

**METRO VANCOUVER REGIONAL DISTRICT
LIQUID WASTE COMMITTEE**

REGULAR MEETING

October 5, 2022

1:00 p.m.

Meeting conducted electronically and in-person pursuant to the Procedure Bylaw

28th Floor Boardroom, 4515 Central Boulevard, Burnaby, British Columbia

Webstream available at <http://www.metrovanancouver.org>

A G E N D A¹

1. ADOPTION OF THE AGENDA

1.1 October 5, 2022 Regular Meeting Agenda

That the Liquid Waste Committee adopt the agenda for its regular meeting scheduled for October 5, 2022 as circulated.

2. ADOPTION OF THE MINUTES

2.1 September 21, 2022 Regular Meeting Minutes

pg 6

That the Liquid Waste Committee adopt the minutes of its regular meeting held September 21, 2022 as circulated.

3. DELEGATIONS

4. INVITED PRESENTATIONS

5. REPORTS FROM COMMITTEE OR STAFF

5.1 2023 – 2027 Financial Plan Overview

Verbal Update

Designated Speakers: Jerry W. Dobrowolny, Commissioner/Chief Administrative Officer, and Dean Rear, Chief Finance Officer/General Manager, Financial Services

5.2 2023 – 2027 Financial Plan – Liquid Waste Services

pg 9

That the Liquid Waste Committee endorse the 2023 - 2027 Financial Plan for Liquid Waste Services as presented in the report dated September 28, 2022, titled "2023 - 2027 Financial Plan – Liquid Waste Services", and forward it to the Metro Vancouver Board Budget Workshop on October 19, 2022 for consideration.

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

- 5.3 Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Amending Bylaw No. 360, 2022** *pg 43*
That the GVS&DD Board:
a) give first, second and third reading to *Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Amending Bylaw No. 360, 2022*; and
b) pass and finally adopt *Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Amending Bylaw No. 360, 2022*.
- 5.4 Greater Vancouver Sewerage and Drainage District Sewerage and Drainage Areas Boundaries Amending Bylaw No. 359, 2022 – Fraser Sewerage Area – City of Delta** *pg 50*
That the GVS&DD Board:
a) give first, second and third reading to the *Greater Vancouver Sewerage and Drainage District Sewerage and Drainage Areas Boundaries Amending Bylaw No. 359, 2022*; and,
b) pass, and finally adopt the *Greater Vancouver Sewerage and Drainage District Sewerage and Drainage Areas Boundaries Amending Bylaw No. 359, 2022*.
- 5.5 Compensation Practices Related to Metro Vancouver's Delivery of Projects** *pg 57*
That the GVS&DD and GVWD Boards receive for information the report dated September 28, 2022, titled "Compensation Practices for Metro Vancouver's Delivery of Projects".
- 5.6 Award of a Contract Resulting from RFP No. 21-425: Ground Improvements and Preload Engineering Services for the Iona Island Wastewater Treatment Plant Upgrades Program** *pg 61*
That the GVS&DD Board:
a) approve award of a contract in the amount of up to \$9,285,048 (exclusive of taxes) to Golder Associates Ltd., resulting from Request for Proposal No. 21-425: Ground Improvements and Preload Engineering Services for the Iona Island Wastewater Treatment Plant Upgrades Program, 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 award should proceed.
- 5.7 Award of Phase 1 Resulting from RFP No. 22-103: Program Management and Technical Services for Northwest Langley Wastewater Treatment Plant Expansion Program** *pg 65*
That the GVS&DD Board:
a) approve the award of a contract for an amount of up to \$16,886,338 (exclusive of taxes) to Carollo Engineers Inc. for Phase 1, resulting from Request for Proposal No. 22-103 Northwest Langley Wastewater Treatment Plant Expansion Program – Program Management and Technical Services, 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.

5.8 Amendment to Contract No. PC18-1232 – Archaeological Services for Northwest Langley Wastewater Treatment Plant Phase 2 Ground Improvements *pg 69*

That the GVS&DD Board:

- a) approve a contract amendment in the amount of up to \$5,900,996.82 (exclusive of taxes) to Katzie Development Limited Partnership, 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.

5.9 Amendment to Contract No. PC19-1709 – Northwest Langley Wastewater Treatment Plant Ground Improvements and Preload Project *pg 74*

That the GVS&DD Board:

- a) approve a contract amendment in the amount of up to \$10,238,205.25 (exclusive of taxes) for Phase A to Pomerleau Inc., subject to final review by the Commissioner;
- b) authorize the Commissioner and the Corporate Officer to execute the required documentation once the Commissioner is satisfied that the award should proceed.

5.10 Award of a Contract Resulting from Request for Proposal No. 21-405: Construction of South Surrey Interceptor No. 2, Johnston Road Section Phase 3 – Open Cut Segments *pg 78*

That the GVS&DD Board:

- a) approve award of a contract in the amount of \$9,452,661 (exclusive of taxes) to NorLand Limited, resulting from Request for Proposal No. 21-405: Construction of South Surrey Interceptor No. 2, Johnston Road Section Phase 3 – Open Cut Segments, 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.

