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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

# METRO VANCOUVER REGIONAL DISTRICT
# WATER COMMITTEE

**REGULAR MEETING**

**Thursday July 15, 2021**
**9:00 am**
**28th Floor Boardroom, 4730 Kingsway, Burnaby, British Columbia**

## A G E N D A[1]

**1. ADOPTION OF THE AGENDA**

**1.1 July 15, 2021 Regular Meeting Agenda**
That the Water Committee adopt the agenda for its regular meeting scheduled for July 15, 2021 as circulated.

**2. ADOPTION OF THE MINUTES**

**2.1 June 10, 2021 Regular Meeting Minutes**
That the Water Committee adopt the minutes of its regular meeting held June 10, 2021 as circulated.

**3. DELEGATIONS**

**4. INVITED PRESENTATIONS**

**5. REPORTS FROM COMMITTEE OR STAFF**

**5.1 Draft Water Services 2022 – 2026 Capital Plan** *pg. 8*
That the Water Committee receive for information the report dated, June 25, 2021, titled "Draft Water Services 2022 – 2026 Capital Plan".

**5.2 Water Services Capital Program Expenditure Update to April 30, 2021** *pg. 15*
That the Water Committee receive for information the report dated June 14, 2021, titled "Water Services Capital Program Expenditure Update to April 30, 2021".

[1] *Note: Recommendation is shown under each item, where applicable.*

**5.3 Engagement Plan for Water DCC Program Implementation** *pg. 26*

That the GVWD Board direct staff to proceed with engagement on the proposed implementation of a water DCC program as described in the report dated June 18, 2021, titled "Engagement Plan for Water DCC Program Implementation".

**5.4 Regional Water Conservation Impacts on Capital Planning** *pg. 31*

That the Water Committee receive for information the report dated June 23, 2021, titled "Regional Water Conservation Impacts on Capital Planning".

**5.5 Award of Contract Resulting from Request for Proposal (RFP) No. 20-054: Construction of Douglas Road Main No. 2 – Still Creek Section – Microtunnel** *pg. 35*

That the GVWD Board:

a) approve award of a contract in the amount of $13,495.049.00 (exclusive of taxes) to Ward & Burke Microtunnelling Ltd. resulting from Request for Proposal (RFP) No. 20-054: Construction of Douglas Road Main No.2: Still Creek Section - Microtunnel, subject to final review by the Commissioner; and

b) authorize the Commissioner and the Corporate Officer to execute the required documentation once the Commissioner is satisfied that the award should proceed.

**5.6 Coquitlam Lake Water Supply – Project Update** *pg. 40*

That the GVWD Board endorse Option 4 North Intake Smaller Initial Filtration to be carried forward through Permitting and Regulatory Phase into Preliminary Design.

**5.7 Residential Water Metering – Overview of Local Experience** *pg. 48*

That the Water Committee receive for information the report dated June 30, 2021, titled "Residential Water Metering – Overview of Local Experience".

**5.8 Manager's Report** *pg. 52*

That the Water Committee receive for information the report dated July 8, 2021 titled "Manager's Report".

**6. INFORMATION ITEMS**

**7. OTHER BUSINESS**

**8. BUSINESS ARISING FROM DELEGATIONS**

**9. RESOLUTION TO CLOSE MEETING**

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

***Revised***

That the Water Committee close its regular meeting scheduled for July 15, 2021 pursuant to the *Community Charter* provisions, Section 90 (1) (e), (i) and (m) as follows:

"90 (1) A part of the meeting may be closed to the public if the subject matter being considered relates to or is one or more of the following:

(e) the acquisition, disposition or expropriation of land or improvements, if the board or committee considers that disclosure could reasonably be expected to harm the interests of the regional district;

(i) the receipt of advice that is subject to solicitor-client privilege, including communications necessary for that purpose; and

(m) a matter that, under another enactment, is such that the public may be excluded from the meeting."

**10. ADJOURNMENT/CONCLUSION**

That the Water Committee adjourn/conclude its regular meeting of July 15, 2021

Membership:

Brodie, Malcolm (C) – Richmond
Elford, Doug (VC) – Surrey
Asmundson, Brent – Coquitlam
Baird, Ken - Tsawwassen First Nation
Bell, Don - North Vancouver City
Bligh, Rebecca – Vancouver
Clark, Carolina – Belcarra
Dingwall, Bill - Pitt Meadows
Guichon, Alicia - Delta
Keithley, Joe – Burnaby
Martin, Gayle - Langley City
Svendsen, Ryan - Maple Ridge
Vagramov, Rob - Port Moody

**METRO VANCOUVER REGIONAL DISTRICT**
**WATER COMMITTEE**

Minutes of the Regular Meeting of the Metro Vancouver Regional District (MVRD) Water Committee held at 9:01 a.m. on Thursday, June 10, 2021 in the 28th Floor Boardroom, 4730 Kingsway, Burnaby, British Columbia.

**MEMBERS PRESENT:**
Chair, Mayor Malcolm Brodie*, Richmond
Vice Chair, Councillor Doug Elford*, Surrey
Councillor Brent Asmundson*, Coquitlam
Chief Ken Baird*, Tsawwassen
Councillor Don Bell*, North Vancouver City
Councillor Carolina Clark*, Belcarra
Mayor Bill Dingwall*, Pitt Meadows
Councillor Alicia Guichon*, Delta
Councillor Joe Keithley*, Burnaby
Councillor Gayle Martin*, Langley City
Councillor Ryan Svendsen*, Maple Ridge

**MEMBERS ABSENT:**
Councillor Rebecca Bligh, Vancouver
Mayor Rob Vagramov, Port Moody

**STAFF PRESENT:**
Marilyn Towill, General Manager, Water Services
Lauren Cichon, Legislative Services Coordinator, Board and Information Services

## 1. ADOPTION OF THE AGENDA

### 1.1 June 10, 2021 Regular Meeting Agenda

**It was MOVED and SECONDED**
That the Water Committee:

a) amend the agenda for its regular meeting scheduled for June 10, 2021 by removing under Section K. Resolution to Close Meeting, Section 90(1)(i) of the *Community Charter* (the receipt of advice that is subject to solicitor-client privilege, including communications necessary for that purpose), and adding under Section 9. Resolution to Close Meeting, Section 90(1)(g) of the *Community Charter* (litigation or potential litigation affecting the regional district) and;

b) adopt the agenda as amended.

**CARRIED**

*denotes electronic meeting participation as authorized by Section 3.6.2 of the *Procedure Bylaw*

## 2. ADOPTION OF THE MINUTES

### 2.1 May 13, 2021 Regular Meeting Minutes

**It was MOVED and SECONDED**
That the Water Committee adopt the minutes of its regular meeting held May 13, 2021 as circulated.

**CARRIED**

## 3. DELEGATIONS

No items presented.

## 4. INVITED PRESENTATIONS

No items presented.

## 5. REPORTS FROM COMMITTEE OR STAFF

### 5.1 2020 GVWD Dam Safety Program Annual Update

Report dated May 21, 2021, from Paul Kohl, Director, Operations and Maintenance, Water Services, providing the Water Committee with an annual update on dam safety activities associated with the Cleveland, Seymour Falls, Palisade, Burwell, and Loch Lomond dams.

**It was MOVED and SECONDED**
That the Water Committee receive for information the report dated May 21, 2021 titled "2020 GVWD Dam Safety Program Annual Update".

**CARRIED**

### 5.2 Drinking Water Customer Information Guide

Report dated May 17, 2021, from Inder Singh, Director, Interagency Projects and Quality Control, Water Services, providing the GVWD Board information on the development of an updated Drinking Water Customer Service Guide to assist frontline staff in responding to public inquiries about drinking water.

**It was MOVED and SECONDED**
That the GVWD Board receive for information the report dated May 17, 2021 titled "Drinking Water Customer Information Guide".

**CARRIED**

### 5.3 Update on Adult Coho Release Program in Coquitlam Lake

Report dated May 27, 2021, from Heidi Walsh, Director, Watershed and Environmental Management, Water Services, providing the GVWD Board an update on the success of the adult coho salmon releases conducted during the fall of 2020.

**It was MOVED and SECONDED**
That the GVWD Board receive for information the report dated May 27, 2021 titled "Update on Adult Coho Release Program in Coquitlam Lake".

**CARRIED**

**5.4 Manager's Report**

Report dated May 21, 2021, from Marilyn Towill, General Manager, Water Services, updating the Committee on the tree cutting incident at Grouse Mountain Regional Park, First Narrows Isolation Chamber improvements, and the Committee Work Plan.

Members discussed the tree cutting incident including the publicity of the incident, offenders' purpose for tree cutting, low fines charged towards the first-time offenders, and directed staff to provide further information on the incident.

**Request of Staff**

Staff was requested to bring forward information to the Regional Parks Committee with respect to the tree cutting incident at Grouse Mountain Regional Park.

**It was MOVED and SECONDED**
That the Water Committee receive for information the report dated May 21, 2021 titled "Manager's Report".

**CARRIED**

## 6. INFORMATION ITEMS

**6.1 Project Delivery Best Practice Response – Capital Project Governance and Stage Gate Framework**

Report dated May 28, 2021, from Cheryl Nelms, General Manager, Project Delivery, updating the Water Committee on implementation of best practices for capital projects at Metro Vancouver. This report was considered by the Finance and Intergoverment Committee on May 12, 2021, approved by the MVRD Board on May 28, 2021 and is presented to the Water Committee for information only.

**It was MOVED and SECONDED**
That the Water Committee receive for information the report dated May 28, 2021 titled "Project Delivery Best Practice Response – Capital Project Governance and Stage Gate Framework".

**CARRIED**

## 7. OTHER BUSINESS

No items presented.

**8. BUSINESS ARISING FROM DELEGATIONS**

No items presented.

**9. RESOLUTION TO CLOSE MEETING**

**It was MOVED and SECONDED**

That the Water Committee close its regular meeting scheduled for June 10, 2021 pursuant to the *Community Charter* provisions, Section 90 (1) (e) and (g):

"90 (1) A part of the meeting may be closed to the public if the subject matter being considered relates to or is one or more of the following:

(e) the acquisition, disposition or expropriation of land or improvements, if the board or committee considers that disclosure could reasonably be expected to harm the interests of the regional district; and

(g) litigation or potential litigation affecting the regional district."

**CARRIED**

**10. ADJOURNMENT/CONCLUSION**

**It was MOVED and SECONDED**

That the Water Committee adjourn its regular meeting of June 10, 2021.

**CARRIED**

(Time: 9:23 a.m.)

_____ _____

Lauren Cichon, Malcolm Brodie, Chair

Legislative Services Coordinator

To: Water Committee

From: Marilyn Towill, General Manager, Water Services

Date: June 25, 2021 Meeting Date: July 15, 2021

Subject: **Draft Water Services 2022 – 2026 Capital Plan**

**RECOMMENDATION**

That the Water Committee receive for information the report dated, June 25, 2021, titled "Draft Water Services 2022 – 2026 Capital Plan".

**EXECUTIVE SUMMARY**

The draft 2022 – 2026 Water Services Capital Plan has been prepared based on direction received at the April 8, 2021 Metro Vancouver Board Budget Workshop. As part of Metro Vancouver's focus on enhancing transparency and governance of the Capital Plan, this report represents a new step in the capital budgeting process for this year. The intent is for the Water Committee to provide comments on the draft Capital Plan, which will then be incorporated into the Fall budget presentations to the Water Committee and GVWD Board.

The estimated 2022 Capital Cash Flow is $492.7 million with a total estimated spend of $2.6 billion over the five years (2022 - 2026). With respect to the common four years compared to the prior cycle's capital plan, the estimated spend has increased by $21.3 million, or 1.1%.

**PURPOSE**

To present to the Water Committee the draft Water Services Department 2022 – 2026 Capital Plan for comments.

**BACKGROUND**

On April 8, 2021, Metro Vancouver held a Board Budget Workshop with the objective to seek direction for the preparation of the 2022 - 2026 Financial Plan. This report provides the Water Committee with the information needed to provide comments on the Capital Plan that will be incorporated into the 2022 – 2026 Financial Plan. Going forward, this step will be included in the capital planning process to enhance the transparency and governance of the capital planning process.

**Water Customer Level of Service Objectives**

Projects within the draft 2022 – 2026 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. Where risks to service objectives are identified, mitigation actions are planned and incorporated into annual work plans. These actions may take the form of changes to operating and maintenance activities, changes to infrastructure, and/or the development of emergency response procedures. The projects in the annual Capital Plan embody the infrastructure changes required to achieve the customer level of service objectives.

**CAPITAL PLAN HIGHLIGHTS**

The draft 2022 - 2026 Capital Plan includes $492.7 million for 2022 and a total of $2.6 billion over the five years, with an average of $511.8 million per year (see Attachment). Out of 142 projects on the 5-year plan, the largest eight projects make up 60.9% of the capital spending.

The spending over the next 5 years is driven by infrastructure changes required as a result of:

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

Key capital projects planned or ongoing in 2022 – 2026 Water Services Department ("WS") include the following:

- Cape Horn Pump Station No. 3 (Growth);
- Kennedy Newton Main (Growth);
- South Surrey Main No. 2 (Growth);
- Annacis Main No. 5 (Growth);
- Whalley Kennedy Main No. 2 (Growth);
- Fleetwood Reservoir (Growth);
- Newton Pump Station No. 2 (Growth);
- Haney Main No. 4 (Growth);
- Hellings Tank No. 2 (Growth)
- Central Park Main No. 2 (Maintenance);
- Douglas Road Main No. 2 Still Creek (Maintenance);
- Cleveland Dam Public Warning System and Enhancements (Maintenance);
- Port Moody Main No.3 (Dewdney Trunk Rd Relocation& Scott Creek Section) (Maintenance);
- Kersland Reservoir No. 1 Structural Improvements (Maintenance);
- Capilano Raw Water Pump Station - Back-up Power (Resilience);
- Barnston/Maple Ridge Pump Station - Back-up Power (Resilience);
- Seymour Main #5 (Resilience);
- Burnaby Mountain Tank #2 and #3 (Resilience);
- Clayton Langley Main #2 (Resilience);
- Pebble Hill Reservoir Seismic Upgrade (Resilience); and

- Water Optimization (Instrumentation and non-billing Flow Meters) (Upgrade and Opportunity);
- Water Meter Upgrades (billing meters) (Upgrade and Opportunity); and
- LSCR Learning Lodge Replacement (Upgrade and Opportunity).

The Project Delivery Department ("PDE") has responsibility for the delivery of several of the Water Services Department's major projects, specifically the highest value, risk and consequence projects:

- Annacis Water Supply Tunnel (Growth);
- Cambie-Richmond Water Supply Tunnel (Resilience);
- Coquitlam Lake Water Supply (Growth);
- Coquitlam Water Main (Growth);
- Haney Water Supply Tunnel (Resilience);
- Lulu-Island Delta Water Supply Tunnel (Maintenance);
- Second Narrows Water Supply Tunnel (Resilience); and
- Stanley Park Water Supply Tunnel (Maintenance).

The Capital Program for Water Services is currently funded by long-term debt, reserves, contributions from the operating budget, and some external (interagency and senior level government grant) contributions.

**Capital Plan Changes**

The completion of multi-year projects is complex and subject to change due to a variety of factors including: unforeseen ground conditions, property availability, permitting challenges, cost escalation, raw materials price volatility, and skilled trades worker availability. The breakdown of the total revised 2022 – 2026 Capital Plan, compared to the prior cycle Capital Plan is summarized below.

($ Millions)

| Prior Cycle Capital Plan 2021-2025 | Cash flow 2021 | Adjustments to 2022-2025 Capital Plan | | | | | Cash flow 2026 | Draft Capital Plan 2022-2026 |
|---|---|---|---|---|---|---|---|---|
| | | Carry-Forward | Deferrals/ Accel | Risk | Scope | Total | | |
| 2,361 | (431) | 56 | (201) | 131 | 36 | 21 | 608 | 2,559 |

**ALTERNATIVES**

This is an information report. No alternatives are presented.

**FINANCIAL IMPLICATIONS**

The draft 2022 - 2026 Capital Plan includes $492.7 million for 2022 and a total of $2.6 billion over the five years, an average of $511.8 million per year. The intent is that the Water Committee provide comments, which will then be incorporated into the Fall budget presentations to the Committees and the Board.

## SUMMARY / CONCLUSION

The 2022 – 2026 Capital Plan is the consolidated list of infrastructure projects required to meet and/or maintain the regional Water Services Customer Level of Service Objectives and includes the financial impacts of these projects over the next five years.

The presentation of the draft 2022 – 2026 Capital Plan for Water Services provides the opportunity for the Water Committee to provide comments, which will be incorporated into the Fall Budget budget presentations to the Water Committee and the GVWD Board.

