and other agencies was the successful installation of the Kennedy Newton Water Main – Scott Road Section. The work required scheduling and coordination with the Cities of Surrey and Delta, and TransLink, which aligned its R6 Scott Road RapidBus upgrades with Metro Vancouver's project. Located on a busy arterial route—including a critical crossing of Nordel Way—the project faced strict timelines and traffic management constraints. The Nordel Way crossing was completed within a three-week window during the summer months while maintaining traffic flow. To support timely delivery, Metro Vancouver included incentive and penalty clauses in the contract. The project was ultimately completed on budget, ahead of schedule, and with minimal disruption—demonstrating the value of strong communication and collaboration among stakeholders.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

This is an information report. No financial implications are presented.

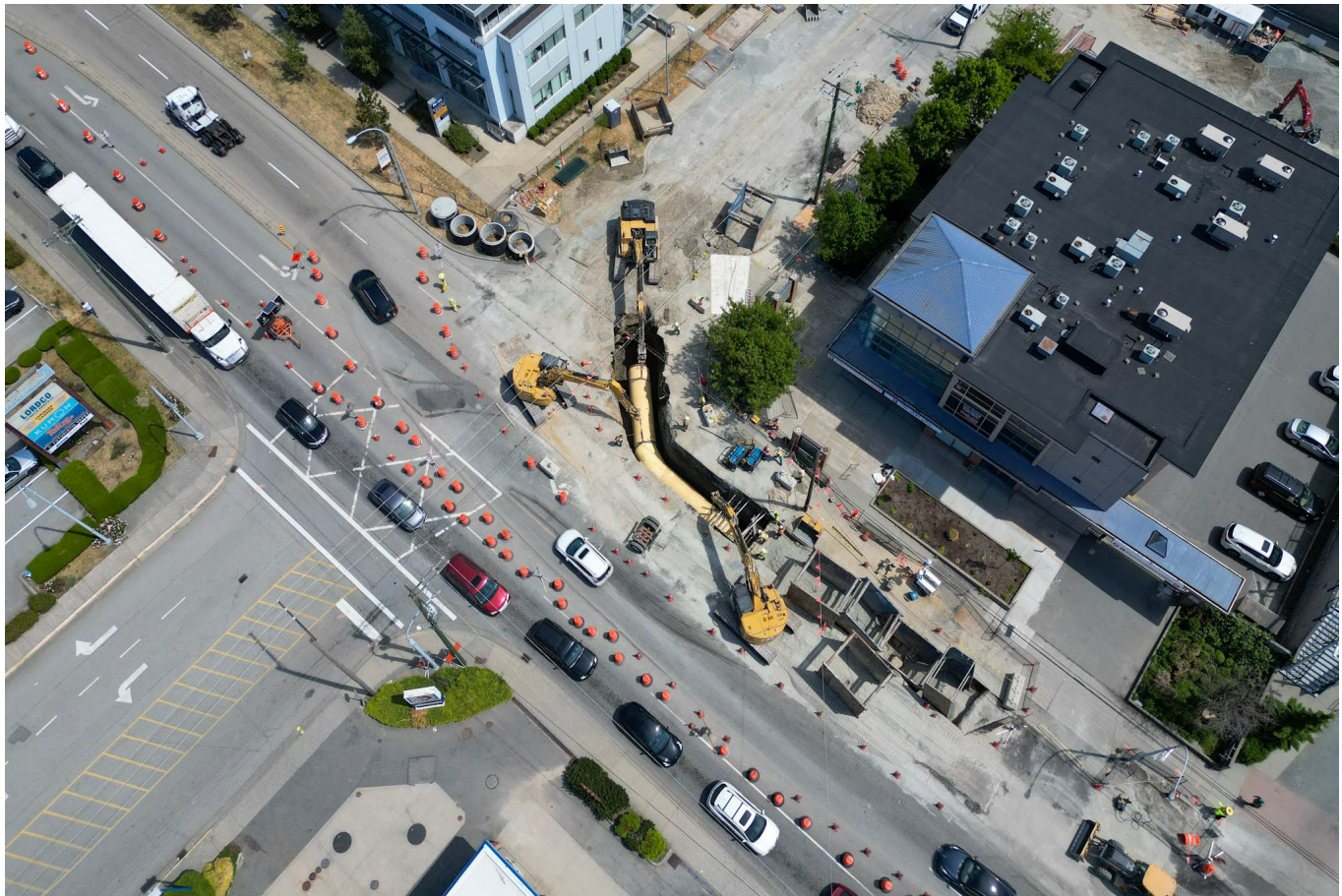
CONCLUSION

Metro Vancouver has successfully achieved key milestones in the delivery of the Kennedy Newton Water Main and Newton Pump Station Replacement projects. The successful execution of these projects illustrates the importance of careful project planning, early stakeholder and community engagement, and the value of hiring well-qualified consultants and contractors to implement these significant water infrastructure projects.

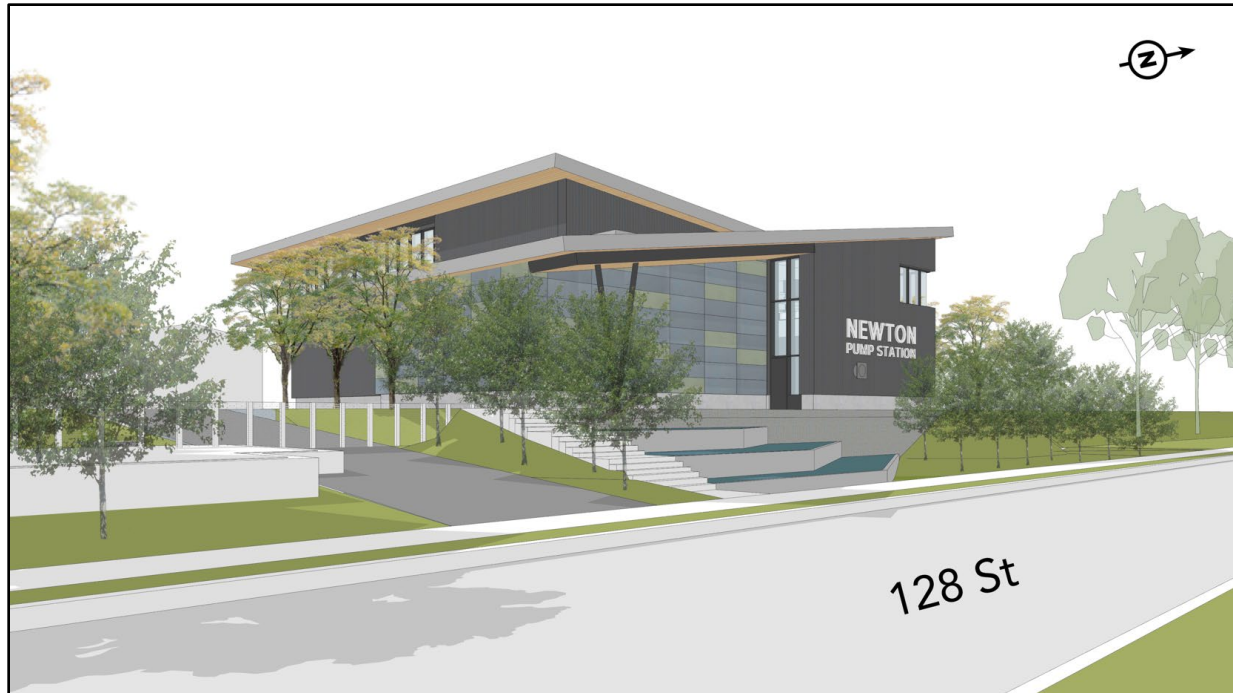
ATTACHMENTS

1. Graphic 1: Kennedy Newton Water Main – Full Alignment Map
Photo 1: Pipe Installation on Scott Road Section, June 2023
2. Graphic 2: Newton Pump Station Replacement Rendering
Photo 2: Excavation for the Newton Pump Station Replacement, November 2025

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Pipe Installation on Scott Road Section, June 2023



Newton Pump Station Replacement Rendering



Excavation for the Newton Pump Station Replacement, November 2025