5.11 Award of a Contract Resulting from Request for Proposal No. 22-007: Construction of Gilbert Trunk Sewer No.2 Gilbert Road Central Section *pg 83*

That the GVS&DD Board:

- a) approve award of a contract in the amount of \$44,333,000 (exclusive of taxes) to BD Hall Constructors Corporation, resulting from Request for Proposal No. 22-007: Construction of Gilbert Trunk Sewer No.2 Gilbert Road Central Section, 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.

5.12 Award of a Contract Resulting from Invitation to Tender No. 22-256: Construction Services - Upgrades of Two Gleneagles Pump Stations - Gallagher and Kensington pg 87

That the GVS&DD Board:

- a) approve award of a contract in the amount of up to \$13,967,754.75 (exclusive of taxes) to Industra Construction Corp., resulting from Invitation to Tender No. 22-256: Construction Services – Upgrades of Two Gleneagles Pump Stations – Gallagher and Kensington, 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.

5.13 Manager's Report

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That the Liquid Waste Committee receive for information the report dated September 28, 2022 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.

That the Liquid Waste Committee close its regular meeting scheduled for October 5, 2022 pursuant to the *Community Charter* provisions, Section 90 (1) (e) as follows:

"90 (1) *A part of a board 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 [sewerage and drainage] district."*

10. ADJOURNMENT/CONCLUSION

That the Liquid Waste Committee adjourn/conclude its regular meeting of October 5, 2022.

Membership:

Stewart, Richard (C) - Coquitlam
Dominato, Lisa (VC) - Vancouver
Calendino, Pietro - Burnaby
Elford, Doug - City of Surrey

Ferguson, Steve - Langley Township
Little, Mike - North Vancouver District
Loo, Alexa - Richmond
McDonald, Bruce - Delta

McEwen, John - Anmore
Trentadue, Mary - New Westminster
Walker, Darryl - White Rock

**METRO VANCOUVER REGIONAL DISTRICT
LIQUID WASTE COMMITTEE**

Minutes of the Regular Meeting of the Metro Vancouver Regional District (MVRD) Liquid Waste Committee held at 1:02 p.m. on Wednesday, September 21, 2022 in the 28th Floor Boardroom, 4515 Central Boulevard, Burnaby, British Columbia.

MEMBERS PRESENT:

Chair, Mayor Richard Stewart*, Coquitlam (departed at 1:11 p.m.)
 Vice Chair, Councillor Lisa Dominato*, Vancouver (arrived at 1:04 p.m.)
 Councillor Pietro Calendino*, Burnaby
 Councillor Steve Ferguson, Langley Township
 Mayor Mike Little*, North Vancouver District
 Councillor Alexa Loo*, Richmond
 Councillor Bruce McDonald*, Delta
 Mayor John McEwen*, Anmore
 Councillor Mary Trentadue*, New Westminster
 Mayor Darryl Walker*, White Rock

MEMBERS ABSENT:

Councillor Doug Elford, Surrey

STAFF PRESENT:

Peter Navratil, General Manager, Liquid Waste Services
 Morgan Mackenzie, Legislative Services Coordinator, Board and Information Services

1. ADOPTION OF THE AGENDA

1.1 September 21, 2022 Regular Meeting Agenda

It was MOVED and SECONDED

That the Liquid Waste Committee adopt the agenda for its regular meeting scheduled for September 21, 2022 as circulated.

CARRIED

2. ADOPTION OF THE MINUTES

2.1 July 13, 2022 Regular Meeting Minutes

It was MOVED and SECONDED

That the Liquid Waste Committee adopt the minutes of its regular meeting held July 13, 2022 as circulated.

CARRIED

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

1:04 p.m. Vice Chair Dominato arrived at the meeting.

3. DELEGATIONS

No items presented.

4. INVITED PRESENTATIONS

No items presented.

5. REPORTS FROM COMMITTEE OR STAFF

5.1 Sewage and Waste Heat Recovery Bylaw No. 357, 2022

Report dated September 7, 2022, from Jeff Carmichael, Division Manager, Liquid Waste Services, seeking GVS&DD Board approval of a proposed Sewage and Waste Heat Recovery Bylaw No. 357, 2022 to support sewer and waste heat recovery projects.

It was MOVED and SECONDED

That the GVS&DD Board:

- a) approve the proposed Greater Vancouver Sewerage and Drainage District Sewage and Waste Heat Recovery Bylaw No. 357, 2022, as presented in the report dated September 7, 2022, titled "Sewage and Waste Heat Recovery Bylaw No. 357, 2022";
- b) give first, second and third reading to Greater Vancouver Sewerage and Drainage District Sewage and Waste Heat Recovery Bylaw No. 357, 2022; and
- c) pass and finally adopt Greater Vancouver Sewerage and Drainage District Sewage and Waste Heat Recovery Bylaw No. 357, 2022.

CARRIED

5.2 2022 Unflushables Campaign Results

Report dated July 26, 2022, from Larina Lopez, Division Manager, Corporate Communications and Carol Nicolls, Communications Specialist, Corporate Communications, providing the Liquid Waste Committee with an update on the results of the 2022 regional Unflushables campaign.