## Attachment

Draft Water Services 2022-2026 Capital Plan

46274547

GREATER VANCOUVER WATER DISTRICT
CAPITAL PORTFOLIO
WATER SERVICES
2022 PROJECTED CASHFLOW

| | ACTUALS ESTIMATED TO DEC 31 2021 | 2022 CAPITAL CASH FLOW | 2023 CAPITAL CASH FLOW | 2024 CAPITAL CASH FLOW | 2025 CAPITAL CASH FLOW | 2026 CAPITAL CASH FLOW | ACTIVE STAGE | PRIMARY DRIVER |
|---|---|---|---|---|---|---|---|---|
| **CAPITAL EXPENDUTURES** | | | | | | | | |
| **Water Mains** | | | | | | | | |
| Angus Drive Main | $ 30,619,070 | $ 50,000 | $ - | $ - | $ - | $ - | Construction | Growth |
| Annacis Main No. 5 (Marine Crossing) | 45,793,371 | 66,000,000 | 70,000,000 | 80,000,000 | 70,000,000 | 65,000,000 | Construction | Growth |
| Annacis Main No. 5 (North) | 1,832,103 | 1,600,000 | 16,500,000 | 15,000,000 | 5,500,000 | 20,000,000 | Design | Growth |
| Annacis Main No. 5 (South) | 9,888,945 | 200,000 | 1,900,000 | 14,000,000 | 14,000,000 | 16,800,000 | Design | Growth |
| Burnaby Mountain Main No. 2 | - | - | 300,000 | 1,600,000 | 400,000 | 5,000,000 | Planned | Maintenance |
| Cambie Richmond Main No. 3 (Marine Crossing) | 35,048,291 | 18,200,000 | 2,000,000 | 8,000,000 | 8,500,000 | 3,500,000 | Construction | Resilience |
| Capilano Main No. 5 (South Shaft to Lost Lagoon) | 15,409,774 | 38,900,000 | 50,000,000 | 70,000,000 | 50,000,000 | 55,000,000 | Construction | Maintenance |
| Central Park Main No. 2 (10th Ave to Westburnco) | 150,000 | 900,000 | 1,200,000 | 6,800,000 | 7,000,000 | 8,000,000 | Construction | Maintenance |
| Central Park Main No. 2 (Patterson to 10th Ave) | 40,269,413 | 24,200,000 | 14,500,000 | 11,500,000 | - | - | Construction | Maintenance |
| Clayton Langley Main No. 2 | - | 400,000 | 600,000 | 700,000 | 200,000 | 3,000,000 | Construction | Resilience |
| Coquitlam Main No. 4 | 16,690,814 | 27,000,000 | 61,600,000 | 71,800,000 | 90,400,000 | 173,000,000 | Construction | Growth |
| Douglas Road Main No. 2 - Kincaid Section | 9,800,000 | 1,000,000 | 1,000,000 | 500,000 | - | - | Construction | Maintenance |
| Douglas Road Main No. 2 (Vancouver Heights Section) | 20,169,201 | 300,000 | - | - | - | - | Construction | Maintenance |
| Douglas Road Main No. 2 Still Creek | 13,000,000 | 22,600,000 | 14,000,000 | 13,500,000 | - | - | Construction | Maintenance |
| Haney Main No. 4 (Marine Crossing) | 235,112 | 5,000,000 | 15,000,000 | 5,000,000 | 5,000,000 | 10,000,000 | Construction | Resilience |
| Haney Main No. 4 (West Section) | 1,143,594 | 400,000 | 350,000 | - | - | - | Construction | Growth |
| Kennedy Newton Main | 68,061,498 | 23,850,000 | 13,000,000 | 9,500,000 | - | - | Construction | Growth |
| Lulu Island - Delta Main No. 2 (Marine Crossing) | - | - | 4,000,000 | 5,500,000 | 7,500,000 | 8,000,000 | Planned | Maintenance |
| Newton Reservoir Connection | - | - | 450,000 | 1,100,000 | 4,500,000 | 8,000,000 | Planned | Growth |
| Port Mann Main No. 1 (Fraser River Crossing Removal) | 1,005,000 | 250,000 | 3,250,000 | 8,500,000 | 5,000,000 | 250,000 | Construction | Maintenance |
| Port Mann Main No. 2 (South) | 35,914,638 | 500,000 | - | - | - | - | Construction | Growth |
| Port Moody Main No. 3 Scott Creek Section | 374,885 | 550,000 | 3,500,000 | 3,000,000 | 2,000,000 | 2,500,000 | Construction | Maintenance |
| Queensborough Main Royal Avenue Relocation | 5,100,000 | 2,100,000 | 300,000 | - | - | - | Construction | Maintenance |
| Relocation and Protection for MOTI Expansion Project Broadway | 1,205,849 | 650,000 | 500,000 | 1,500,000 | 1,500,000 | 3,500,000 | Construction | Maintenance |
| Relocation and Protection for Translink Expansion Project Surrey Langley SkyTrain | - | 2,650,000 | 2,200,000 | 1,000,000 | 750,000 | - | Design | Maintenance |
| Sapperton Main No. 2 North Road Relocation and Protection | 350,000 | 4,550,000 | 1,600,000 | - | - | - | Construction | Maintenance |
| Second Narrows Crossing (Tunnel) | 273,143,022 | 75,000,000 | 70,000,000 | 30,000,000 | 20,600,000 | - | Construction | Resilience |
| Second Narrows Crossing 1 & 2 (Burrard Inlet Crossing Removal) | - | 500,000 | 1,000,000 | 500,000 | 1,000,000 | 12,000,000 | Construction | Maintenance |
| Seymour Main No. 2 Joint Improvements | 1,501,462 | 750,000 | 1,000,000 | - | 1,000,000 | 1,000,000 | Construction | Resilience |
| Seymour Main No. 5 III ( North ) | 6,465,507 | 250,000 | - | - | - | 100,000 | Construction | Resilience |
| South Delta Main No. 1 - 28 Ave to 34B Ave | 22,514,859 | 100,000 | - | - | - | - | Construction | Upgrade |
| South Delta Mains - 28 Ave Crossover | 10,638,578 | 50,000 | - | - | - | - | Construction | Upgrade |
| South Surrey Main No. 1 Nickomekl Dam Relocation | 300,000 | 1,700,000 | 3,000,000 | 2,100,000 | - | - | Design | Maintenance |
| South Surrey Main No. 2 | 400,000 | 1,100,000 | 1,500,000 | 3,500,000 | 3,500,000 | 9,500,000 | Construction | Growth |
| Tilbury Junction Chamber Valves Replacement with Actuators | 5,300,000 | 300,000 | - | - | - | - | Construction | Upgrade |
| Water Meter Upgrades | 5,150,000 | 2,700,000 | 3,950,000 | 3,500,000 | 3,500,000 | 3,600,000 | Construction | Upgrade |
| Water Optimization - Flow Meters (Non-billing) Phase 1 | - | - | 1,500,000 | 2,000,000 | 3,000,000 | 4,000,000 | Planned | Upgrade |
| Water Optimization - Flow Meters (Non-billing) Phase 2 | - | 250,000 | 1,500,000 | 750,000 | 2,000,000 | 3,000,000 | Construction | Upgrade |
| Water Optimization - Instrumentation | 150,000 | 750,000 | 2,100,000 | 2,500,000 | 2,500,000 | 2,500,000 | Construction | Upgrade |
| Water Optimization Automation & Instrumentation | 7,790,000 | 850,000 | 900,000 | - | - | - | Construction | Upgrade |
| Whalley Kennedy Main No. 2 | - | - | 1,000,000 | 1,300,000 | 1,300,000 | 2,000,000 | Planned | Growth |
| Whalley Main | 31,128,529 | 150,000 | - | - | - | - | Construction | Growth |

**GREATER VANCOUVER WATER DISTRICT**
**CAPITAL PORTFOLIO**
**WATER SERVICES**
**2022 PROJECTED CASHFLOW**

| | ACTUALS ESTIMATED TO DEC 31 2021 | 2022 CAPITAL CASH FLOW | 2023 CAPITAL CASH FLOW | 2024 CAPITAL CASH FLOW | 2025 CAPITAL CASH FLOW | 2026 CAPITAL CASH FLOW | ACTIVE STAGE | PRIMARY DRIVER |
|---|---|---|---|---|---|---|---|---|
| Projects under $5M | 9,631,649 | 17,450,000 | 8,200,000 | 2,750,000 | 3,350,000 | 1,600,000 | | |
| **Total Water Mains** | **726,175,164** | **343,750,000** | **373,400,000** | **377,400,000** | **314,000,000** | **420,850,000** | | |
| **Pump Stations** | | | | | | | | |
| Barnston/Maple Ridge Pump Station - Back-up Power | $ 300,000 | $ 8,700,000 | $ 4,500,000 | $ 600,000 | $ 2,000,000 | $ 2,700,000 | Design | Resilience |
| Burnaby Mountain Pump Station No. 2 | 300,000 | 100,000 | 900,000 | 1,100,000 | 700,000 | 9,000,000 | Construction | Maintenance |
| Cape Horn Pump Station No. 3 | 1,130,535 | 1,500,000 | 2,250,000 | 4,500,000 | 22,000,000 | 59,000,000 | Construction | Growth |
| Capilano Raw Water Pump Station - Back-up Power | 14,929,590 | 13,050,000 | 13,000,000 | 1,000,000 | - | - | Construction | Resilience |
| Central Park WPS Starters Replacement | 1,950,000 | 4,500,000 | 1,550,000 | - | - | - | Design | Maintenance |
| Newton Pump Station No. 2 | 6,145,921 | 13,900,000 | 16,900,000 | 9,500,000 | 4,000,000 | - | Construction | Growth |
| Westburnco Pump Station - Back-up Power | 1,127,820 | 400,000 | 950,000 | 5,500,000 | 8,000,000 | 7,000,000 | Design | Resilience |
| Projects under $5M | 1,849,431 | 3,900,000 | 900,000 | 350,000 | 650,000 | 1,000,000 | | |
| **Total Pump Stations** | **$ 27,733,297** | **$ 46,050,000** | **$ 40,950,000** | **$ 22,550,000** | **$ 37,350,000** | **$ 78,700,000** | | |
| **Reservoirs** | | | | | | | | |
| Burnaby Mountain Tank No. 2 | $ 401,000 | $ 1,249,000 | $ 1,700,000 | $ 7,000,000 | $ 7,000,000 | $ 4,000,000 | Design | Resilience |
| Burnaby Mountain Tank No. 3 | 400,000 | 800,000 | 1,700,000 | 500,000 | 7,000,000 | 7,000,000 | Design | Resilience |
| Clayton Reservoir | 26,075,871 | 550,000 | - | - | - | - | Construction | Resilience |
| Fleetwood Reservoir | 15,823,062 | 23,000,000 | 15,350,000 | 2,150,000 | - | - | Construction | Growth |
| Grandview Reservoir Unit No. 2 | - | - | - | 400,000 | 800,000 | 1,400,000 | Planned | Growth |
| Hellings Tank No. 2 | 6,378,614 | 500,000 | 6,000,000 | 15,500,000 | 11,000,000 | 4,500,000 | Construction | Growth |
| Kersland Reservoir No. 1 Structural Improvements | 1,901,846 | 4,000,000 | - | - | - | - | Construction | Maintenance |
| Pebble Hill Reservoir No. 3 Seismic Upgrade | 425,000 | 50,000 | 25,000 | - | 5,000,000 | 4,000,000 | Design | Resilience |
| Pebble Hill Reservoir Seismic Upgrade | 5,327,507 | 6,950,000 | 2,500,000 | - | - | - | Construction | Resilience |
| Reservoir Isolation Valve Automation | 1,399,196 | 500,000 | 1,000,000 | 1,000,000 | 1,250,000 | 1,150,000 | Construction | Resilience |
| Sunnyside Reservoir Units 1 and 2 Seismic Upgrade | 7,510,853 | 60,000 | 3,000,000 | 7,200,000 | - | - | Construction | Resilience |
| Projects under $5M | 3,778,573 | 3,750,000 | 2,350,000 | 3,350,000 | 1,700,000 | 4,600,000 | | |
| **Total Reservoirs** | **$ 69,421,522** | **$ 41,409,000** | **$ 33,625,000** | **$ 37,100,000** | **$ 33,750,000** | **$ 26,650,000** | | |
| **Treatment Plants** | | | | | | | | |
| Coquitlam Lake Water Supply | $ 16,713,045 | $ 19,000,000 | $ 33,000,000 | $ 35,000,000 | $ 44,000,000 | $ 56,000,000 | Construction | Growth |
| Coquitlam Intake Tower Seismic Upgrade | 1,600,000 | 400,000 | - | 5,000,000 | 14,000,000 | 5,000,000 | Design | Resilience |
| CWTP Ozone Back-up Power | - | - | 500,000 | 1,450,000 | 4,000,000 | 1,500,000 | Planned | Resilience |
| CWTP Ozone Generation Upgrades for Units 2 & 3 | 4,850,000 | 2,050,000 | 100,000 | - | - | - | Construction | Upgrade |
| Online Chlorine and pH Analyzers | - | - | 600,000 | 1,200,000 | 1,200,000 | 1,500,000 | Planned | Upgrade |
| SCFP Additional Pre-Treatment | - | - | - | - | - | 1,000,000 | Planned | Maintenance |
| SCFP Clearwell Membrane Replacement | - | - | 200,000 | 1,200,000 | - | 5,500,000 | Construction | Maintenance |
| Projects under $5M | 6,175,000 | 3,725,000 | 4,100,000 | 6,550,000 | 3,650,000 | 900,000 | | |
| **Total Treatment Plants** | **$ 29,338,045** | **$ 25,175,000** | **$ 38,500,000** | **$ 50,400,000** | **$ 66,850,000** | **$ 71,400,000** | | |
| **Others** | | | | | | | | |
| Beach Yard Facility - Site Redevelopment | $ - | $ - | $ - | $ - | 500,000 | 1,000,000 | Planned | Maintenance |
| Capilano Hydropower | 1,468,368 | 1,000,000 | 1,750,000 | - | - | - | Definition | Opportunity |
| Cleveland Dam Lower Outlet Trashrack Replacement and Debris Removal | - | - | - | - | - | 500,000 | Planned | Maintenance |
| Cleveland Dam Public Warning System and Enhancements | - | 7,000,000 | 3,000,000 | - | - | - | Design | Maintenance |

**GREATER VANCOUVER WATER DISTRICT**
**CAPITAL PORTFOLIO**
**WATER SERVICES**
**2022 PROJECTED CASHFLOW**

| | ACTUALS ESTIMATED TO DEC 31 2021 | 2022 CAPITAL CASH FLOW | 2023 CAPITAL CASH FLOW | 2024 CAPITAL CASH FLOW | 2025 CAPITAL CASH FLOW | 2026 CAPITAL CASH FLOW | ACTIVE STAGE | PRIMARY DRIVER |
|---|---|---|---|---|---|---|---|---|
| Cleveland Dam Spillway Resurfacing | - | - | - | - | - | 400,000 | Planned | Maintenance |
| Lower Seymour Conservation Reserve Learning Lodge Replacement | 2,993,884 | 1,900,000 | 100,000 | - | - | - | Construction | Upgrade |
| Newton Rechlorination Station No. 2 | - | - | 400,000 | 600,000 | 1,500,000 | 1,500,000 | Planned | Maintenance |
| Rechlorination Station Upgrades | 700,000 | 600,000 | 1,500,000 | 1,500,000 | 1,000,000 | 6,000,000 | Design | Maintenance |
| Seymour Falls Dam Public Warning System | - | - | 1,000,000 | 4,000,000 | 5,000,000 | - | Planned | Maintenance |
| South Fraser Works Yard | 10,455,096 | 20,000,000 | 1,500,000 | - | - | - | Design | Maintenance |
| Projects under $5M | 13,067,889 | 5,839,000 | 6,750,000 | 1,000,000 | 1,000,000 | 1,095,000 | | |
| **Total Others** | **$ 28,685,237** | **$ 36,339,000** | **$ 16,000,000** | **$ 7,100,000** | **$ 9,000,000** | **$ 10,495,000** | | |
| **TOTAL CAPITAL EXPENDITURES** | **$ 881,353,265** | **$ 492,723,000** | **$ 502,475,000** | **$ 494,550,000** | **$ 460,950,000** | **$ 608,095,000** | | |

| **SUMMARY BY DRIVER** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Growth | $ 287,663,739 | $ 179,250,000 | $ 240,800,000 | $ 263,750,000 | $ 271,000,000 | $ 415,200,000 | | |
| Maintenance | 146,851,640 | 163,275,000 | 127,250,000 | 144,400,000 | 91,500,000 | 125,945,000 | | |
| Resilience | 383,599,147 | 138,548,000 | 118,875,000 | 73,950,000 | 85,500,000 | 51,350,000 | | |
| Upgrade | 61,770,371 | 10,650,000 | 13,800,000 | 12,450,000 | 12,950,000 | 15,600,000 | | |
| Opportunity | 1,468,368 | 1,000,000 | 1,750,000 | - | - | - | | |
| **Total** | **$ 881,353,265** | **$ 492,723,000** | **$ 502,475,000** | **$ 494,550,000** | **$ 460,950,000** | **$ 608,095,000** | | |

To: Water Committee

From: Goran Oljaca, Director, Engineering and Construction, Water Services

Date: June 14, 2021 Meeting Date: July 15, 2021

Subject: **Water Services Capital Program Expenditure Update to April 30, 2021**

**RECOMMENDATION**

That the Water Committee receive for information the report dated June 14, 2021, titled "Water Services Capital Program Expenditure Update to April 30, 2021".

**EXECUTIVE SUMMARY**

The capital expenditure reporting process as approved by the Board provides for regular status reports on capital expenditures 3 times per year. This is the first eport for 2021 which includes both the overall capital program for Water Services with a multi-year view of capital projects and the actual capital spending for the 2021 fiscal year to April 30, 2021 in comparison to the prorated annual budget. In 2021 the annual capital expenditures for Water Services are $62.4 million to date compared to a prorated annual capital budget of $144.5 million.

Forecasted expenditures for the current Water Services capital program remain within the approved budgets through to completion.

**PURPOSE**

To report on the status of the Water Services capital program and financial performance for the 2021 fiscal year to April 30, 2021.