It was MOVED and SECONDED

That the Liquid Waste Committee receive for information the report dated July 26, 2022, titled "2022 Unflushables Campaign Results".

CARRIED

5.3 Manager's Report

Report dated September 7, 2022, from Peter Navratil, General Manager, Liquid Waste Services, providing the Liquid Waste Committee with updates on the North Shore Wastewater Treatment Plant project, the 2022 Microfibres Reduction Campaign and the GVS&DD and GVWD Request for Bylaw Notice Authority.

1:11 p.m. Chair Stewart departed the meeting and Vice Chair Dominato assumed the Chair.

It was MOVED and SECONDED

That the Liquid Waste Committee receive for information the report dated September 7, 2022 titled "Manager's Report".

CARRIED

6. INFORMATION ITEMS

No items presented.

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 Liquid Waste Committee close its regular meeting scheduled for September 21, 2022 pursuant to the *Community Charter* provisions, Section 90 (1) (e) as follows:

"90 (1) *A part of a board 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 [sewerage and drainage] district."

CARRIED

10. ADJOURNMENT/CONCLUSION

It was MOVED and SECONDED

That the Liquid Waste Committee adjourn its regular meeting of September 21, 2022.

CARRIED

(Time: 1:14 p.m.)

Morgan Mackenzie,
Legislative Services Coordinator

Richard Stewart, Chair

55285865 FINAL

To: Liquid Waste Committee

From: Peter Navratil, General Manager, Liquid Waste Services

Date: September 28, 2022 Meeting Date: October 5, 2022

Subject: **2023 - 2027 Financial Plan – Liquid Waste Services**

RECOMMENDATION

That the Liquid Waste Committee endorse the 2023 - 2027 Financial Plan for Liquid Waste Services as presented in the report dated September 28, 2022, titled “2023 - 2027 Financial Plan – Liquid Waste Services”, and forward it to the Metro Vancouver Board Budget Workshop on October 19, 2022 for consideration.

EXECUTIVE SUMMARY

The 2023 - 2027 Metro Vancouver Financial Plan has been prepared following direction received at the April 14, 2022 Metro Vancouver Board Budget Workshop. This has resulted in a plan that maintains the goals and objectives of Metro Vancouver while removing the use of financial levers that were put in place during the COVID-19 pandemic. Further, this budget represents a pause to assess the implications of the rapidly evolving macro economic environment and to undertake strategic planning with the incoming Board of Directors. The increase in Metro Vancouver’s overall consolidated household impact for 2023 is projected to be 4.5%, down from the 10.1% projected for 2023 in the prior financial planning cycle.

In 2023, the Liquid Waste Services operating budget is proposed to increase by \$25.9 million (6.6%) for a total of \$418.8 million. A significant portion of this increase is related to capital expenditures which will be partially funded by External Interagency sources and DCC Reserves. This will result in a levy increase of \$22.8 million (7.6%), which represents an \$15 increase (5.4%) for a total of \$295 in the cost to the average regional household after growth is accounted for (which compares to a previous forecast for 2023 of \$321). Efforts to reduce operating expenditures and debt service costs along with the application of available reserves of approximately \$11.0 million have resulted in a reduction in the overall Sewer levy of \$28.7 million from last year’s projection. For longer term cost containment, amendments to the Cost Apportionment Bylaw are recommended, to enable the introduction of wet weather pricing to establish incentives for municipal action on Inflow and Infiltration management.

PURPOSE

To present the 2023 - 2027 Financial Plan for Liquid Waste Services for consideration by the Committee.

BACKGROUND

Metro Vancouver’s annual budget process includes the development of detailed annual budgets and the updating of five-year financial plans for each of the four Metro Vancouver legal entities (Metro Vancouver Regional District, Metro Vancouver Housing Corporation, Greater Vancouver Water District and Greater Vancouver Sewerage and Drainage District).

On April 14, 2022 a Metro Vancouver Board Budget Workshop was held with the objective to seek direction for the preparation of the 2023 - 2027 Financial Plan. The workshop outlined the principles that guide the work of Metro Vancouver as an organization, the current 2022 - 2026 Financial Plan, the implications of the COVID-19 pandemic, the tools that can be used to make budget adjustments, and a proposed approach for the 2023 - 2027 Financial Plan.

Given the challenges being observed coming out of the COVID-19 pandemic, this budget represents a pause for Metro Vancouver and focuses on maintaining the existing goals and objectives of Metro Vancouver and Liquid Waste Services. Staff will undertake strategic planning with the incoming Board of Directors, re-evaluate current plans under this leadership, and assess the implications of the rapidly evolving macro environment.

Key highlights of the overall Metro Vancouver 2023 proposed budget are as follows:

- A reduction of \$22 million of the total 2023 Metro Vancouver proposed operating budget compared to that previously projected for 2023
- Maintained or increased contribution to capital and reserves for key functions
- Reduced capital cash flow for 2023 and 2024
- Real reduction of HHI, \$33 less than that previously projected for 2023

This report focuses on the Liquid Waste Services function and presents the 2023 annual budget and the updated five-year plan for the years 2023 to 2027 for committee consideration.

LIQUID WASTE SERVICES

The Liquid Waste Services function is comprised of 19 member jurisdictions within Metro Vancouver, serving a population of approximately 2.7 million residents. The wastewater collection and treatment system consists of over 530 kilometers of trunk sewers, 34 pump stations, three storage tanks and 5 treatment plants that transport and treat an average of 1.2 billion litres of wastewater per day. The urban drainage function is comprised of the Still Creek/Brunette, Port Moody/Coquitlam and University Drainage Areas.

Liquid Waste Services initiatives planned over the next five years are guided by direction provided in the *2019 - 2022 Board Strategic Plan*, and the *2010 Integrated Liquid Waste and Resource Management Plan*, specifically:

Board Strategic Plan:

- Enhance the management of the liquid waste system with a commitment to innovative approaches to protect the health of the public and the environment.
- Ensure the long-term resilience of the regional sewerage and drainage system to withstand natural hazards, climate change and other significant disruptions.
- Develop and implement financial plans and policies that reflect a commitment to sound financial management and long-term planning, in consideration of current and future ratepayers.
- Strengthen awareness and engagement with the public, members, other orders of government, and key stakeholders on a range of initiatives that will ensure that the regional liquid waste system protects public health and the environment, now and into the future.

Integrated Liquid Waste and Resource Management Plan:

- Protect public health and the environment
- Use liquid waste as a resource
- Effective, affordable and collaborative management

Metro Vancouver also recognizes the history of Indigenous Peoples and aims to build meaningful and enduring relationships with First Nations. As part of its work, Liquid Waste Services is committed to engaging First Nation communities through information sharing, engagement and ongoing communication.

WORK PLAN PERFORMANCE INDICATORS

High level performance indicators have been developed across the organization to evaluate trends, determine key actions for the coming year, and to assist in long-term planning. The 2023 Work Plans for Liquid Waste Services are presented in this report. Within the Liquid Waste Services Work Plans, 23 performance indicators have been developed and are being tracked. These include:

- Operating cost per million litres collected and treated;
- Compliance with treatment plant Operational Certificates;
- Annual combined sewage overflow (CSO) volume;
- Annual number of wet-weather related sanitary sewer overflows (SSO);
- Percentage of assets not meeting capacity or regulation within 10 years;
- Percent of biosolids beneficially used;
- Energy use in the collection and treatment of liquid waste per million litres processed;
- Percentage of digester gas used at the Wastewater Treatment Plants (WWTP); and
- Number of days swimming advisories posted by Health Authorities.

The trend in these performance measures indicates that the regional Liquid Waste treatment plants have performed well in complying with existing treatment plant operational certificates, although the North Shore Sewerage Area continues to be out of compliance with Federal regulations since January 1, 2021 and will remain so until the North Shore WWTP commences secondary treatment of wastewater flows from the North Shore municipalities. Wet weather sanitary sewer overflows continue to occur, primarily as a result of excessive inflow and infiltration into the system through private infrastructure. Progress on key projects and initiatives must continue to ensure that needed infrastructure is delivered to comply with regulatory requirements, meet demands resulting from growth and to allow progress on climate change mitigation actions.

CONTINUOUS IMPROVEMENT

Several continuous improvement initiatives have resulted in the following achievements:

- Development of Wet Weather Rate Structure to incentivize action by member jurisdictions to address Inflow and Infiltration on private and public infrastructure.
- Transition to renewable natural gas from FortisBC for all liquid waste facilities, resulting in reduction of annual GHG emissions by 835 tonnes.
- Implementation of safety management improvement strategies that has resulted in a reduction of lost time accidents and worker injuries.
- Changes to operating strategies at Lions Gate WWTP and new public education initiatives targeted to the North Shore Sewerage Area to reduce influent loading and improve the

quality of effluent discharged to Burrard Inlet.

- Implementation of modern modelling software for the wastewater collection systems that provides the ability to perform analysis that will allow the optimization of system operations during normal and emergency conditions, identify opportunities to help optimize Inflow and Infiltration (I&I) reduction actions and improve the accuracy of timing for future growth-related system expansions.
- Adoption of remote work opportunities, resulting in a 15% reduction in the amount of office space required by the Liquid Waste Services Department in the Metro Tower III offices, resulting in projected savings of \$300,000 per year.
- Establishment of a WWT Facility Planning group that will improve due diligence in meeting regulatory requirements, and will support financial sustainability and WWTP resiliency.
- Working with local health authorities to monitor wastewater to identify trends in community spread of COVID-19.
- Review of Trucked Liquid Waste Rates, ensuring that rates remain consistent with market conditions and reflect full cost of providing this service. This latest review will result in an increase in revenue of approximately \$3,000,000 by 2027.
- Completed development and implementation of an ISO 14001 compliant environmental management system including the establishment of a policy and implementation strategy to systematically reduce risks of environmental impacts.