**BACKGROUND**

The capital expenditure reporting process as approved by the Board provides for regular status reports on capital expenditures with interim reports sent to the Water, Liquid Waste, Zero Waste, and Performance and Audit Committees, in July and October, with a final year-end report to the Committees and the Boards in April of each year.

This is the first in a series of three reports for 2021 and looks at both the overall capital program for Water Services with a multi-year view of capital projects and the actual capital spending for the 2021 fiscal year to April 30, 2021 in comparison to the prorated annual budget.

**2021 CAPITAL EXPENDITURES**

**Capital Program Funding**

The capital spending for Water Services is funded through the water operating budget by a combination of contribution to capital (pay-as-you-go funding) and debt service costs (principal and interest payments). As a result, the annual impact on the ratepayers is significantly less than the level of budgeted capital expenditures.

**Overall Capital Program**

The overall capital program for Water Services includes capital projects which require multiple years to complete. These projects are broken down into various phases such as project definition, pre-design, detailed design and construction. With the completion of each phase, more information is learned for the appropriate costing of subsequent phases.

It is expected that the capital spending on all Water Services capital projects completed in 2021 or ongoing at some point in 2021 will be under budget by approximately $21.3 million, or within 0.3% of total budget.

Table 1 in Attachment 1 provides a summary of Water Services capital expenditures for both ongoing and completed projects. Completed Projects include a summary of actual spending compared to the Board approved spending limits while the Ongoing Projects include a summary of projected spending to completion compared to Board approved spending limits. With the rare exception, projects tend to complete with actual spending below the approved limits.

Attachment 2 provides the details behind the summary information including specific capital projects, summary financial information and notes where required. Attachment 3 provides additional project status information for some of the key projects included in Attachment 1 – Table 1.

**2021 Capital Program Process**

The Metro Vancouver financial planning process includes Board approval of both an annual Operating Budget (operations, contribution to capital and debt service) and an annual Capital Budget for the planned capital infrastructure projects. The annual Capital Budget comprises the projected spending for a list of capital projects either continuing or to be started within the calendar year.

In 2021, capital expenditures for Water Services are $62.4 million to April 30, 2021 compared to a prorated annual capital budget of $144.5 million. The total annual capital budget for 2021 is $433.6 million.

Forecasted expenditures for the current Water Services capital program remain within the approved budgets for 2021 and through to completion.

Table 2 in Attachment 1 provides a summary of the 2021 actual capital spending to April 30, 2021 compared to the Board approved capital budget and prorated budget to April 30, 2021.

**Capital Program Impacts from COVID-19**

During these unprecedented times of health and economic uncertainty, all departments have been expected to monitor the impacts of the pandemic on their operations. This includes capital program expenditures.

Overall, the impact to the Water Service's capital program has largely been schedule related, with some notable impacts to project expenditures confirmed to date. Staff are monitoring impacts on their projects regularly. Some impacts to project schedules or expenditures are included under the respective project section of Attachment 3.

**ALTERNATIVES**

This is an information report. No alternatives are presented.

**FINANCIAL IMPLICATIONS**

Capital expenditures are funded internally (pay as you go) and through debt service costs (interest and principal payments). As capital expenditures are incurred, short term financing is secured and converted twice per year to long term debt through the Municipal Finance Authority.

**CONCLUSION**

This is the first in a series of three reports on capital expenditures for 2021. Water Services is projecting to be under budget for capital projects ongoing or completed in 2021.

Forecasted expenditures for the current Water Services capital program are anticipated to remain within the approved budgets through to completion.

**Attachments**

1. Capital Expenditure Summary – Water Services (*45527284*)
2. Detailed 2021 Water Services Capital Expenditure Summary – April (45700349)
3. Water Services Capital Project Status Information (45510102)

45513816

## Metro Vancouver

Capital Expenditure Summary
Water Services
As at April 30, 2021

**Table 1 – Ongoing and Completed Project Summary**

| Water Services | Total Projected to Completion | Total Budget | Projected Variance |
|---|---|---|---|
| Ongoing | $ 7,386,971,000 | $ 7,366,461,000 | $ 20,510,00 |
| Completed | 8,850,000 | 8,050,000 | 800,000 |
| Not Started | 775,500,000 | 775,500,000 | - |
| Cancelled | - | - | - |
| | **$ 8,171,321,000** | **$ 8,150,011,000** | **$ 21,310,000** |

**Table 2 – April 2021 Capital Spending Summary**

| Water Services | 2021 Budget | Prorated Budget to April 2021 | Actual Expenditures | |
|---|---|---|---|---|
| Infrastructure Growth Capital | $ 167,550,00 | $ 55,850,000 | $ 11,385,877 | |
| Infrastructure Maintenance Capital | 91,200,00 | 30,400,000 | 18,935,944 | |
| Infrastructure Resilience Capital | 157,900,000 | 52,633,000 | 34,509,858 | |
| Infrastructure Upgrade Capital | 14,900,000 | 4,967,000 | (2,473,735) | |
| Opportunity Capital | 2,000,000 | 667,000 | - | |
| | **$ 433,550,000** | **$ 144,517,000** | **$ 62,357,944** | **43%** |

45527284

Metro Vancouver

# ATTACHMENT 2

**Water Services Capital Expenditures Summary**
**As of April 30, 2021**

| Project Name | Project Location | Lifetime Total Project Budget | Lifetime Total Expenditures to Date | Lifetime Remaining Budget | Lifetime Total Projected Expenditures | Lifetime Projected Remaining Budget | Percent Complete | Status | Project on Schedule? | Note | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **<program_desc>** | | | | | | | | | | | |
| **Infrastructure Growth Capital** | | | | | | | | | | | |
| Annacis Main No. 5 (Marine Crossing) | New West/Surrey | 488,000,000 | 32,777,640 | 455,222,360 | 485,000,000 | 3,000,000 | 7% | Ongoing | Y | | |
| Annacis Main No. 5 (North) | New Westminster | 51,500,000 | 585,370 | 50,914,630 | 51,500,000 | - | 1% | Ongoing | Y | | |
| Annacis Main No. 5 (South) | Surrey | 56,900,000 | 2,281,268 | 54,618,732 | 56,900,000 | - | 5% | Ongoing | Y | | |
| Cape Horn Pump Station No. 3 | Coquitlam | 171,550,000 | 874,664 | 170,675,336 | 171,550,000 | - | 1% | Ongoing | Y | | |
| Coquitlam Intake No. 2 & Tunnel | Coquitlam | 1,181,230,000 | 7,798,481 | 1,173,431,519 | 1,181,230,000 | - | 1% | Ongoing | Y | | |
| Coquitlam Intake No. 2 (Water Treatment) | Coquitlam | 1,486,000,000 | 582,968 | 1,485,417,032 | 1,486,000,000 | - | 1% | Ongoing | Y | | |
| Coquitlam Main No. 4 (Cape Horn) | Coquitlam | 152,600,000 | 1,252,838 | 151,347,162 | 152,600,000 | - | 1% | Ongoing | Y | | |
| Coquitlam Main No. 4 (Central Section) | Coquitlam | 204,470,000 | 3,796,183 | 200,673,817 | 204,470,000 | - | 2% | Ongoing | Y | | |
| Coquitlam Main No. 4 (South Section) | Coquitlam | 408,250,000 | 3,955,214 | 404,294,786 | 408,250,000 | - | 2% | Ongoing | Y | | |
| Fleetwood Reservoir | Surrey | 43,367,000 | 4,030,104 | 39,336,896 | 43,367,000 | - | 9% | Ongoing | N | | Project delayed due to property approval. |
| Grandview Reservoir Unit No. 2 | Surrey | 26,000,000 | - | 26,000,000 | 26,000,000 | - | 0% | Not Started | Y | | |
| Haney Main No. 4 (West Section) | Port Coquitlam | 74,050,000 | 361,054 | 73,688,946 | 74,050,000 | - | 1% | Ongoing | Y | | |
| Hellings Tank No. 2 | Delta | 29,411,000 | 5,267,075 | 24,143,925 | 29,411,000 | - | 18% | Ongoing | Y | | |
| Jericho Reservoir No. 1 | Langley Township | 38,065,000 | 37,576,592 | 488,408 | 40,265,000 | (2,200,000) | 99% | Ongoing | Y | (c) (i) | |
| Kennedy Newton Main | Surrey | 132,550,000 | 41,830,754 | 90,719,246 | 116,710,000 | 15,840,000 | 32% | Ongoing | N | (b) | Route selection delays. |
| Newton Pump Station No. 2 | Surrey | 50,800,000 | 4,508,167 | 46,291,833 | 50,800,000 | - | 9% | Ongoing | N | | Property acquisition delays. |
| Newton Reservoir Connection | Surrey | 27,050,000 | - | 27,050,000 | 27,050,000 | - | 0% | Not Started | Y | | |
| Port Mann Main No. 2 (South) | Surrey | 36,800,000 | 29,640,877 | 7,159,123 | 36,800,000 | - | 95% | Ongoing | Y | | |
| South Surrey Main No. 2 | Surrey | 143,700,000 | 86,012 | 143,613,988 | 143,700,000 | - | 1% | Ongoing | Y | | |
| South Surrey Main No. 2 Nickomekl Dam Prebuild | Surrey | 2,000,000 | - | 2,000,000 | 2,000,000 | - | 0% | Not Started | Y | | |
| Whalley Kennedy Main No. 2 | Surrey | 96,000,000 | - | 96,000,000 | 96,000,000 | - | 0% | Not Started | Y | | |
| Whalley Main | Surrey | 31,800,000 | 26,274,736 | 5,525,264 | 31,800,000 | - | 90% | Ongoing | Y | | |
| | | **4,932,093,000** | **203,479,997** | **4,728,613,003** | **4,915,453,000** | **16,640,000** | | | | | |
| **Infrastructure Maintenance Capital** | | | | | | | | | | | |
| Annacis Main No. 2 - Queensborough Crossover Improvement | New Westminster | 1,200,000 | - | 1,200,000 | 1,200,000 | - | 0% | Not Started | Y | (f) | Likely not required. MOTI not planning on relocating Queensborough Main. |
| Annacis Main No. 3 BHP Potash Facility Pipe Protection | Surrey | 600,000 | - | 600,000 | 600,000 | - | 0% | Not Started | Y | (f) | |
| Beach Yard Facility - Site Redevelopment | Dist of North Van | 45,500,000 | - | 45,500,000 | 45,500,000 | - | 0% | Not Started | Y | | |
| Boundary Road Main No. 2 & No. 3 Decommissioning | Burnaby | 1,500,000 | 36,335 | 1,463,665 | 1,500,000 | - | 2% | Ongoing | Y | | |
| Burnaby Mountain Main No. 2 | Burnaby | 10,200,000 | - | 10,200,000 | 10,200,000 | - | 0% | Not Started | Y | | |
| Burnaby Mountain Pump Station No. 2 | Burnaby | 21,000,000 | 242,082 | 20,757,918 | 21,000,000 | - | 1% | Ongoing | N | | Scope of work under review |
| Cape Horn Reservoir Condition Assessment and Structural Repair | Coquitlam | 1,550,000 | - | 1,550,000 | 1,550,000 | - | 0% | Not Started | Y | | |
| Capilano Main No. 5 (South Shaft to Lost Lagoon) | Vancouver | 260,000,000 | 10,513,534 | 249,486,466 | 260,000,000 | - | 5% | Ongoing | N | | Delayed due to project approval timelines. |
| Capilano Main No. 7 Line Valve & Swing Connection | Dist of North Van | 2,100,000 | 1,938,963 | 161,037 | 2,100,000 | - | 92% | Ongoing | Y | | |
| Capilano Raw Water Pump Station Bypass PRV Upgrades | Dist of North Van | 1,500,000 | 54,129 | 1,445,871 | 1,500,000 | - | 4% | Ongoing | Y | | |
| Capilano Watershed Security Gatehouse | Dist of North Van | 2,300,000 | 516,396 | 1,783,604 | 2,175,000 | 125,000 | 22% | Ongoing | Y | | |
| Central Park Main No. 2 (10th Ave to Westburnco) | Burnaby | 28,350,000 | - | 28,350,000 | 28,350,000 | - | 0% | Not Started | N | | Delayed due to project scope review. |
| Central Park Main No. 2 (Patterson to 10th Ave) | Burnaby | 91,900,000 | 20,974,142 | 70,925,858 | 91,900,000 | - | 23% | Ongoing | Y | | |
| Central Park Reservoir Structural Improvements | Burnaby | 1,900,000 | - | 1,900,000 | 1,900,000 | - | 0% | Not Started | Y | | |
| Central Park WPS Starters Replacement | Burnaby | 8,000,000 | 991,729 | 7,008,271 | 8,000,000 | - | 12% | Ongoing | Y | | |
| CLD & SFD Fasteners Replacement & Coating Repairs | Dist of North Van | 2,100,000 | 776,260 | 1,323,740 | 2,100,000 | - | 75% | Ongoing | Y | | |
| Cleveland Dam - Lower Outlet HBV Rehabilitation | Dist of North Van | 4,900,000 | 1,194,370 | 3,705,630 | 4,900,000 | - | 24% | Ongoing | Y | | |
| Cleveland Dam Drumgate Seal Replacement | Dist of North Van | 1,250,000 | 269,208 | 980,792 | 1,250,000 | - | 22% | Ongoing | Y | | |
| Coquitlam Pipeline Road Remediation | Coquitlam | 2,000,000 | 799,496 | 1,200,504 | 2,000,000 | - | 40% | Ongoing | Y | (g) | |
| CWTP Ozone Sidestream Pipe Heat Trace and Insulation | Coquitlam | 900,000 | - | 900,000 | 900,000 | - | 0% | Not Started | Y | | |
| CWTP Ozone Sidestream Pump VFD Replacement | Coquitlam | 1,400,000 | 19,916 | 1,380,084 | 1,400,000 | - | 1% | Ongoing | Y | | |
| CWTP pH, Alkalinity Upgrades | Coquitlam | 1,700,000 | 1,666,015 | 33,985 | 1,700,000 | - | 98% | Ongoing | Y | | |
| Dechlorination for Reservoir Overflow and Underdrain Discharges | Burnaby | 2,700,000 | - | 2,700,000 | 2,700,000 | - | 0% | Not Started | Y | | |
| Douglas Road Main No. 2 - Kincaid Section | Burnaby | 12,300,000 | 9,705,838 | 2,594,162 | 12,300,000 | - | 79% | Ongoing | N | | Alignment changes. |
| Douglas Road Main No. 2 (Vancouver Heights Section) | Burnaby | 21,486,000 | 19,747,748 | 1,738,252 | 21,486,000 | - | 92% | Ongoing | N | (b) | Procurement delays. |
| Douglas Road Main No. 2 Still Creek | Burnaby | 63,100,000 | 4,752,738 | 58,347,262 | 63,100,000 | - | 8% | Ongoing | N | | Alignment changes. |
| Douglas Road Main Protection | Burnaby | 1,500,000 | - | 1,500,000 | 1,500,000 | - | 0% | Ongoing | Y | (f) | |
| E2 Shaft Phase 3 | Dist of North Van | 16,500,000 | 15,467,236 | 1,032,764 | 16,500,000 | - | 94% | Ongoing | Y | | |
| First Narrows Tunnel Isolation Chamber Improvements | Dist of North Van | 7,000,000 | 3,313,448 | 3,686,552 | 5,000,000 | 2,000,000 | 47% | Ongoing | Y | (a)(b) | |
| Improvements to Capilano Mains No. 4 and 5 | Dist of North Van | 1,700,000 | 107,495 | 1,592,505 | 1,700,000 | - | 6% | Ongoing | Y | | |
| Kersland Reservoir No. 1 Structural Improvements | Vancouver | 6,250,000 | 394,426 | 5,855,574 | 6,250,000 | - | 6% | Ongoing | Y | | |
| Little Mountain Reservoir Roof Upgrades | Vancouver | 3,450,000 | 181,141 | 3,268,859 | 3,450,000 | - | 7% | Ongoing | Y | | |
| Lulu Island - Delta Main - Scour Protection Phase 2 | Richmond | 3,550,000 | - | 3,550,000 | 3,550,000 | - | 0% | Not Started | Y | (f) | |
| Lulu Island - Delta Main No. 2 (Marine Crossing) | Richmond | 370,000,000 | - | 370,000,000 | 370,000,000 | - | 0% | Not Started | Y | | |