For 2023 the following activities will continue, resulting in future improvements:

- Effluent Heat Recovery at Lulu Island WWTP, resulting in higher volume of digester gas available for conversion to Renewable Natural Gas. Projected \$415,000 per year increase of revenue and additional regional GHG reductions of 1,000 tonnes per year.
- Work with the City of New Westminster on the development of a sewer heat based heat recovery district energy system in the Sapperton district. This project has the potential to reduce regional greenhouse gas emissions by 5,700 tonnes per year.
- Work with the City of Surrey, City of Richmond and City of Vancouver to identify and develop opportunities for additional sewer heat based district energy systems.
- Further improvement of effluent quality at Lions Gate WWTP through continuous application of chemically enhanced primary treatment and piloting cloth media filters and implementing this technology pilot performance is successful.
- Testing innovative sludge digestion processes such as the methanogen incubator with the goal of implementation at full scale. These have the potential to reduce GHG emissions by 1,200 tonnes per year and increase RNG revenue by \$500,000.
- Continue with the O&M Business Optimization initiative to use evidence based tools to identify and implement improvement opportunities across a broad area of work activities with the goal of reducing operating and maintenance costs and increasing staff productivity.
- Real-time public notification of combined sewer overflows.
- Identification and development of additional opportunities for green biomethane generation.
- Development of advanced technologies such as hydrothermal liquefaction to increase options for wastewater solids beneficial use and increased resource recovery.

2023 BUDGET AND 2023 - 2027 FINANCIAL PLAN

The five-year financial plans for this cycle have been updated to address five central themes identified by the Metro Vancouver Board in its Strategic Plan to guide the development of plans and budgets.

The five themes are as follows:

- Financial Sustainability
- Environmental Sustainability
- System Stewardship
- Regulatory and Legislative Environment
- Regional Growth

Attached are the 2023 - 2027 Liquid Waste Services Financial Plan Operating Budget Summary (Attachment 1) and the 2023 - 2027 Liquid Waste Services Capital Budget Summary (Attachment 2).

Each Metro Vancouver function has Annual Work Plans that include strategic directions, performance indicators and key actions to guide the work for the coming year. Each function also has a “What’s Happening” summary that highlights the program highlights for the next five years. The 2023 Annual Work Plans for the Liquid Waste Services budget presented in this report are included in Attachment 3 and the “What’s Happening” highlights for Liquid Waste Services for the years 2023 - 2027 are included in Attachment 4.

Operating Budget Highlights

The Liquid Waste Services operating budget is separated into operating programs and funding required to support the expanding capital program (debt service and contribution to capital). It is proposed to increase by \$25.9 million in 2023 for a total budget of \$418.8 million (Attachment 1). This increase can essentially be attributed to increasing operating costs (close to \$4.5 million) due to increasing operating requirements. A significant portion of the increase can be attributed to increased debt service costs of \$17.3 million due to an accelerating capital program along with an increase in contributions to capital of \$4.0 million, supporting infrastructure investments required to meet service requirements and growth demands.

The 2023 operating budget includes the following key actions:

- Collaboration with GVS&DD members on reduction of I&I of rainwater into separated sewers including the introduction of a wet weather pricing structure designed to incentivize action on I&I management and management of combined sewers.
- Develop a Drainage policy to clarify jurisdictional roles.
- Continue review and update of the *Integrated Liquid Waste and Resource Management Plan* in accordance with a provincially-approved review strategy.
- Complete the rehabilitation of the New Westminster Interceptor on Columbia Street.
- Complete the removal of land-dried biosolids stockpile at the Iona Island WWTP.
- Expand access to GVS&DD flow and rainfall datasets for member jurisdictions.
- Commence real-time reporting of combined sewage overflows (CSOs).
- Introduction of a Reclaimed Water Policy.

Highlights of contracts and consulting assignments anticipated to be undertaken in 2023 to respond to work plan requirements within the operating budget include the following:

- Biosolids hauling and beneficial use projects.

- Technical support and community engagement services for the review and update of the Liquid Waste Management Plan.
- Projects funded from the Sustainability Innovation Fund including Advanced Resource Recovery from Sludge and Handheld Microbial DNA Monitor.
- Facilitation of a regional estuary management program.
- Monitoring programs for Iona Island WWTP and Strait of Georgia; Lions Gate WWTP and Burrard Inlet; Fraser River and the Fraser River WWTPs.
- Additional assignments that are regularly contracted for highly specialized functions, including: effluent toxicity testing, combined sewer overflow characterization and risk assessments, wastewater and biosolids characterization for CECs and toxics, development of environmental management system, maintenance hole monitoring and assessment.

Over the next five years, the Liquid Waste Services budget is expected to increase an average of \$84.6 million or 15.8% per year. Of this overall increase, funding related to the expanding capital program (debt servicing and contribution to the capital) is increasing \$70.5 million on average over the next five years. The operating programs expenditures are increasing by \$14.1 million per year on average, or slightly higher than the rate of inflation, to address core operating and facility commissioning requirements.

Capital Budget Highlights

The Liquid Waste Services capital budget for 2023 approval is \$6.5 billion (Attachment 2). This amount includes all capital projects underway or planned in 2023. The capital program is funded by a combination of long-term debt, contributions from the operating budget, some external (interagency and senior level government grant) contributions and development cost charges (DCCs).

The projected capital cash flow for 2023 - 2027 totals \$4.7 billion, an average of \$946.0 million per year. The largest twelve projects (\$95 million and greater) make up approximately 77% of the capital spending over the next five years. These twelve projects also represent 96% of the expenditures planned for the 2028 – 2032 period. In addition to the twelve projects, there are a further 140 projects on the plan.