**Metro Vancouver**

# ATTACHMENT 2

**Water Services Capital Expenditures Summary**
**As of April 30, 2021**

| | | Lifetime | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project Name** | **Project Location** | **Total Project Budget** | **Total Expenditures to Date** | **Remaining Budget** | **Total Projected Expenditures** | **Projected Remaining Budget** | **Percent Complete** | **Status** | **Project on Schedule?** | **Note** | **Comments** |
| Maple Ridge Main West Lining Repairs | Maple Ridge | 3,500,000 | 190,470 | 3,309,530 | 3,500,000 | - | 7% | Ongoing | Y | | Additional scope of work identified. |
| Newton Rechlorination Station No. 2 | Surrey | 5,000,000 | - | 5,000,000 | 5,000,000 | - | 0% | Not Started | N | | Project delayed to coordinate with Newton Pump Station Project. |
| Port Mann Main No. 1 (Fraser River Crossing Removal) | Coq/Surrey | 18,500,000 | 255,000 | 18,245,000 | 18,500,000 | - | 2% | Ongoing | Y | | |
| Port Moody Main No. 1 Christmas Way Relocation | Coquitlam | 2,350,000 | - | 2,350,000 | 2,350,000 | - | 0% | Not Started | Y | (f) | |
| Port Moody Main No. 3 Dewdney Trunk Rd Relocation | Coquitlam | 2,700,000 | (162) | 2,700,162 | 2,700,000 | - | 1% | Ongoing | Y | (f) | |
| Port Moody Main No. 3 Scott Creek Section | Coquitlam | 12,000,000 | 212,097 | 11,787,903 | 12,000,000 | - | 4% | Ongoing | Y | | |
| Queensborough Main Royal Avenue Relocation | New Westminster | 7,500,000 | 6,158 | 7,493,842 | 7,500,000 | - | 1% | Ongoing | Y | | |
| Rechlorination Station SHS Storage Tank Replacement | Regional | 1,200,000 | 129,530 | 1,070,470 | 1,200,000 | - | 11% | Ongoing | Y | | |
| Rechlorination Station Upgrades | Regional | 15,000,000 | 378,372 | 14,621,628 | 15,000,000 | - | 3% | Ongoing | Y | | |
| Rehabilitation of AN2 on Queensborough Bridge | New West/Delta | 2,500,000 | 11,361 | 2,488,639 | 2,500,000 | - | 1% | Ongoing | Y | | |
| Relocation and Protection for MOTI Expansion Project Broadway | Vancouver | 8,900,000 | 49,432 | 8,850,568 | 8,900,000 | - | 1% | Ongoing | Y | (f) | |
| Relocation and Protection for MOTI George Massey Crossing Replacement | Delta / Richmond | 2,450,000 | - | 2,450,000 | 2,450,000 | - | 0% | Not Started | Y | (f) | |
| Relocation and Protection for Translink Expansion Project Surrey Langley SkyTrai | Surrey | 6,600,000 | - | 6,600,000 | 6,600,000 | - | 0% | Not Started | Y | (f) | |
| Sapperton Main No. 2 North Road Relocation and Protection | Coquitlam | 6,500,000 | - | 6,500,000 | 6,500,000 | - | 0% | Not Started | Y | | |
| SCFP Centralized Compressed Air System | Dist of North Van | 900,000 | 665 | 899,335 | 900,000 | - | 1% | Ongoing | Y | | |
| SCFP Clearwell Membrane Replacement | Dist of North Van | 17,400,000 | - | 17,400,000 | 17,400,000 | - | 0% | Not Started | Y | | |
| SCFP Concrete Coatings | Dist of North Van | 2,500,000 | 2,317,864 | 182,136 | 2,755,398 | (255,000) | 93% | Ongoing | Y | (j) | |
| SCFP OMC Building Expansion | Dist of North Van | 2,650,000 | 9,274 | 2,640,726 | 2,650,000 | - | 1% | Ongoing | Y | | |
| SCFP Polymer System Upgrade | Dist of North Van | 3,450,000 | 448,726 | 3,001,274 | 3,450,000 | - | 14% | Ongoing | Y | | |
| SCFP SCADA/ICS Controller Replacement | Dist of North Van | 1,400,000 | - | 1,400,000 | 1,400,000 | - | 0% | Not Started | Y | | |
| South Delta Main No. 1 - Ferry Road Check Valve Replacement | Delta | 600,000 | 68,286 | 531,714 | 600,000 | - | 11% | Ongoing | Y | | |
| South Surrey Main No. 1 Nickomekl Dam Relocation | Surrey | 7,100,000 | - | 7,100,000 | 7,100,000 | - | 0% | Not Started | N | (f) | Project delayed (City of Surrey) |
| South Surrey Supply Main (Serpentine River) Bridge Support Modification | Surrey | 400,000 | 79,469 | 320,531 | 400,000 | - | 20% | Ongoing | Y | | |
| Sunnyside Reservoir Unit 1 Upgrades | Surrey | 8,850,000 | 7,778,887 | 1,071,113 | 8,050,000 | 800,000 | 100% | Completed | Y | (b) | |
| Tilbury Main North Fraser Way Valve Addition | Burnaby | 3,100,000 | 265,723 | 2,834,277 | 3,100,000 | - | 9% | Ongoing | Y | | |
| Water Chamber Improvements and Repairs | Burnaby | 2,000,000 | - | 2,000,000 | 2,000,000 | - | 0% | Not Started | Y | | |
| Westburnco Pump Station No. 2 VFD Replacements | New Westminster | 2,550,000 | 101,548 | 2,448,452 | 2,550,000 | - | 4% | Ongoing | Y | | |
| | | **1,148,986,000** | **105,965,346** | **1,043,020,654** | **1,146,316,398** | **2,670,000** | | | | | |
| **Infrastructure Resilience Capital** | | | | | | | | | | | |
| Barnston/Maple Ridge Pump Station - Back-up Power | Pitt Meadows | 9,000,000 | 240,156 | 8,759,844 | 9,000,000 | - | 3% | Ongoing | Y | | |
| Burnaby Mountain Tank No. 2 | Burnaby | 21,650,000 | 45,415 | 21,604,585 | 21,650,000 | - | 1% | Ongoing | Y | | |
| Burnaby Mountain Tank No. 3 | Burnaby | 21,400,000 | - | 21,400,000 | 21,400,000 | - | 0% | Not Started | Y | | |
| Cambie Richmond Main No. 3 (Marine Crossing) | Richmond/Van | 490,250,000 | 1,340,153 | 488,909,847 | 490,250,000 | - | 1% | Ongoing | Y | | |
| Cape Horn Pump Station 2 - Back-Up Power | Coquitlam | 8,000,000 | 88,069 | 7,911,931 | 8,000,000 | - | 1% | Ongoing | Y | | |
| Capilano Mid-Lake Debris Boom | Dist of North Van | 750,000 | - | 750,000 | 750,000 | - | 1% | Ongoing | Y | | Tender has been awarded |
| Capilano Raw Water Pump Station - Back-up Power | Dist of North Van | 33,000,000 | 6,407,247 | 26,592,753 | 33,000,000 | - | 19% | Ongoing | N | | Site selection delays. |
| Capilano Reservoir Boat Wharf | Dist of North Van | 850,000 | - | 850,000 | 850,000 | - | 8% | Ongoing | Y | | Tender document completeion in progress |
| Clayton Langley Main No. 2 | Surrey | 16,900,000 | - | 16,900,000 | 16,900,000 | - | 0% | Not Started | Y | | |
| Cleveland Dam Power Resiliency Improvements | Dist of North Van | 1,700,000 | 25,177 | 1,674,823 | 1,700,000 | - | 1% | Ongoing | Y | | |
| Cleveland Dam Seismic Stability Evaluation | Dist of North Van | 800,000 | - | 800,000 | 800,000 | - | 0% | Not Started | Y | | |
| Coquitlam Intake Tower Seismic Upgrade | Coquitlam | 26,000,000 | 1,100,993 | 24,899,007 | 26,000,000 | - | 4% | Ongoing | Y | | |
| Critical Control Sites - Back-Up Power | Regional | 1,800,000 | - | 1,800,000 | 1,800,000 | - | 0% | Not Started | Y | | |
| CWTP Ozone Back-up Power | Coquitlam | 7,450,000 | - | 7,450,000 | 7,450,000 | - | 0% | Not Started | Y | | |
| Emergency Power Strategy for Regional Water Facilities | Regional | 400,000 | - | 400,000 | 400,000 | - | 0% | Ongoing | Y | | Project terms of reference under development. Expected completion Q4 of 2021 |
| Grandview Pump Station Improvements | Surrey | 2,600,000 | 199,901 | 2,400,099 | 2,600,000 | - | 8% | Ongoing | Y | | |
| Haney Main No. 4 (Marine Crossing) | P.Coq/P.Meadows | 390,250,000 | 235,112 | 390,014,888 | 390,250,000 | - | 1% | Ongoing | Y | | |
| Mackay Creek Debris Flow Mitigation | Dist of North Van | 9,700,000 | 9,023,693 | 676,307 | 9,700,000 | - | 93% | Ongoing | N | | Delays due to challenging ground conditions. |
| Pebble Hill Pump Station Seismic Upgrade | Delta | 1,800,000 | - | 1,800,000 | 1,800,000 | - | 0% | Not Started | N | (e) | Coordinating with City of Delta. |
| Pebble Hill Reservoir No. 3 Seismic Upgrade | Delta | 9,500,000 | 356,321 | 9,143,679 | 9,500,000 | - | 4% | Ongoing | Y | | |
| Pebble Hill Reservoir Seismic Upgrade | Delta | 14,800,000 | 422,949 | 14,377,051 | 12,800,000 | 2,000,000 | 3% | Ongoing | N | (b) | Design delays due to geotechnical conditions. |
| Reservoir Isolation Valve Automation | Regional | 6,450,000 | 1,149,196 | 5,300,804 | 6,450,000 | - | 18% | Ongoing | Y | | Delayed due to scope refinement. |
| Scour Protection Assessments and Construction General | Regional | 4,000,000 | - | 4,000,000 | 4,000,000 | - | 0% | Not Started | Y | | |
| Second Narrows Crossing (Tunnel) | Burnaby/DNV | 468,550,000 | 231,707,255 | 236,842,745 | 468,550,000 | - | 49% | Ongoing | N | | Construction taking longer than anticipated |
| Seymour Falls Boat Wharf | Dist of North Van | 800,000 | - | 800,000 | 800,000 | - | 11% | Ongoing | Y | | Tender document completeion in progress |
| Seymour Lake Debris Boom | Dist of North Van | 800,000 | - | 800,000 | 800,000 | - | 36% | Ongoing | Y | | Tender document completeion in progress |
| Seymour Main No. 2 Joint Improvements | Dist of North Van | 5,252,000 | 488,220 | 4,763,780 | 5,252,000 | - | 16% | Ongoing | N | | Work delayed to coordinate with Second Narrows Crossing |
| Seymour Main No. 5 III ( North ) | Dist of North Van | 236,900,000 | 4,244,835 | 232,655,165 | 236,900,000 | - | 2% | Ongoing | Y | | |
| Seymour Reservoir Mid-Lake Debris Boom | Dist of North Van | 2,300,000 | 161,961 | 2,138,039 | 2,300,000 | - | 8% | Ongoing | Y | | |
| Sunnyside Reservoir | Surrey | 19,300,000 | 7,472,318 | 11,827,682 | 19,300,000 | - | 42% | Ongoing | Y | | |

**Metro Vancouver**

# ATTACHMENT 2

**Water Services Capital Expenditures Summary**
**As of April 30, 2021**

| | | Lifetime | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Project Name** | **Project Location** | **Total Project Budget** | **Total Expenditures to Date** | **Remaining Budget** | **Total Projected Expenditures** | **Projected Remaining Budget** | **Percent Complete** | **Status** | **Project on Schedule?** | **Note** | **Comments** |
| Vancouver Heights System Resiliency Improvements | Burnaby | 1,500,000 | - | 1,500,000 | 1,500,000 | - | 0% | Not Started | Y | | |
| Westburnco Pump Station - Back-up Power | New Westminster | 23,500,000 | 977,932 | 22,522,068 | 23,500,000 | - | 4% | Ongoing | N | | Design delay, scope modification. |
| | | **1,837,952,000** | **265,686,900** | **1,572,265,100** | **1,835,952,000** | **2,000,000** | | | | | |
| **Infrastructure Upgrade Capital** | | | | | | | | | | | |
| CWTP Ozone Generation Upgrades for Units 2 & 3 | Coquitlam | 7,000,000 | 2,791,708 | 4,208,292 | 7,000,000 | - | 40% | Ongoing | N | | Delay due to operational requirements. |
| Lower Seymour Conservation Reserve Learning Lodge Replacement | Dist of North Van | 5,000,000 | 597,764 | 4,402,236 | 5,000,000 | - | 12% | Ongoing | Y | | |
| Online Chlorine Monitoring Stations | Regional | 4,150,000 | - | 4,150,000 | 4,150,000 | - | 0% | Not Started | Y | | |
| Sapperton Main No. 1 New Line Valve and Chamber | New Westminster | 3,800,000 | 868,373 | 2,931,627 | 3,800,000 | - | 23% | Ongoing | N | | Tie-ins delayed |
| South Delta Main No. 1 - 28 Ave to 34B Ave | Delta | 22,650,000 | 18,464,225 | 4,185,775 | 22,650,000 | - | 97% | Ongoing | N | | Construction delays due to unforeseen environmental and geotechnical conditions. |
| South Delta Mains - 28 Ave Crossover | Delta | 10,500,000 | 10,213,321 | 286,680 | 10,500,000 | - | 97% | Ongoing | N | | Utility conflicts and additional scope of work. |
| Tilbury Junction Chamber Valves Replacement with Actuators | Richmond | 5,600,000 | 4,374,234 | 1,225,766 | 5,600,000 | - | 78% | Ongoing | Y | | |
| Water Meter Upgrades | Regional | 22,400,000 | 3,706,632 | 18,693,368 | 22,400,000 | - | 17% | Ongoing | N | | Procurement delays. |
| Water Optimization - Flow Meters (Non-billing) Phase 1 | Regional | 16,500,000 | - | 16,500,000 | 16,500,000 | - | 0% | Not Started | Y | | |
| Water Optimization - Flow Meters (Non-billing) Phase 2 | Regional | 19,500,000 | - | 19,500,000 | 19,500,000 | - | 0% | Not Started | Y | | |
| Water Optimization - Instrumentation | Regional | 11,400,000 | - | 11,400,000 | 11,400,000 | - | 0% | Not Started | Y | | |
| Water Optimization Automation & Instrumentation | Regional | 9,540,000 | 7,536,816 | 2,003,184 | 9,540,000 | - | 79% | Ongoing | N | | Procurement delays. |
| | | **138,040,000** | **48,553,073** | **89,486,927** | **138,040,000** | **-** | | | | | |
| **Opportunity Capital** | | | | | | | | | | | |
| Capilano Hydropower | Dist of North Van | 114,250,000 | 218,368 | 114,031,632 | 114,250,000 | - | 1% | Ongoing | N | | Project currently on hold |
| | | **114,250,000** | **218,368** | **114,031,632** | **114,250,000** | **-** | | | | | |
| **Grand Total Water Services** | | **8,171,321,000** | **623,903,684** | **7,547,417,316** | **8,150,011,000** | **21,310,000** | | | | | |

**Notes:**

(a) Contingency not required.
(b) Construction costs lower than estimated.
(c) City of Surrey share - 33.72%, Township of Langley share - 66.28%.
(d) Project cancelled.
(e) Cost sharing proposal with City of Delta
(f) Project start is dependent on a 3rd party. External agency yet to begin work.
(g) GVWD Cost Share City of Coquitlam, Fortis and BC Hydro
(h) Extent of construction scope less than originally anticipated.
(i) Design change/consutant
(j) Extent of construction scope increased

**ATTACHMENT 3**

# Capital Project Status Information
# April 30, 2021

**GREATER VANCOUVER WATER DISTRICT (Water Services)**

Major GVWD capital projects are generally proceeding on schedule and within budget. The following capital program items and exceptions are highlighted:

Infrastructure Growth Program

- **Annacis Main No. 5 (Marine Crossing)** – A 2.3 km long, 4.5 metre diameter water supply tunnel is required under the Fraser River to meet growing water demand south of the Fraser and to provide increased system resiliency. Detailed design, which was awarded to Hatch Corporation, is now complete. Property acquisition along the tunnel alignment is nearing completion, and construction management services have been awarded. The RFP for construction was issued in April 2020 and will close in late June. Construction is anticipated to commence in early 2022.

- **Annacis Main No. 5 (South)** – This project comprises approximately 3.0 km of 1.8 metre diameter steel pipe connecting the south shaft of the Annacis Water Supply Tunnel to the Kennedy Reservoir in the City of Surrey. Preliminary design has been completed and detailed design is in progress and expected to be complete in February 2022.

- **Cape Horn Pump Station No. 3** – Cape Horn Pump Station No. 3 with a back-up power system, will supplement the existing pump station to deliver Coquitlam source water to meet growing demand in the municipalities south of the Fraser River. Preliminary design of the new station started Q1 2020 and is expected to be complete Q3 2021.

- **Coquitlam Intake No. 2** – A new intake, tunnel and treatment plant are proposed at the Coquitlam Reservoir to increase the regional supply from this source and meet growing future demand. The Draft Project Definition Report was received in December 2019. A Value Engineering workshop was held in May 2020 to review options to reduce risks, confirm costs and improve the schedule. The Final Project Definition Report, which will incorporate suitable options identified in the Value Engineering, is expected to be completed in July 2021.

- **Coquitlam Main No. 4** – This 12 km long steel water main, consisting of the Central, South and Cape Horn Sections, will increase the transmission capacity from the Coquitlam source to the Cape Horn Pump Station and Reservoir in the City of Coquitlam. This project is required to address capacity constraints in the existing Coquitlam transmission system and also provide additional transmission capacity for the Coquitlam Intake No. 2. Detailed design of the Central and South Sections continues. A Request for Proposal for the 2.3 km tunnel portion of the South Section will be issued in June 2021. Detailed design of the Cape Horn section is now underway.

- **Fleetwood Reservoir** – Phase 1 of the Fleetwood Reservoir project includes a 13.6 ML reservoir, valve chamber, piping, access building and associated work located at Meagan Ann MacDougall Park in the City of Surrey. Detailed design is complete. The City of Surrey is finalizing the Property

Lease Agreement and a Coordinated Works Agreement to include a portion of the city water main in the tender package. Construction is expected to commence in Q3 2021.

- **Jericho Reservoir** – Phase 1 of the Jericho Reservoir project includes a 20.6 ML reservoir, chambers, piping and associated work located at 20400 73A Avenue in the Township of Langley. Construction is approximately 95% complete. Tie-ins and commissioning of the valve chamber are complete. The reservoir is scheduled to enter service in July 2021.

- **Kennedy Newton Main** – This project comprises approximately 9.0 km of 1.8 metre diameter steel water main between the Kennedy Reservoir and the Newton Reservoir in the City of Surrey and is divided into 3 phases. Construction of Phase 1, between 72nd Avenue and 84th Avenue, is complete. Construction of Phase 2, between 72nd Avenue and Newton Reservoir commenced in September 2020. Design of the remaining Phase 3, from 84th Avenue to Kennedy Reservoir, is in progress and expected to be completed in November 2021.

- **Newton Pump Station No. 2** – This project, located at 6287 128th Street in the City of Surrey, consists of replacing the existing Newton Pump Station and includes full back-up power redundancy, connections to existing and future infrastructure, and installation of new outlets to the existing Newton Reservoir. The preliminary design phase was completed in December 2019 and detailed design is in progress with completion expected in October 2021. Construction is anticipated to start in Summer 2022.

- **Port Mann Main No. 2 (South)** – This 2.8 km long, 1.5 metre diameter steel water main will twin the existing Port Mann Main No. 1 between the south shaft of the Port Mann Water Supply Tunnel and the Whalley Main in the City of Surrey. The project is required to meet growing water demand south of the Fraser River. The main installation construction contract was completed in July 2020 with final tie-ins and commissioning planned for summer/fall 2021.

- **Whalley Main** – This 2.0 km long, 1.5 metre diameter steel main will twin the existing Whalley Clayton Main between the Whalley Reservoir and the Whalley Kennedy Link Main in the City of Surrey. The main installation construction contract commenced in June 2019 and Substantial Completion was achieved on March 2021. Tie-ins and commissioning are planned to commence in fall 2021.

Infrastructure Maintenance Program

- **Douglas Road Main No. 2 – Still Creek Section** - This project comprises approximately 2.5 km of 1.5 metre diameter steel pipe with trenchless crossings of Highway 1, Still Creek and the BNSF rail line. The water main alignment has been finalized in consultation with the City of Burnaby. The detailed design phase is in progress and the required rights of ways are in the process of being finalized. The Project is planned to be constructed in three phases, with the North Open Cut Section commencing in June 2021. Design of the Trenchless Crossing Section is complete with construction planned to start in fall 2021. Design of the South Open Cut Section is underway.

  **Douglas Road Main No. 2 – Vancouver Heights Section** - This project comprises approximately 2.0 km of 1.5 metre diameter steel pipe connecting the Vancouver Heights Reservoir to the Douglas Road Main No. 2 at Beta Avenue and Albert Street in the City of Burnaby. The installation construction contract is complete. Final tie-ins and commissioning are planned for fall 2021.

- **Central Park Main No. 2 – Patterson to 10th Ave** - This project comprises approximately 7.0 km of 1.2 metre diameter steel pipe connecting the Central Park Pump Station in Burnaby to the existing Central Park Main in New Westminster at 10th Avenue. The water main is divided into three phases with the 500 m long Maywood Pre-build completed in December 2020. Construction of Phase 1 of the project commenced in October 2020 with completion anticipated in mid-2021. Design of Phase 2 is underway and is expected to be complete in fall 2021.

- **E2 Shaft Replacement** – The E2 Shaft, which has controlled ground water in the East Abutment of Cleveland Dam since the 1950's is nearing the end of its service life and needs to be replaced by a system of horizontal drains. A total of 6 horizontal drains have been completed, and continue to be monitored. The project consultants and Technical Review Board have analyzed the information. No additional drains are required at this time. The project is now complete.

- **Capilano Main No. 5 (Stanley Park Section)** – This 1.4 km long steel water main, in a tunnel, will replace the aged existing Capilano Main No. 4 through Stanley Park to meet growing water demand and provide increased system resiliency. Detailed design is nearing completion. The procurement phase for construction will commence in late 2021, with construction anticipated to start in late 2022.

<u>Infrastructure Resilience Program</u>

- **Mackay Creek Debris Flow Mitigation** – Detailed design and construction engineering services for this project were awarded to BGC Engineering Inc. The construction contract was awarded to BEL Contracting. Construction commenced in spring 2019 and was completed in March 2020. Site replanting began in fall 2020 and is expected to be completed in late 2021.

- **Second Narrows Water Supply Tunnel** – This project comprises a 1.1 km long, 6.5 metre diameter water supply tunnel under Burrard Inlet, between North Vancouver and Burnaby, to increase the reliability of supply in the event of a major seismic event and provide additional long term supply capacity. The contract for construction was awarded to the Traylor-Aecon General Partnership in October 2018. Construction of the north shaft is complete and construction of the south shaft is substantially complete. The Tunnel Boring Machine began tunnel excavation in the fall of 2020 and the tunnel is now approximately 40% complete.

- **Capilano Raw Water Pump Station – Back-up Power** – This project consists of installing diesel generators to provide 8 MW of back-up power to the pump station. Shop drawing submittals for the pre-purchased electrical equipment are ongoing, with a portion of the equipment already delivered. Construction is anticipated to start early 2022 with overall project completion in 2024.

- **Coquitlam Intake Tower Seismic Upgrade** – The Coquitlam Intake Tower is located in the southeast corner of the Coquitlam Reservoir. Constructed in 1913, the tower provides the GVWD its primary intake of water from Coquitlam Reservoir. The Tower is a 27 metre-high and 5.5 metre diameter unreinforced concrete structure, founded on bedrock. Detailed design of the seismic upgrade is 60% complete. Completion of detailed design is expected at the end of 2021. Due to coordination with BC Hydro work and water supply operations, construction will be completed over two winter periods 2024 - 2026.

- **Pebble Hill Reservoir No. 1, 2 and 3 Seismic Upgrade** – Pebble Hill Reservoir in south Delta is comprised of three units. Detailed design for the seismic upgrade is complete. Construction is scheduled to be completed in stages, taking only one unit out of service at any time. Construction of Units 1 and 2 has been awarded and will commence in fall of 2021

- **Westburnco Pump Station – Back-up Power** – This project consists of installing diesel generators to provide 5 MW's of back-up power to the pump station. Preliminary design was completed in 2019 and detailed design continues in 2021 and 2022.

Infrastructure Upgrade Program

- **Coquitlam Ozone Upgrade** – This project consists of upgrades to the ozone generators at the Coquitlam Water Treatment Plant. The generators for units 1 and 2 have been replaced and are in service. Unit 3 will be upgraded in Q3 2021

45510102

To: Water Committee

From: Joe Sass, Director, Financial Planning & Operations / Deputy CFO

Date: June 18, 2021 Meeting Date: July 15, 2021

Subject: **Engagement Plan for Water DCC Program Implementation**

**RECOMMENDATION**

That the GVWD Board direct staff to proceed with engagement on the proposed implementation of a water DCC program as described in the report dated June 18, 2021, titled "Engagement Plan for Water DCC Program Implementation".

**EXECUTIVE SUMMARY**

The Greater Vancouver Water District (GVWD) Act does not currently allow Metro Vancouver to have development cost charges (DCCs) as a funding mechanism for its water function. In the current *Board Strategic Plan*, the Metro Vancouver Board committed to pursuing the adoption of a water DCC program. In 2020, an internal cross-departmental DCC Steering Committee took up leading this project concurrently with undertaking an update of the existing liquid waste DCC program.

Work to date has included initial engagement, industry capacity analysis, and rate modelling, resulting in a set of draft DCC *rates in principle*. Following Board review of the rates in principle and engagement plan in this report, there will be further engagement with relevant levels of government, First Nations, stakeholders, and the public, before finalizing the proposal and seeking Board approval to request that the Province of British Columbia enact the required legislation that would allow the GVWD to charge water DCCs.

**PURPOSE**

To receive feedback and authorization for further engagement from the Water Committee on the proposed implementation of a water development cost charge (DCC) program, and the proposed engagement plan which will solicit input on the DCC program implementation from relevant levels of government, First Nations, stakeholders, and the public.

**BACKGROUND**

While Metro Vancouver has operated a liquid waste DCC program of the Greater Vancouver Sewerage and Drainage District (GVS&DD) since 1997, there has never been a water DCC program in place, as the Greater Vancouver Water District (GVWD) Act does not currently permit it. DCCs are a mechanism to fund the cost of infrastructure expansion required for new development in addition to other revenue sources. The provincial *Local Government Act* allows local governments to charge DCCs for growth-driven costs, but since the GVWD operates under its own unique act, special legislation is required to introduce DCCs. The concept of Metro Vancouver funding the growth portion of its regional water infrastructure through DCCs has been encouraged by most members for several years, and in the *2019-22 Board Strategic Plan* (Reference 1), the Metro Vancouver Board committed to

pursuing the adoption of water DCCs. With growth projects comprising 54% of the long-term water capital program, ensuring a diverse and robust revenue model is critical.

**WATER DCC PROGRAM IMPLEMENTATION PROCESS**

The DCC program implementation process has been driven by a DCC Steering Committee of representatives of the Metro Vancouver finance, liquid waste, and water departments. This Steering Committee is simultaneously overseeing both this implementation of a water DCC program as well as an update to the liquid waste DCC program, so that engagement with relevant parties can be undertaken concurrently. The Steering Committee's work has included:

- **Engagement.** Developing and implementing approaches to information sharing and engagement with members, the Province, First Nations, relevant industry stakeholders, and the public, as described in detail in a subsequent section.
- **Industry capacity analysis.** The procurement of a report on the development industry's capacity to absorb a new water DCC.
- **Rate modelling.** The modelling of DCC rates necessary to support growth projects, with consideration of variables including planning horizon, application of interest costs, assist factor, and methodology.
- **Preparing *rates in principle*.** Development of proposed *rates in principle*, following consideration of engagement to date, industry capacity analysis, and rate modelling; these rates are being brought forward for Board approval to use in further engagements with relevant parties.

**DCC POLICY FRAMEWORK**

The water DCC policy framework has been designed to align with the liquid waste DCC policy framework in most respects, including the following factors:

- **Land use categories.** DCCs are to be based on four separate land use categories: single-family dwelling, townhouse, apartment, and non-residential.
- **Units for charging DCCs.** Residential developments will be charged per unit/dwelling, while a DCC for a non-residential development will be charged per square foot.
- **Assist factor.** The assist factor is the portion of the growth project that is to be funded from water sales to GVWD members rather than DCCs. Increasing the assist factor shifts more of the cost of system expansion (growth) from DCCs to water sales.

There is one significant point of difference between the proposed water DCC policy framework and the existing liquid waste DCC policy framework:

- **Sub-regional areas.** The liquid waste DCC program is separated into four sewerage areas: Vancouver, Lulu Island West, North Shore, and Fraser. Each sewerage area has its own unique fee structure based on its development requirements. The water DCC program will operate at the regional level, with one fee structure.

Given this framework, rates are then calculated based on growth projections, projected costs of growth projects, projected interest rates, and assist factors, among other variables.

One key lesson learned in past engagement on the liquid waste DCC program shows that regular reviews of about every three to five years of the DCC program, and in particular the rates, is helpful

to members and other stakeholders to ensure that increases can be more predictable and easier to absorb. This practice will be built in to the management of the water DCC program.

**PROPOSED WATER DCC RATES AND ASSIST FACTOR**

A set of proposed DCC rates in principle has been developed and is being brought for Board approval for use in further engagement with relevant parties. The water DCC rates in principle have been calculated to include:

- Interest on project costs
- A 90% assist factor; this is recommended to ensure that DCC rates are within the capacity of industry's ability to pay
- A 30-year planning horizon

The proposed water DCC rates in principle are:

| Single-Family | Townhouse | Apartment | Non-Residential |
|---:|---:|---:|---:|
| $1,338 / unit | $1,139 / unit | $852 / unit | $0.68 / $ft^2$ of floor area |

**ENGAGEMENT PROCESS**

Engagement to date has been undertaken jointly on this project to implement the new water DCC program, as well as on the update to the liquid waste DCC program.

The consultation process to date has involved:

- Q4 2020: Letters to members, the University Endowment Lands, and First Nations, outlining the DCC projects and inviting initial comments. Preliminary discussions with the Province.
- Q4 2020: Initial contact with industry groups, with feedback showing that discussions would be more appropriate once draft rates were developed.
- Q1 2021: Development of a dedicated webpage (Reference 2) and FAQ document (Reference 3) on metrovancouver.org to provide information on both DCC projects. Initiation of a DCC email address and a DCC mailing list on metrovancouver.org to allow for convenient channels of communication.
- Q2 2021: Presentations to the Regional Engineers Advisory Committee (REAC), Regional Administrative Advisory Committee (RAAC), and Regional Finance Advisory Committee (RFAC), with discussions indicating substantial support from members for both water and liquid waste programs. Direct follow up with each of the region's First Nations.

Feedback on the rates thus far has been supportive. REAC expressed a desire for higher rates (via reduced assist factor), while RAAC articulated more caution, recognizing the impact of rate increases both to the market, as well as to their own municipal DCCs. RFAC focused primarily on how to move toward a model where growth is contributing to more of the costs, as well as how Metro Vancouver, TransLink, and members can collaborate in the future on DCCs. Perhaps not surprisingly, Metro Vancouver received renewed calls for annual incremental increases, much like the *Community Charter* regulation (*Development Cost Charge Amendment Bylaw Approval Exemption Regulation*) that exempts a DCC Bylaw from the approval requirements in the *Local Government Act* once each year for up to four years as long as increases do not exceed the Vancouver Consumer Price Index.

With this report, the proposed rates in principle will be reviewed with the Metro Vancouver Water Committee, Finance and Intergovernment Committee, and with the GVWD Board prior to broader engagement with relevant levels of government, First Nations, industry stakeholders, and the public over the next three months. The next steps in the engagement process will include:

- Continued discussions with the Province on passing the necessary legislation to implement the water DCC program, and on the liquid waste DCC program update
- Continued discussions with First Nations
- Ongoing updates to the dedicated DCC webpage and FAQ document
- Q3 2021: A series of online forums and one in-person forum with specific invitations sent out to Metro Vancouver members, members of the development community (including the Urban Development Institute, the Greater Vancouver Home Builders Association, boards of trade and chambers of commerce in the region), and promoted to industry through industry associations and to the public through the metrovancouver.org website and relevant Metro Vancouver mailing lists
- Q3 2021: Reports to the Metro Vancouver Water Committee, Finance and Intergovernment Committee, and the GVWD Board, to provide findings of the engagement process and recommendations for moving forward with the implementation of a water DCC program
- Q3/4 2021: Submission of the draft bylaw and report to the Province

**ALTERNATIVES**

1. That the GVWD Board direct staff to proceed with engagement on the proposed implementation of the water DCC program as described in the report dated June 18, 2021, titled “Engagement Plan for Water DCC Program Implementation”.

2. That the GVWD Board provide alternate direction to staff regarding the proposed water DCC policy framework, rates and assist factor, and/or the engagement plan as described in the report dated June 18, 2021, titled “Engagement Plan for Water DCC Program Implementation”.

**FINANCIAL IMPLICATIONS**

If the Water Committee approves alternative 1, the report will be forwarded to the GVWD Board for approval. The cost of the engagement process will be funded through the existing water function budget.

If the Water Committee approves alternative 2, the Committee may wish to recommend changes to the proposed water DCC policy framework, rates, or engagement plan. Further analysis may be required to determine the resulting financial impacts.

**OTHER IMPLICATIONS**

While DCCs are an important tool for local governments to use in funding infrastructure driven by growth, it is important to consider the cumulative impact that they have on developers’ abilities to pay for sites, which can in turn have effects on the real estate market including reduced supply and price increases. The proposed draft DCC rates in principle have been prepared with consideration given to industry’s capacity for increased costs. However, the increases may affect the potential for

other local governments in the region to raise their own DCC rates without significantly impacting the financial viability of development in the region.

**CONCLUSION**

Following up on a commitment to pursue the adoption of a water DCC program in the current *Board Strategic Plan*, an internal cross-departmental DCC Steering Committee is recommending the implementation of a DCC policy framework for the water function that closely aligns with the existing liquid waste DCC policy framework, but with fees set out at the regional level rather than at a sub-regional level. Draft DCC rates in principle contained in this report have been developed based on initial engagement, industry capacity analysis, and rate modelling.

The engagement plan in this report to discuss the rates in principle with relevant levels of government, First Nations, stakeholders, and the public, will be central to finalizing the proposed DCC policy framework and draft DCC rates, before seeking Board approval to request that the Province of BC enact the required legislation to allow for water DCCs.

To advance the implementation of an important funding mechanism for growth-driven projects as the region experiences an increasing need for system expansion and increasing costs of infrastructure, staff recommend Alternative 1.

**REFERENCES**

1. Metro Vancouver Board Strategic Plan 2019-2022
2. Development Cost Charges webpage
3. FAQ Document

46289921

To: Water Committee

From: Lucas Pitts, Acting Director, Policy, Planning and Analysis, Water Services

Date: June 23, 2021 Meeting Date: July 15, 2021

Subject: **Regional Water Conservation Impacts on Capital Planning**

**RECOMMENDATION**

That the Water Committee receive for information the report dated June 23, 2021, titled "Regional Water Conservation Impacts on Capital Planning".