The most significant changes and issues in the Liquid Waste Capital Portfolio for this cycle are with respect to the North Shore WWTP and Northwest Langley WWTP. A new schedule and estimate for the North Shore WWTP is expected by the end of 2022. For Northwest Langley WWTP there will be significant changes in scale due to archeological discoveries and scope related to the overall capacity of the plant. The total proposed budget for the project has been adjusted to recognize that; however, this requires a full discussion with the Board during the stage gate milestone early next year. While the total proposed budget has changed, there is no material impact on the estimated annual cash flow for the Northwest Langley project over the five-year plan.

Highlights of capital projects planned or ongoing for 2023 include the following:

- North Shore WWTP Advanced Treatment Upgrade;
- Northwest Langley WWTP Expansion;
- Iona Island WWTP Advanced Treatment Upgrade;
- Gilbert / Brighthouse Trunk Sewer;
- Annacis Island WWTP Stage 5 Expansion and Outfall System;
- Annacis Island WWTP Refurbishment of the fourth and final Trickling Filter;

- Burnaby Lake North Interceptor - Winston Section;
- South Surrey Interceptor - Johnston Section;
- Jervis and Chilco Pump Station Backup Power facilities;
- Gleneagles Pump Stations 4 and 5;
- Crescent Beach Forcemain Replacement Project;
- New Westminster Interceptor Repair Columbia St. Section

Reserve Funds

The application of reserve funding in Liquid Waste Services is primarily made through the Biosolids Inventory Reserve, the Sustainability Innovation Fund Reserve, Drainage Area General Reserve and the Laboratory Equipment Reserve. In 2023, the financial plan includes \$11.38 million net application from the Biosolids Inventory Reserve for removal of the stockpile at the Iona Island Wastewater Treatment Plant and \$245,000 for several Drainage Area initiatives. In addition, a total of close to \$0.76 million is planned to be used from the Liquid Waste Sustainability Innovation Fund for several Board approved sustainability initiatives during 2023 (plus another \$0.44 million of funding in 2023-2027 period for Board approved sustainability initiative projects.)

The 2023 - 2027 Projected Reserves for Liquid Waste Services is included in Attachment 5.

Wet Weather Cost Allocation

To address the increasing challenge of managing I&I of rainwater into the regional sewer systems and to ensure that costs for services are equitably allocated, a shift towards wet weather pricing for liquid waste collection, transportation and treatment is recommended. The current cost apportionment process divides the cost for services between members solely on the basis of dry weather flow. The introduction of an apportionment that also reflects wet weather flow, improves the fairness of the distribution of costs and provides incentive for municipal action to address I&I.

Details of the method of apportionment and timing of introduction have been developed in coordination with staff from the GVS&DD members. This will be presented in 2023 along with recommended changes to the Cost Apportionment By-law, to allow the GVS&DD levy to be split into a dry weather component and a wet weather component allowing a staged transition from the current dry weather apportionment to a wet weather based model. The change will not result in increased revenue for the GVS&DD, but will reward municipalities that better manage wet weather flows into the regional system. Further consultation with the Regional Engineers Advisory Committee (REAC) Liquid Waste Sub-Committee, REAC and the Regional Administrators Advisory Committee will occur this fall and in 2023 to finalize the overall cost apportionment methodology.

APPROVAL PROCESS

The proposed 2023 - 2027 Financial Plan and Annual Work Plan is presented for consideration and endorsement before being forwarded to the Board for consideration.

The next steps of the process are:

- The 2023 - 2027 Financial Plan and Annual Work Plan will be presented for consideration at the Metro Vancouver Board Budget Workshop on October 19, 2022.
- The Board will consider adoption of the 2023 Budget and endorsement of the 2023 - 2027 Financial Plan on October 28, 2022.

ALTERNATIVES

1. That the Liquid Waste Committee endorse the 2023 - 2027 Financial Plan for Liquid Waste Services as presented in the report dated September 27, 2022, titled “2023 - 2027 Financial Plan – Liquid Waste Services”, and forward it to the Metro Vancouver Board Budget Workshop on October 19, 2022 for consideration.
2. That the Liquid Waste Committee make recommendations and endorse an amended 2023 - 2027 Financial Plan for Liquid Waste Services and forward the amended Financial Plan to the Metro Vancouver Board Budget Workshop on October 19, 2022 for consideration.

FINANCIAL IMPLICATIONS

If the GVS&DD Board approves the 2023 Budget and endorses the 2023 - 2027 Financial Plan for Liquid Waste Services, as presented under Alternative 1, in 2023 the revenue from the annual levy for the system will increase by \$22.8 million (7.6%) to \$324.3 million which will generate the majority of the \$418.8 million in total revenue required to offset total expenditures. The increase in the levy represents an \$15 increase in the cost to the average regional household to \$295 (2022 forecast for 2023: \$321.)