**EXECUTIVE SUMMARY**

Metro Vancouver has some of the highest per capita water use when compared to other cities in Canada. From 2000–2019, the service population of the GVWD has grown by 642,000 with per capita water consumption steadily declining. However, it is expected that over the next 20 years overall water consumption will begin to steadily increase as the limits of reductions from improvements in plumbing efficiencies, public awareness and increased density are being reached. If Metro Vancouver is able to drive increased conservation measures, it may be possible to delay the construction of the Coquitlam Lake Water Supply Project and potentially other capital projects. To achieve that, per capita consumption will need to drop below 200 litres per capita per day. This could be achieved through a strengthened Drinking Water Conservation Plan, increased awareness and enforcement of Water Conservation Bylaws, conservation-oriented pricing structures, and water metering, supported by behaviour change campaigns.

**PURPOSE**

This information report provides Water Committee with current water use statistics as well as predictions for future residential water use and their impacts on capital planning.

**BACKGROUND**

As identified in the *Water Supply Outlook 2120* study, mounting stresses on Metro Vancouver's water supply are occurring because of growing populations, urbanization and climate change. Of those threats, climate change poses the biggest uncertainty to the overall water supply. Precipitation forecasts indicate drier summers that could extend later into the year. Hotter days and longer dry spells over the summer months, combined with a reduction in the snowpack, could put a strain on the existing water supply during times of the year when temperatures are high and water is in greatest demand. Potentially, many different solutions exist to manage and meet these challenges. Metro Vancouver will address these vulnerabilities over time with planned increases in supply and storage capacity, including the construction of a second intake in the Coquitlam Reservoir that can access increased storage volumes to deeper depths. However, investing in capital infrastructure is expensive and Metro Vancouver may be able to delay some of the capital projects if we implement best practices to more sustainably manage residential, industrial, commercial and agricultural use of drinking water.

## WATER DEMAND PLANNING

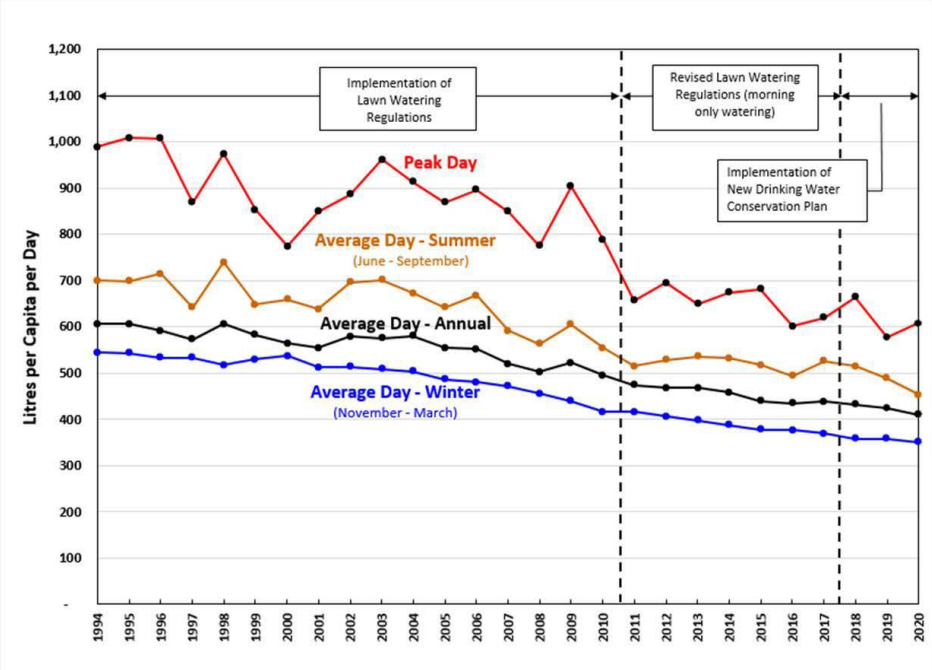
Metro Vancouver per capita has some of the highest residential water consumption when compared to other major municipalities in Canada, as shown in Figure 1.

**Figure 1 – Comparison of Residential per Capita Consumption (2019)**

| | Average Residential Consumption (LPCD) | Residential Metered Connections % |
|---|---|---|
| Capital Regional District | 232 | 100% |
| Metro Vancouver | 247 | 31% |
| Winnipeg | 149 | 100% |
| Edmonton | 176 | 100% |
| Calgary | 206 | 100% |
| City of Toronto | 210 | 100% |
| Portland, Oregon | 173 | 100% |

Over the last 20 years (2000–2019), the service population of the GVWD has grown by 642,000, at an annual growth rate of approximately 1.7%. In comparison, as shown in Figure 2, the per capita water consumption has been steadily declining. It is expected that over the next 20 years' overall water consumption will begin to steadily increase. This is because the limits of reductions from improvements in plumbing efficiencies, public awareness and increased density are being reached. Most communities across Canada saw comparable declines over the last 20 years for similar reasons.

**Figure 2 – Regional Water Use 1994-2020**



In 2016, Metro Vancouver undertook a *Comprehensive Regional Water System* study that considered various demand scenarios over the next 100 years to predict when potential shortages in water supply would occur. The timing for the next increment of supply was identified for the mid-2030s. The results of this study were used to prepare the *Water Supply Outlook 2120* report that confirmed the Coquitlam Lake Water Supply Project as the most cost-effective option for increasing supply. The results of that study are presented below in Figure 3.

**Figure 3 – Comprehensive Water System Study 2036 Predicted Demand Factors**

| **Item** | **2016** | **2036 (Predicted range)** |
|---|---|---|
| Population (millions) | 2.5 | 3.1 - 3.4 |
| Total Water Demand (BL) | 394 | 405 - 443 |
| Residential Per Capita Demand (L/Capita/Day) | 268 | 202 - 212 |
| Water Demand on MV (BL) | 383 | 393 - 441 |
| Annual Water Supply Gap (BL) | 0 | 5 - 55 |
| **Demand and Supply Uncertainties:** Growth, density, conservation effectiveness, water supply variability, water quality, climate change | | |

The modelling made several assumptions on regional efforts to reduce water consumption over the period from 2016 to 2036. As can be seen, the per capita consumption is predicted to decline from 268 Litres per Capita per day (LPCD) to a range between 202 – 212 LPCD. The per capita decline in water consumption was expected to be achieved primarily by increased metering, increased conservation, increased density and improved plumbing efficiencies. With those reductions included, the study identified a potential water supply gap of between 5-55 BL identified in the three scenarios modelled. The *Water Supply Outlook 2120* used these results to identify the mid-2030s for the timing of the Coquitlam Lake Water Supply Project.

**Options**

It may be possible to defer the completion of the Coquitlam Lake Water Supply Project, and potentially other capital projects if regional conservation efforts reduce overall water demand by more than the modelling predictions. To achieve that, per capita consumption will need to drop below 200 L/Cap/Day by 2036 and would require a concerted regional effort to ramp up conservation initiatives. This could include updating and strengthening the Drinking Water Conservation Plan, enforcement of Water Conservation Bylaws, conservation-oriented pricing structures, behaviour change campaigns, enhanced educational efforts, and increased adoption of water metering. It should be noted, however, that should the region fail to achieve the conservation efforts identified in the modelling then there will be an additional risk of experiencing a seasonal supply shortage in the coming decade. It is important to note that Metro Vancouver cannot accomplish this on its own, concerted efforts regionally from member jurisdictions will be required in order to achieve any water conservation goals.

In 2021 Metro Vancouver will be working closely with our member jurisdictions to potentially strengthen the Drinking Water Conservation Plan to allow for the banning of lawn watering during drought years while limiting impacts on local businesses.

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

**FINANCIAL IMPLICATIONS**
This is an information report. No financial implications are presented.

**CONCLUSION**
Decision-making for growth projects should always seek to ensure that all possible measures are considered to defer projects to reduce the household impact from increasing water rates. The *Comprehensive Regional Water System* study and the *Water Supply Outlook 2120* identify the mid-2030s for the next increment in water supply for the Region (Coquitlam Lake Water Supply Project). To potentially defer this project, and other growth-related projects, a concerted regional effort will be required to reduce overall water consumption especially during the peak summer season where water consumption typically increases by 50% or more. Metro Vancouver will be working closely with its member jurisdictions to identify ways to reduce regional water consumption.

**Reference**
Water Supply Outlook 2120

43287903

To: Water Committee

From: Roy Moulder, Director, Purchasing and Risk Management, Financial Services
Goran Oljaca, Director, Engineering and Construction, Water Services

Date: June 24, 2021 Meeting Date: July 15, 2021

Subject: **Award of Contract Resulting from Request for Proposal (RFP) No. 20-054: Construction of Douglas Road Main No. 2 – Still Creek Section - Microtunnel**

**RECOMMENDATION**

That the GVWD Board:

a) approve award of a contract in the amount of $13,495,049.00 (exclusive of taxes) to Ward & Burke Microtunnelling Ltd. resulting from Request for Proposal (RFP) No. 20-054: Construction of Douglas Road Main No.2: Still Creek Section - Microtunnel, subject to final review by the Commissioner; and
b) authorize the Commissioner and the Corporate Officer to execute the required documentation once the Commissioner is satisfied that the award should proceed.

**EXECUTIVE SUMMARY**

Metro Vancouver is constructing Douglas Road Main No. 2 – Still Creek Section (DRM2-SC) along Douglas Road, between Lougheed Highway and Canada Way, in the City of Burnaby. This new 1.5 metre-diameter, 2.2 km-long water main will replace the existing Douglas Road Main No. 1, which has reached the end of its service life. The project is being delivered in three phases, including the North Section, Microtunnel Section and the South Section.

As a result of Request for Qualifications (RFQ) No. 20-023, four (4) experienced trenchless construction firms were shortlisted and invited to respond to RFP No. 20-054 for the 660 metre-long microtunnel section of the project. Ward & Burke Microtunnelling Ltd. was identified as offering the technically strongest and lowest cost proposal. Based on the evaluation of proposals, it is recommended to award RFP No. 20-054 to Ward & Burke in the amount of $13,495,049.00 (exclusive of taxes).

**PURPOSE**

This report is to advise the GVWD Board of the results of RFP No. 20-054: Construction of DRM2-SC - Microtunnel Section and to recommend award of the contract in the amount of $13,495,049.00 (exclusive of taxes) to Ward & Burke Microtunnelling Ltd. to enable the DRM2-SC project to proceed to completion.

**BACKGROUND**

Pursuant to the *GVWD Officers and Delegation Bylaw No. 247, 2014 (Bylaw)* and the *Procurement and Real Property Contracting Authority Policy (Policy)*, procurement contracts which exceed a value of $5 million require the approval of the GVWD Board of Directors.

This report is being brought forward to the Water Committee to consider a recommendation to the GVWD Board to authorize award of a contract for the construction of DRM2-SC – Microtunnel Section.

**PROJECT DESCRIPTION**

As shown in the attachment to this report, Metro Vancouver is planning to construct DRM2-SC primarily along Douglas Road, between the intersection of Lougheed Highway and Douglas Road and the intersection of Kincaid Street at Canada Way, in the City of Burnaby, BC. This section will include installation of a 1.5 metre-diameter water main and construction of two underground valve chambers along the alignment.

The new water main, approximately 2.2 km in length, will pass through variable soil conditions and construction will be phased over three years in three separate sections.

- North Section – approx. 560 metres along Douglas Road, between Lougheed Hwy and Roy Street.
- **Microtunnel Section – approx. 660 metres along Douglas Road, between Roy Street and Manor Street.**
- South Section – approx. 1,060 metres between Douglas Road at Manor Street and Canada Way at Kincaid Street.

This RFP requested proposals for the completion of the 660 m-long microtunnelling section to facilitate several major crossings from North to South under the Burlington Northern Santa Fe Railway (BNSF Railway), Still Creek, and the Trans-Canada Highway (TCH 1).

As a result of Request for Qualifications (RFQ) No. 20-023, four (4) experienced trenchless construction firms were shortlisted and invited to respond to RFP No. 20-054. The RFP closed on April 30, 2021 and the three (3) submissions received are summarized in Table 1.

**Table 1: Proposal Submissions**

| Proponent | Proposed Fee (exclusive of taxes) |
|---|---|
| Ward & Burke Microtunnelling Ltd. | $13,495,049.00 |
| Innovative Pipeline Crossing Inc. | $24,324,955.00 |
| Michels Canada Company | $36,907,281.50 |

Proposals were evaluated based on 50% technical and 50% financial. The technical component of the proposals was evaluated by staff within the Water Services Department and the financial component was evaluated by staff within the Purchasing and Risk Management Division.

The proposal from Ward & Burke Microtunnelling Ltd. was identified as offering the technically strongest and lowest cost proposal. Ward & Burke Microtunnelling Ltd. demonstrated excellent knowledge of the project through their proposal and proposed construction methodology and have had an excellent record of meeting project schedules and timelines as demonstrated by their latest projects with MV, including the construction of the South Surrey Interceptor, the Douglas Trunk Sewer, and the South Delta Main No. 1, among other project references. Ward & Burke Microtunnelling Ltd.'s references have all given the company excellent feedback and provided confidence in their ability to meet commitments with a high degree of quality in their work and professionalism.

The proposal pricing from Ward & Burke Microtunnelling Ltd. is significantly lower than the other bidders and review shows Ward & Burke Microtunnelling Ltd.'s bid had much lower unit pricing related to mobilization, demobilization and other project startup costs. It is recommended to award RFP No. 20-054 to Ward & Burke Microtunnelling Ltd. in the amount of $13,495,049.00 (exclusive of taxes).

**ALTERNATIVES**

1. That the GVWD Board:
   a) approve award of a contract in the amount of $13,495,049.00 (exclusive of taxes) to Ward & Burke Microtunnelling Ltd. resulting from Request for Proposal (RFP) No. 20-054: Construction of Douglas Road Main No.2: Still Creek Section - Microtunnel, subject to final review by the Commissioner; and
   b) authorize the Commissioner and the Corporate Officer to execute the required documentation once the Commissioner is satisfied that the award should proceed.

2. That the GVWD Board terminate Request for Proposal (RFP) No. 20-054: Construction of Douglas Road Main No.2 Still Creek Section - Microtunnel and direct staff to report back to the GVWD Board with options for an alternate course of action.

**FINANCIAL IMPLICATIONS**

If the GVWD Board approves Alternative 1, a contract will be awarded to Ward & Burke Microtunnelling Ltd. in the amount of $13,495,049.00 (exclusive of taxes) to complete the project work. This amount is within the budget allocated for this project. The proposal from Ward & Burke Microtunnelling Ltd. was identified as offering the technically strongest and lowest cost proposal.

The GVWD Board has the choice not to proceed with Alternative 1, but staff will need further direction in relation to the project. Alternative 2 will result in a delay to the project schedule and is anticipated to add additional costs to the overall project due to the large disparity in proposal pricing.

**CONCLUSION**

RFP No. 20-054 was issued for the Construction of the DRM2-SC - Microtunnel Section and Ward & Burke Microtunnelling Ltd. was identified as offering the technically strongest and lowest cost proposal. Based on the evaluation of the three (3) proposals, it is recommended that the Board

authorize the Commissioner and the Corporate Officer to award and execute the contract to Ward & Burke Microtunnelling Ltd. in the amount of $13,495,049.00 (exclusive of taxes).

**Attachment**
Greater Vancouver Water District – Douglas Road Main No. 2 – Still Creek Microtunnelling Section

45558517

**ATTACHMENT**


DOUGLAS ROAD WATER MAIN – STILL CREEK SECTION
Delta Ave
Lougheed Hwy
SKYTRAIN
N
North Section
Summer 2021 –
Spring 2022
CITY OF BURNABY
Exit Shaft
Roy St
Burlington Northern Santa Fe Railway (BNSF)
Douglas Rd
Still Creek Ave
Still Creek
Westminster Ave
Tunnel Section
Fall 2021 –
Late 2022
Entry Shaft
Regent St
Trans-Canada Hwy 1
Manor St
Exit Shaft
Dominion St
South Section
Spring 2022 –
Spring 2023
Canada Way
Laurel St
Fulwell St
Hardwick St
Goodwin Ave
Canada Way
Sprott St
Royal Oak Ave
LEGEND
Existing water main
Tunnel shaft
Valve chamber
Kincaid St
Forest St
Wayburne Dr
Spruce St

To: Water Committee

From: Bob Cheng, Project Manager, Coquitlam Water Supply, Project Delivery

Date: June 22, 2021 Meeting Date: July 15, 2021

Subject: **Coquitlam Lake Water Supply – Project Update**

**RECOMMENDATION**

That the GVWD Board endorse Option 4 North Intake Smaller Initial Filtration to be carried forward through Permitting and Regulatory Phase into Preliminary Design.

**EXECUTIVE SUMMARY**

In October 2018, the GVWD Board endorsed the North Intake – Phased Filtration option to be carried forward into Project Definition for the Coquitlam Lake Water Supply Project. This is an important, complex project that is needed to meet projected future water demands, even with increased water conservation measures. Since the 2018 Board option endorsement, Project Definition and Value Engineering have been completed and this project update is part of the new Project Delivery stage gate process. This recent work has determined that the 2018 Board endorsed option, with some minor modifications, is still the preferred option (Option 4 – North Intake Smaller Initial Filtration). Option 4 provides some life cycle and capital cost savings compared to the 2018 endorsed option.

Engagement with First Nations, stakeholders and the community has commenced and will continue during the Permitting and Regulatory Phase following the completion of the Project Definition Phase in late 2021. Staff will continue to work with the various ministries at the Province and with the City of Coquitlam with respect to the Environmental Assessment, Water Licence and acquisition of the treatment plant site.

**PURPOSE**

To update the GVWD Board on the Coquitlam Lake Water Supply (formerly Coquitlam Intake No. 2) project definition work and seek endorsement of Option 4 North Intake Smaller Initial Filtration to be carried forward through the Permitting and Regulatory Phase into Preliminary Design.

**BACKGROUND**

The Coquitlam Lake Water Supply Project is needed to access additional water in Coquitlam Lake, that is not accessible with current infrastructure, to meet projected water demand due to population growth, even with increased water conservation measures. In October 2018, the GVWD Board endorsed the North Intake – Phased Filtration option to be carried forward into Project Definition. Following the GVWD Board endorsement the project team completed an Indicative Design and Project Definition Report. Additional Value Engineering was also done. As a result of the findings from the Value Engineering and concerns raised by some member jurisdictions with respect to timing and cost, the project team further reviewed opportunities to reduce or defer project costs.

**PROJECT DEFNITION UPDATE**

The 2018 Board endorsed project option included a north intake located approximately 5 km north of the existing intake; 5 m diameter by 8.4 km long water supply tunnel; and filtration treatment plant built in two phases on a provincially-owned property currently leased out for gravel extraction.

Phase 1 was projected to be completed by the late 2030's and included the new intake, water supply tunnel, and half of the filtration treatment plant required capacity at 1,300 million litres per day (MLD). Phase 2 expansion increased the total filtration treatment capacity to 2,600 MLD and was projected to be built by the late 2050's. This results in an approximate doubling of the current Coquitlam system capacity to meet the projected water demand until the mid-2070's. In 2021, a Value Engineering Optimized Project Options Assessment was undertaken to review the 2018 endorsed project option and explore opportunities to reduce or defer project costs.

**Value Engineering Optimized Project Options**

Four project options were assessed to determine opportunities to reduce or defer project costs, including:

- Option 1 – North Intake Phased Filtration: 2018 Board endorsed option with value engineering improvements incorporated.
- Option 2 – South Intake Phased Filtration: Similar to Option 1 with new intake proposed at the south end of Coquitlam Lake.
- Option 3 – North Intake Deferred Filtration: Ozone and UV treatment in Phase 1, filtration treatment in Phase 2.
- Option 4 – North Intake Smaller Initial Filtration: Same as Option 1 but with a lower filtration treatment capacity in Phase 1.

The results of the assessment are summarized below in Table 1. The cost for the 2018 preferred option, originally estimated at approximately $2.7 billion as an indicative high level estimate prior to completion of the Project Definition Report, was updated to $4.1 billion to align with the Project Delivery Department's new cost estimating framework and to allow for accurate comparison with the 2021 options. The primary drivers for the increase in the estimate was due to the approach to calculate escalation and risk management.

**Table 1 – Value Engineering Optimized Project Options (2021 dollars)**

| | 2018 North Intake Phased Filtration | Option 1 North Intake Phased Filtration | Option 2 South Intake Phased Filtration | Option 3 North Intake Deferred Filtration | Option 4 North Intake Smaller Initial Filtration (2021 preferred option) |
|---|---|---|---|---|---|
| Life Cycle Cost* (Phases 1 & 2) | $7.6B | $7.0B | $7.0B | $7.4B | $6.6B |
| Capital Cost (Phase 1) | $4.1B | $3.9B | $3.8B | $3.1B | $3.9B |
| Filtration Capacity (Phase 1) | 1,300 MLD | 1,300 MLD | 1,300 MLD | 0 MLD | 900 MLD |
| Filtration Capacity (Phase 2) | 2,600 MLD | 2,600 MLD | 2,600 MLD | 2,600 MLD | 2,600 MLD |
| Turbidity Treatment before Phase 2 | YES | YES | YES | NO | YES |

*100 years

Option 1 – North Intake Phased Filtration provides some life cycle and capital cost savings compared to the 2018 Board endorsed option. Option 1 has the added benefit of potentially delaying Phase 2 of the filtration plant further out into the future if the quality of water from the north intake continues to be higher than water from the south intake.

Option 2 – South Intake Phased Filtration provides similar life cycle and capital cost savings as Option 1. While the south intake shortens the water supply tunnel, the costs to build the intake in more geotechnically and seismically challenging conditions offsets savings from a shorter tunnel. The existing treatment system, which is not designed to treat turbidity, will not be available during elevated turbidity events that typically impact the south end of Coquitlam Lake. There may potentially not be enough treatment capacity to meet water demands during the period before Phase 2 expansion.

Option 3 – North Intake Deferred Filtration provides a substantial reduction in capital cost; however, the life cycle cost savings is negligible compared to the 2018 Board endorsed option. This option exposes Metro Vancouver to the risk of not being able to provide water from the Coquitlam source during high turbidity events. As we depend more on the Coquitlam system to supply a larger portion of the regional water demand, greater supply and treatment reliability is required; therefore, this option is not preferred.

Option 4 – North Intake Smaller Initial Filtration provides significant life cycle cost savings and some capital cost savings for Phase 1 relative to the 2018 Board-endorsed option. This option defers some treatment components further out into the future, provides some filtration capacity to address

elevated turbidity events, maximizes the lifespan of the existing treatment plant with the good quality water from the north intake and allows flexibility to expand the system in the future to fully filter water from the Coquitlam source.

The Value Engineering Optimized Project Options Assessment determined that Option 4 – North Intake Smaller Initial Filtration, a modified version of the 2018 Board-endorsed option, as the preferred option, as it provides higher quality source water, allows for some turbidity treatment, defers some Phase 1 costs, and has the lowest life cycle costs. The attachments show the preferred project option.

**Cost Estimate**

The cost estimate for Option 4 – North Intake Smaller Initial Filtration is presented in the new cost estimating framework as follows:

| | |
|---|---|
| • Base construction | $2,173 million |
| • Owner's cost | $ 290 million |
| • Escalation cost | $1,096 million |
| • Risk reserve | $ 357 million |
| Total | $3,916 million |

**Schedule**

The Project Definition Phase will conclude at the end of 2021 and immediately transition to the Permitting and Regulatory Phase. Preliminary Design is anticipated to commence in 2025 with some early construction work starting in 2029. Construction and Commissioning of the intake, tunnel, and treatment plant is currently anticipated to be completed by the late 2030's (basis of cost estimate); however, this timeline may be delayed if the results of ongoing water conservation efforts exceed the modeling predictions. Staff will continue to revisit the timing of key construction components at major milestones, taking into consideration the results of water conservation efforts, to ensure that the timing of the project components is appropriate.

**Investigative Licence and Property Acquisition**

The site of the proposed water treatment plant, near the north end of Pipeline Road, is currently owned by the Province and leased to a private operator for sand and gravel mining. An Investigative Licence Application has been submitted to the Ministry of Forests, Lands, Natural Resource Operations and Rural Development to conduct site investigations on this land. The application is currently under review by the Province. In the interim, at the Ministry's direction, staff continue to work with the current land leasee for site access for investigation work.

Staff continue to work with the Province to determine options for the acquisition of the property. Staff are also working with the City of Coquitlam to look for opportunities to synergize future development of the treatment plant site to meet both of our objectives. The City of Coquitlam will be undertaking an Upper Pipeline Road Corridor Planning Overview, which includes this property. Metro Vancouver has offered to work with the City of Coquitlam on this initiative. As the project requires approximately 1/3 of the identified site, a key opportunity is that the remaining portion of the site can be used as a recreational amenity.

**ENGAGEMENT PROCESS**

Engagement with First Nations, stakeholders, and the community started in fall 2020. The engagement program is designed to support the Project Definition Phase and the Permitting and Regulatory process, providing interested and affected parties with opportunities for meaningful engagement that generates actionable and effective input and feedback to the project team.

We have been sharing information since 2017 with First Nations, specifically Kwikwetlem First Nation, as the project site is within their core territory. Through our meetings with Kwikwetlem First Nation we identified their initial key interests and we are in the process of negotiating an engagement agreement that outlines the ways in which we will be engaging them.

We also recently met with industrial businesses on Pipeline Road and environmental non-governmental organizations. We have also been meeting regularly with the City of Coquitlam and BC Hydro. We are planning a public information session for later in 2021 and workshops with all groups will be ongoing this year and into next year.

**LICENCES AND PERMITS**

An Environmental Assessment Certificate or Exemption from the Environmental Assessment Office (EAO) may be required for this project. Furthermore, the Province recently advised staff that the water treatment plant site land disposition will also be contingent on any environmental assessment requirements being satisfied. A project introductory letter has been sent to the EAO and staff are engaging with them to determine the requirements of the environmental assessment process for the project. An EAO exemption is anticipated to take up to two years to resolve and the current schedule factors in this timeline. Engagement with First Nations has been identified as a key aspect of the Permitting and Regulatory process.

Subsequently, a Water Licence will be required to reallocate water from BC Hydro to the GVWD for drinking water and to construct and commission the Coquitlam Lake Water Supply Project.

**NEXT STEPS**

Staff will be providing a project update to Finance and Intergovernment Committee and the GVWD Board in September 2021. Permitting and regulatory work will commence in late 2021. Concurrently the project will start planning and procurement for further site investigations and treatment pilot testing. The Board will continue to be updated at key milestones including the completion of the Permitting and Regulatory Phase, acquisition of the treatment plant site and prior to the start of Preliminary Design, Detailed Design and Construction.

**ALTERNATIVES**

1. That the GVWD Board endorse Option 4 North Intake Smaller Initial Filtration to be carried forward through Permitting and Regulatory Phase into Preliminary Design.

2. That the GVWD Board receive for information the report dated June 22, 2021, titled “Coquitlam Lake Water Supply – Project Update” and provide alternate direction.

Staff recommend Alternative 1.

**FINANCIAL IMPLICATIONS**
This project will be funded through the GVWD capital program.

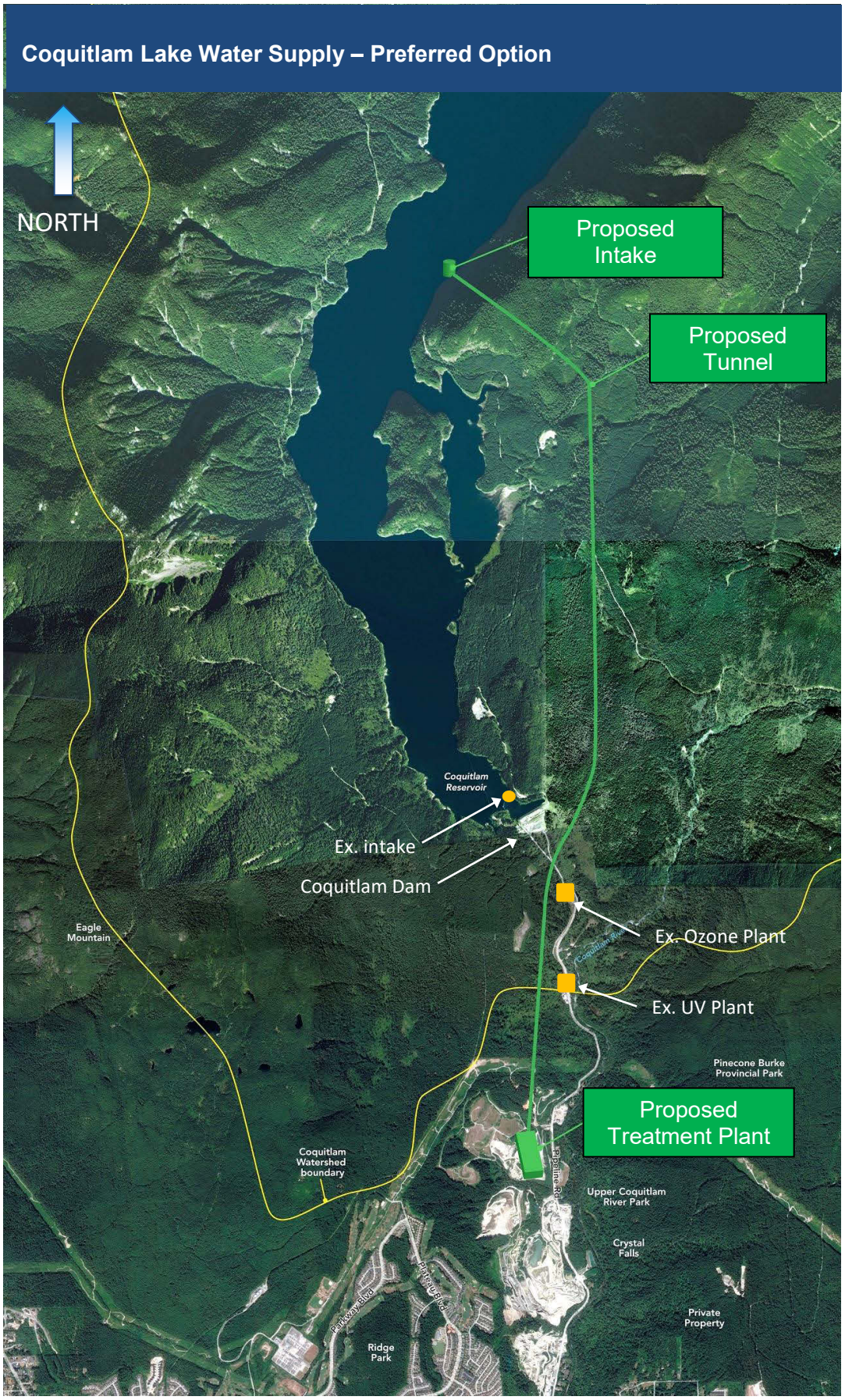
**CONCLUSION**
A Value Engineering Optimized Options Assessment was undertaken to look for opportunities to reduce or defer costs identified in the 2018 Board endorsed option. Option 4 – North Intake Smaller Initial Filtration was determined to be the preferred option as it achieves the goal of reducing and deferring some of the project costs. This is a slightly modified version of the 2018 Board endorsed option.

The Project Definition Phase will conclude in late 2021 and the project will transition into the Permitting and Regulatory Phase. Staff will continue to revisit the timing of key construction components at major milestones, taking into consideration the results of water conservation efforts, to ensure that the timing of the project components is appropriate. Staff will continue to work with the various ministries at the Province to determine the permitting and regulatory requirements related to the Environmental Assessment, Water License and acquisition of the treatment plant site.

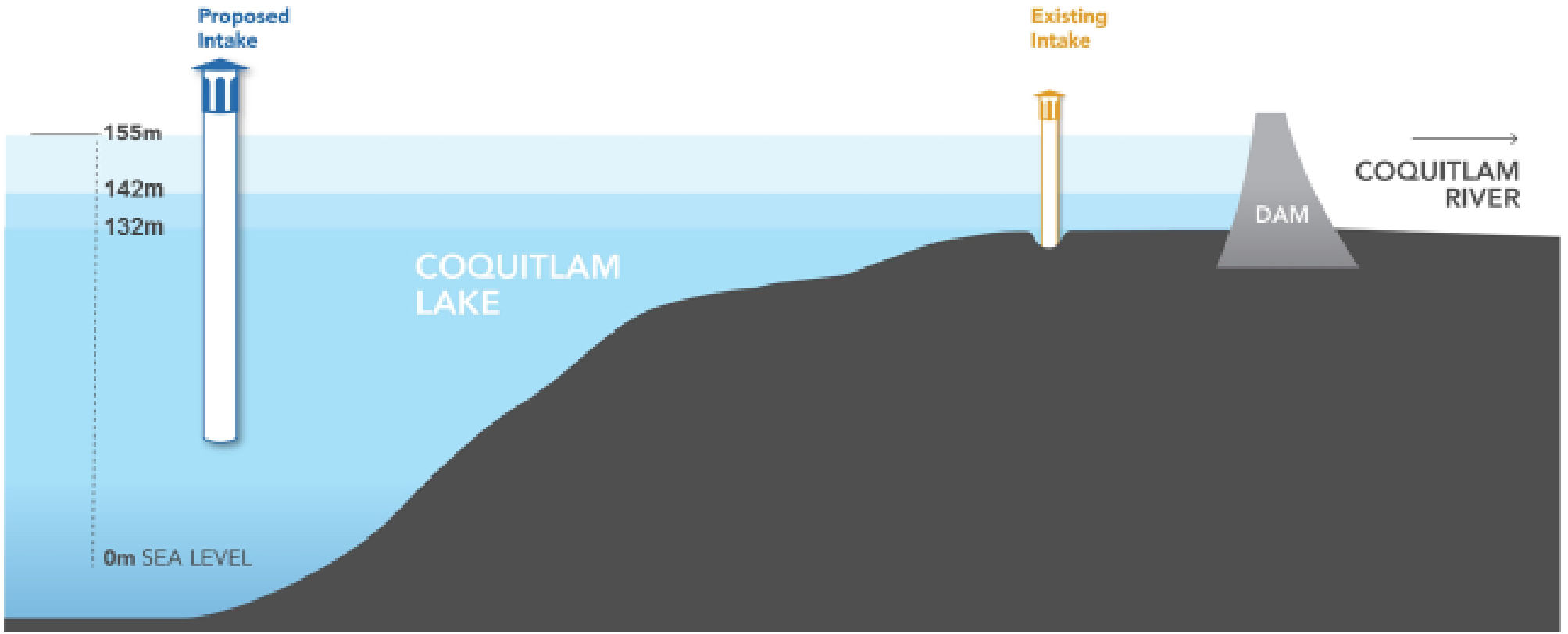
Engagement with First Nations, stakeholders and the community has commenced and will continue during the Permitting and Regulatory Phase. We will continue to work closely with First Nations, City of Coquitlam, stakeholders and the public to ensure that their interests are considered in the planning of the Coquitlam Lake Water Supply Project.