Over the term of the five-year Financial Plan, the Liquid Waste Services annual levy is projected to increase by an average of \$75.4 million per year to provide the required revenue to offset projected expenditures. It is anticipated that the cost to the average regional household over the next five years will rise from \$295 in 2023 to \$579 in 2027 representing an average annual increase of \$60.

Under Alternative 2, the Committee may wish to consider recommending amendments to the 2023 Budget and Five-Year Financial Plan for consideration at the Metro Vancouver Board Budget Workshop. Any changes to the plan may have an impact on the Liquid Waste Services Financial Plan.

SUMMARY / CONCLUSION

The Liquid Waste Services 2023 Budget and Five-Year Financial Plan was prepared following direction received at the April 14, 2022 Metro Vancouver Board Budget Workshop and to respond to direction provided in the *Board Strategic Plan*. It is presented to Committee and Board members to provide overview information on activities and financial impacts for the years 2023 to 2027 for Liquid Waste Services.

The presentation of the 2023 Budget and Five-Year Financial Plan for Liquid Waste Services provides the opportunity for Metro Vancouver to share with its member jurisdictions the proposed capital projects and operating programs, and the financial impact of these projects, over the next five years. The financial plan illustrates how Metro Vancouver proposes to pay for Liquid Waste investments that will be required to maintain our assets and to respond to our region’s growing population. It is intended to be used as a guiding document for member jurisdictions in the development of their five-year financial plans and includes projections on household impact to demonstrate how the plan will remain affordable for Metro Vancouver residents while keeping pace with our critical infrastructure requirements.

Staff recommend endorsing the 2023 - 2027 Financial Plan and Annual Work Plans for Liquid Waste Services as presented under Alternative 1, which includes direction to introduce changes to allow the staged introduction of wet weather costing into the apportionment of the levy.

Attachments:

1. 2023 - 2027 Liquid Waste Services Financial Plan
2. 2023 - 2027 Liquid Waste Services Capital Budget Summary
3. 2023 Liquid Waste Services Work Plans
4. 2023 - 2027 “What’s Happening”
5. 2023 - 2027 Projected Reserves – Liquid Waste Services

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GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT
LIQUID WASTE SERVICES
2023 BUDGET REVIEW
2023-2027 FINANCIAL PLAN