**Attachments**
1. Coquitlam Lake Water Supply – Preferred Option
2. Coquitlam Lake Water Supply – Cross Section

46222014


Coquitlam Lake Water Supply – Preferred Option
NORTH
Proposed Intake
Proposed Tunnel
Coquitlam Reservoir
Ex. intake
Coquitlam Dam
Eagle Mountain
Ex. Ozone Plant
Ex. UV Plant
Pinecone Burke Provincial Park
Proposed Treatment Plant
Coquitlam Watershed boundary
Pipeline Rd
Upper Coquitlam River Park
Crystal Falls
Private Property
Parkway Blvd
Ridge Park

## Coquitlam Lake Water Supply – Cross Section



To: Water Committee

From: Lucas Pitts, Acting Director, Policy, Planning and Analysis, Water Services

Date: June 30, 2021 Meeting Date: July 15, 2021

Subject: **Residential Water Metering – Overview of Local Experience**

**RECOMMENDATION**

That the Water Committee receive for information the report dated June 30, 2021, titled "Residential Water Metering – Overview of Local Experience".

**EXECUTIVE SUMMARY**

Water metering is recognized as a best management practice strategy to achieve water conservation goals. Metro Vancouver continues to have low uptake of universal residential water metering amongst member jurisdictions which has contributed to some of the highest per capita residential water consumption in the country. Metro Vancouver has provided tools to member jurisdictions following a comprehensive regional assessment completed in 2019 to support them with the implementation of residential water metering programs.

**PURPOSE**

This report provides the Water Committee with an update on select member jurisdictions' water metering efforts and the impacts of the metering implementation on their residential water consumption.

**BACKGROUND**

Water metering is recognized as a best practice strategy to achieve water conservation goals. Residential water metering and conservation oriented pricing has the potential to address a number of challenges including billing equity, water consumption, leak detection, system planning, and asset management. Management of dammed river systems includes an obligation to provide downstream flows adequate to sustain freshwater and estuarine ecosystems. Water conservation is essential to ensuring we have access to high quality water that can be used to achieve environmental flow needs. This becomes increasingly important during the dry, hot summer months when this water is critical to sustaining vulnerable fish populations. Unmetered systems with flat fee structures do not incentivise water conservation and makes effective system planning challenging.

Studies have shown that a correlation exists between the extent of universal metering and the average daily per capita consumption. When compared to other jurisdictions, as shown in Table 1 below, the Metro Vancouver region was found to have one of the highest residential Litres per Capita per Day (LPCD) consumption rates while concurrently having the lowest level of metering in the residential sector.

**Table 1: Comparison of 2019 Residential LPCD and Percent Metered Connections**

| City/Region | Average Residential Consumption (LPCD) | Residential Metered Connections % |
|---|---|---|
| **Capital Regional District** | 232 | 100% |
| **Metro Vancouver** | 247 | 31% |
| **Winnipeg** | 149 | 100% |
| **Edmonton** | 176 | 100% |
| **Calgary** | 206 | 100% |
| **City of Toronto** | 210 | 100% |
| **Portland, Oregon** | 173 | 100% |

Metro Vancouver previously commissioned a two-part project to re-evaluate the business case for water metering. The project culminated in informative documents and useful tools, the *Residential Water Metering in Metro Vancouver Best Practices Guide for Local Governments* and a *Water Metering Evaluation Tool and Users Guide*. These were provided to all member jurisdictions in December 2019 to help inform them about the potential implementation of metering programs in the region.

**LOCAL CONTEXT**

Member jurisdictions develop programs and adopt rate structures appropriate to their needs, which include unit rate, declining or inclining block rates (block rates are rates set for certain volumes of water used), seasonal and flat fee structures. As part of the regional assessment project, Metro Vancouver conducted a survey to gauge the perceptions and attitudes of residents towards water metering in the region. The survey found that 86% of respondents:

- supported the concept of paying for water based on usage versus a flat fee; and
- believed such a system will increase awareness of water usage, will be more equitable and will provide an incentive to reduce water usage.

It is generally observed that low-income households can end up subsidizing the water use of higher-income households when a flat fee structure is in place.

Metro Vancouver asked some member jurisdictions to provide feedback on their residential metering programs. The feedback received is summarized in Table 2.

**Table 2: Comparison of Select Member Jurisdiction Residential Metering Programs**

| Member Jurisdiction | Metering Program Status as of 2019 | Single Family Percentage Metered | Metered Rate Structure | Observed Impacts – Single Family Residential Sector |
|---|---|---|---|---|
| **City of Vancouver** | Ongoing | 10% | Seasonal Pricing ($/m$^3$ unit rate + meter rental). | • reduced consumption. |
| **City of Surrey** | Ongoing | > 65% | $/m$^3$ unit rate (one block) | • improved planning. |
| **City of Richmond** | Completed | 100% | $/m$^3$ unit rate (one block). | • reduced consumption;<br>• Reduced bills for households who use less water;<br>• timely leak detection and repair. |
| **District of West Vancouver** | Completed | 100% | $/m$^3$ (four inclining blocks). | • reduced consumption;<br>• customer savings;<br>• leak detection |
| **City of Langley** | Completed | 100% | $/m$^3$ unit rate (one block). | • timely leak detection and repair;<br>• billing efficiencies;<br>• reduced consumption. |
| **Village of Belcarra** | Ongoing | 70% | $/m$^3$ unit rate (one block). | • Meters installed, not used; unmetered flat fee applied. |

**Member jurisdictions' experience:**

*City of Vancouver:*

City of Vancouver enforces mandatory metering for new construction through development regulations and bylaws. In 2010, there were 689 single-family metered connections which was roughly 1% of all serviced connections in the city. By 2020, the single-family metered connections had increased to 10% of all serviced connections. The City of Vancouver also utilizes a seasonal price structure to promote water conservation between June and September with a unit rate for metered customers and varying annual flat fees for unmetered homes.

*City of Surrey*

Since 2018, the City of Surrey has more than 65% of its single-family connections metered. This is attributed to the bylaws on new construction introduced in 1999 and the voluntary metering program that began in 2002. The City has noted improvements in its capital planning from the data obtained from metered connections.

*City of Richmond*
The City of Richmond began a voluntary metering program in 2003 and is now 100% metered. As of 2018, approximately 82% of single-family households saved an average of 47% on their water bills as compared to a flat fee. This also resulted in the City achieving a cost reduction of $10 million in water and sewer charges due to reduced water consumption.

*District of West Vancouver*
The District of West Vancouver implemented metering between 2003 and 2007 with a block rate structure. In recent years, it has been observed that water consumption increased in the lower blocks with a corresponding decrease in the highest block. An overall reduction in consumption was also observed during the summer months. In 2021, the District introduced larger rate increases in the high-use blocks to further encourage water conservation.

*City of Langley*
The City of Langley has had universal metering since 2007 with separate unit rates for each of the residential and industrial sectors. Conservation pricing has not been implemented, although the City notes an increased ability to identify and correct leakages on the consumer side, billing efficiencies and a noticeable reduction in water consumption.

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

**FINANCIAL IMPLICATIONS**
This is an information report. No financial implications are presented.

**CONCLUSION**
Water metering is recognized by the industry as a best management practice to achieve reductions in water consumption when coupled with conservation-oriented pricing. The Metro Vancouver region has one of the highest average daily consumption per capita and the lowest level of metering in the residential sector. The City of Richmond, the City of Langley, and the District of West Vancouver are observing reduced water consumption and savings for some residents since implementing universal residential water metering programs.

**References**
1. Regional Assessment of Residential Water Metering Technical Report – September 2019
2. 2020 Report for Water Committee Water Rates and Consumption
3. GVWD and Local Government Water Use by Sector Report 1985 - 2017.
4. 2018-10-04 Residential Water Rates in Metro Vancouver compared with other regions
5. 2018 Water Consumption Statistics Report
6. District of West Vancouver, Council Report September 23 2020 "Proposed 'Waterworks Regulation Bylaw No. 4490, 2006, Amendment Bylaw No. 5093, 2020'"
7. City of Richmond, Report to Committee, March 21 2019, "Water Meter Program & Sewer Rate Update"

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To: Water Committee

From: Marilyn Towill, General Manager, Water Services

Date: July 8, 2021 Meeting Date: July 15, 2021

Subject: **Manager's Report**

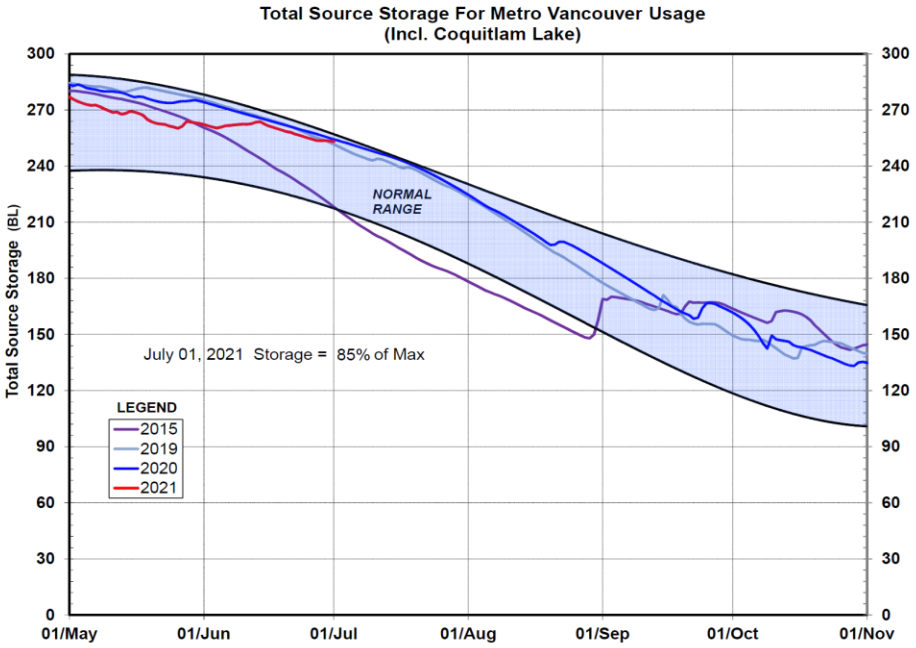
**RECOMMENDATION**
That the Water Committee receive for information the report dated July 8, 2021 titled "Manager's Report".

## 1. Water Supply Update – July 2021

The start of June saw slightly cooler than normal temperatures and below normal precipitation. Mid-June snow survey measurements indicated that watershed snow course sites were collectively at 125% average historical snow depth, and 124% average historical snow water equivalent (SWE) comparing to 65% and 66% respectively for the same reporting period in 2020. The later part of June had hot temperatures with no precipitation and the remaining snowpack melted quickly.

As of July 1, GVWD source reservoirs and alpine lakes totaled 85% of maximum source storage (Figure 1) which is well within the normal range for this time of year. This figure includes the GVWD's remaining nominated storage from Coquitlam Lake, as well as storage in Seymour Reservoir, Capilano Reservoir, and the three alpine lakes which are full and available for summer use.

**Figure 1**

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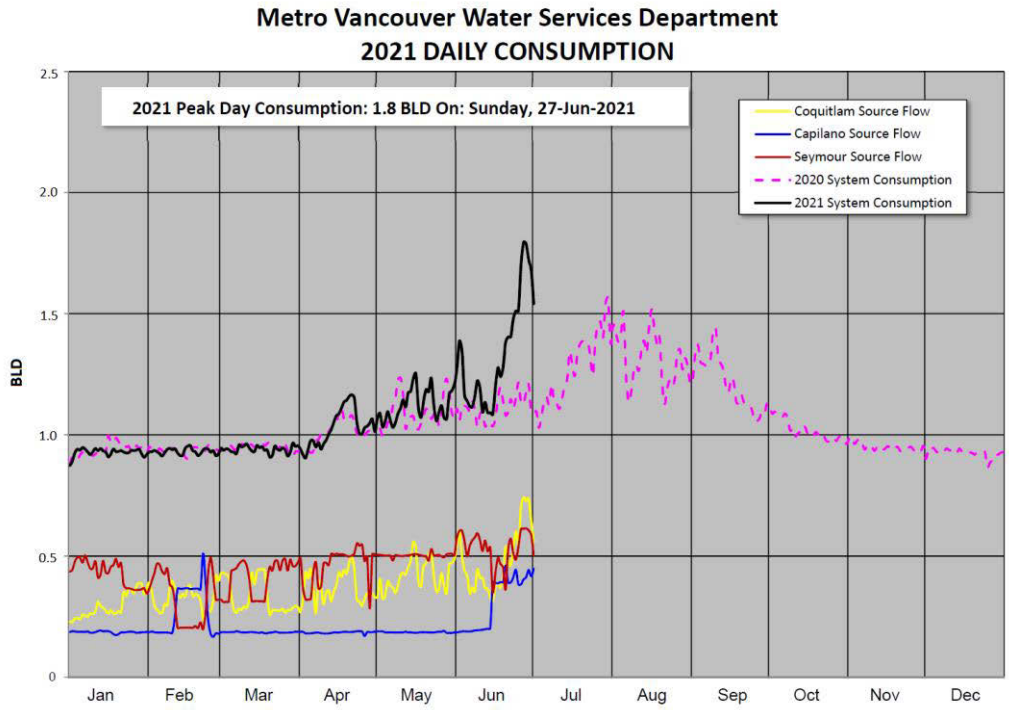
Unprecedented high temperatures between June 26 – June 29 led to higher than normal water use (Figure 2). A peak water demand of 1.8 BLD on June 27 exceeded previous peak day demands dating back eleven years. A higher historical peak of just under 2.0 BLD occurred in 2009. Most peak day demands occur in late July or early August, so having a record breaking high occurring in June is unprecedented. The recent uncharacteristically high temperatures in the province have been attributed to climate change. Based on the latest climate change projections, it is likely that such heatwaves will occur more frequently and robust drinking water conservation communications supported by active local bylaw enforcement will play a major role in mitigating the risk of future peak water use exceeding the regional capacity to deliver drinking water to member jurisdictions.

**Figure 2**




## 2. Metro Vancouver's 2021 PNE activation - "Together We Make Our Region Strong"

For the first time, Metro Vancouver will participate in the PNE with a significant exhibit. We're excited to be part of an opportunity at such a significant time in history for our residents to be able to come out to enjoy one of the largest and most memorable events in BC. Metro Vancouver's activation will showcase the projects and initiatives essential for a resilient and sustainable region, introducing residents to our critical infrastructure projects, our inspiring regional parks and how we plan for growth and the stewardship of over a quarter of the region's land base. Visitors to the Metro Vancouver showcase will have the opportunity to interact with displays that convey messaging about Metro Vancouver's mission and goals. A series of tents, infrastructure elements, games, and exhibits will let visitors experience the wide range of Metro Vancouver services in a fun and interactive way. From historical wooden pipes to modern steel tunnel liners, selfie walls that put visitors in the frame

of our SuperHabits campaign, and opportunities to ask Metro Vancouver staff questions about our work will leave visitors inspired about where they live, and gain understanding of the many different activities taking place that make this one of the most livable regions in the world.

## 3. Work Plan

**Attachment**
Water Committee 2021 Work Plan

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**Water Committee 2021**
**Work Plan**

**Priorities**

| **1st Quarter** | **Status** |
|---|---|
| Annual Energy Management Program Update | Complete |
| Capilano Hydropower Project Business Case Update | Complete |
| Corrosion Control Program – Copper Pipes Protection | Complete |
| Long Term Financial Plan | Pending |
| Residential Water Metering – Overview of Local Experience | In Progress |
| Water Meter Replacement Program | Complete |
| Contract Approvals – Contracts > $5 Million (as applicable) | Complete |
| Water Policies (as applicable) | Complete |
| **2nd Quarter** | |
| Coquitlam Lake Water Supply Project Update | In Progress |
| Drinking Water Customer Information Guide | Complete |
| Drinking Water Management Plan Update | Complete |
| First Nation Engagement Updates | Complete |
| GVWD Water Quality Annual Report | Complete |
| Lawn Water Regulations Communication & Regional Water Conservation Campaign | Complete |
| Seymour Salmonid Society 2020 Annual Report | Complete |
| Status of GVWD Capital Expenditures | Complete |
| Water Services Wildfire Preparedness Update | Complete |
| Water Supply Update for Summer 2021 | Complete |
| Water Use-by-Sector Report | Pending |
| Contract Approvals – Contracts > $5 Million (as applicable) | Complete |
| Water Policies (as applicable) | Complete |
| **3rd Quarter** | |
| Annual Dam Safety Program Update | Complete |
| Status of GVWD Capital Expenditures | In Progress |
| Quality Management System for Drinking Water Update | Pending |
| Contract Approvals – Contracts > $5 Million (as applicable) | Pending |
| Water Policies (as applicable) | Pending |
| **4th Quarter** | |
| Annual Budget and 5-year Financial Plan – Water Services | Pending |
| Environmental Management Framework | Pending |
| Regional Water Conservation Campaign and Water Regulations Communications 2021 | Pending |
| Regional Water Supply System Seismic Resiliency Study | Pending |
| Status of GVWD Capital Expenditures | Pending |
| Summer 2021 Water Supply Performance | Pending |
| Watershed Fisheries Initiatives Annual Update | Pending |
| Contract Approvals – Contracts > $5 Million (as applicable) | Pending |
| Water Policies (as applicable) | Pending |