	2022	2023	%	2024	%	2025	%	2026	%	2027	%
	BUDGET	BUDGET	CHANGE	FORECAST	CHANGE	FORECAST	CHANGE	FORECAST	CHANGE	FORECAST	CHANGE
REVENUES											
Liquid Waste Services Levy	\$ 301,424,687	\$ 324,265,595	7.6%	\$ 403,777,026	24.5%	\$ 492,474,707	22.0%	\$ 581,272,842	18.0%	\$ 678,672,079	16.8%
User Fees	3,370,229	4,331,703		5,454,337		6,677,424		7,200,972		7,604,991	
Transfer from DCC Reserves	60,751,328	63,572,619		69,571,672		79,429,974		92,963,737		113,739,505	
Liquid Waste Industrial Charges	12,262,636	12,495,626		13,169,057		13,655,992		14,044,413		14,465,746	
Other External Revenues	1,414,821	1,793,792		1,805,882		1,817,974		1,830,068		1,177,883	
Transfer from Sustainability Innovation Fund Reserves	2,698,067	757,000		442,000		-		-		-	
Transfer from Reserves	11,045,508	11,618,251		2,251,007		239,074		285,000		135,000	
TOTAL REVENUES	\$ 392,967,276	\$ 418,834,586	6.6%	\$ 496,470,981	18.5%	\$ 594,295,145	19.7%	\$ 697,597,032	17.4%	\$ 815,795,204	16.9%
EXPENDITURES											
Operating Programs:											
Policy Planning and Analysis											
Contribution to Sustainability Innovation Fund Reserve	\$ 1,127,000	\$ 1,127,000		\$ 1,127,000		\$ 1,127,000		\$ 1,127,000		\$ 1,127,000	
Utility Analysis and Infrastructure	2,977,326	2,954,604		3,532,831		4,652,842		4,187,129		4,296,582	
Utility Policy and Planning	3,563,541	3,712,150		3,774,646		3,634,017		3,704,185		3,807,982	
Wastewater Research and Innovation	3,610,080	2,051,836		1,989,764		1,589,038		1,629,864		1,668,064	
Wastewater Facilities Planning	-	560,402		1,122,530		1,112,628		1,344,004		1,364,169	
	11,277,947	10,405,992	(7.7%)	11,546,771	11.0%	12,115,525	4.9%	11,992,182	(1.0%)	12,263,797	2.3%
Management Systems and Utility Services											
Annacis Research Centre	492,843	502,112		510,353		518,724		527,453		535,410	
Dispatch	145,550	155,180		160,490		165,079		169,483		174,008	
Energy Management	210,568	323,386		420,151		434,052		448,328		463,000	
Engineers in Training	666,857	589,460		606,800		623,084		639,764		656,899	
Management Systems Utility Services	1,013,613	1,219,885		1,247,100		1,274,421		1,302,432		1,331,194	
Records Management	123,383	131,443		135,686		139,515		143,326		147,238	
Utility Voice Radio	159,823	135,465		144,894		148,792		152,017		159,714	
	2,812,637	3,056,931	8.7%	3,225,474	5.5%	3,303,667	2.4%	3,382,803	2.4%	3,467,463	2.5%
Environmental Management and Quality Control											
Environmental Management and Quality Control	12,823,690	13,445,222		15,244,391		15,974,660		16,731,156		16,381,584	
Source Compliance Monitoring	419,306	412,888		426,240		437,940		598,369		459,429	
Contribution to Reserve	101,285	106,282		108,399		109,834		113,061		116,264	
	13,344,281	13,964,392	4.6%	15,779,030	13.0%	16,522,434	4.7%	17,442,586	5.6%	16,957,277	(2.8%)
Project Delivery											
Minor Capital Projects	9,225,154	7,170,828		9,707,735		9,927,346		10,088,180		10,378,088	
	9,225,154	7,170,828	(22.3%)	9,707,735	35.4%	9,927,346	2.3%	10,088,180	1.6%	10,378,088	2.9%
Operations and Maintenance											
Lake City Operations	966,184	1,027,079		1,112,993		1,195,417		1,228,507		1,333,682	
Liquid Waste Residuals	34,406,220	28,874,666		38,596,109		41,293,327		44,161,861		44,864,374	
Maintenance	32,496,440	36,063,178		38,107,341		40,387,840		42,810,064		44,932,255	
SCADA Control Systems	1,097,380	1,126,131		1,201,876		1,218,609		1,279,212		1,352,867	
Urban Drainage	1,263,704	1,406,189		1,564,007		1,718,492		1,785,930		1,851,455	
Wastewater Collection	17,102,791	17,365,872		18,238,017		19,202,472		20,514,963		21,180,131	
Wastewater Treatment	49,626,692	55,069,772		63,960,391		63,713,166		67,185,178		70,097,116	
	136,959,411	140,932,887	2.9%	162,780,734	15.5%	168,729,323	3.7%	178,965,715	6.1%	185,611,880	3.7%
Administration and Department Support											
	2,593,267	2,882,626	11.2%	3,202,263	11.1%	3,674,566	14.7%	3,757,442	2.3%	3,874,716	3.1%
Communications Program											
	475,001	475,000	0.0%	503,500	6.0%	523,640	4.0%	539,350	3.0%	555,531	3.0%
Environmental Regulation and Enforcement											
	2,169,508	2,278,451	5.0%	2,348,492	3.1%	2,414,820	2.8%	2,483,539	2.8%	2,548,174	2.6%
Allocation of Centralized Support Costs											
	31,423,500	34,321,573	9.2%	36,395,879	6.0%	39,468,965	8.4%	42,225,062	7.0%	44,461,990	5.3%
Total Operating Programs	210,280,706	215,488,680	2.5%	245,489,878	13.9%	256,680,286	4.6%	270,876,859	5.5%	280,118,916	3.4%
Allocation of Project Delivery Cost											
	7,340,267	6,684,840	(8.9%)	7,269,546	8.7%	7,686,479	5.7%	7,939,684	3.3%	8,019,953	1.0%
Debt Service											
	98,990,808	116,305,572	17.5%	149,580,165	28.6%	210,569,122	40.8%	283,136,607	34.5%	374,354,506	32.2%
Contribution to Capital											
	76,355,495	80,355,494	5.2%	94,131,392	17.1%	119,359,258	26.8%	135,643,882	13.6%	153,301,829	13.0%
TOTAL EXPENDITURES	\$ 392,967,276	\$ 418,834,586	6.6%	\$ 496,470,981	18.5%	\$ 594,295,145	19.7%	\$ 697,597,032	17.4%	\$ 815,795,204	16.9%

GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT
LIQUID WASTE SERVICES
2023 BUDGET REVIEW
2023-2027 FINANCIAL PLAN
VANCOUVER SEWERAGE AREA

	2022 BUDGET	2023 BUDGET	% CHANGE	2024 FORECAST	% CHANGE	2025 FORECAST	% CHANGE	2026 FORECAST	% CHANGE	2027 FORECAST	% CHANGE
REVENUES											
Liquid Waste Services Levy	\$ 94,622,591	\$ 99,429,756	5.1%	\$ 123,173,022	23.9%	\$ 154,398,830	25.4%	\$ 182,159,251	18.0%	\$ 203,382,487	11.7%
User Fees	914,177	1,243,538		1,545,383		1,947,265		2,149,184		2,331,142	
Transfer from DCC Reserves	6,320,559	7,005,177		6,797,418		6,763,564		6,809,710		6,784,863	
Liquid Waste Industrial Charges	3,135,617	3,195,194		3,386,906		3,522,382		3,628,053		3,736,895	
Other External Revenues	154,282	154,282		154,282		154,282		154,282		70,000	
Transfer from Sustainability Innovation Fund Reserves	1,020,678	296,214		172,955		-		-		-	
Transfer from Reserves	8,293,508	11,373,251		1,923,397		104,074		58,695		-	
TOTAL REVENUES	\$ 114,461,412	\$ 122,697,412	7.2%	\$ 137,153,363	11.8%	\$ 166,890,397	21.7%	\$ 194,959,175	16.8%	\$ 216,305,387	10.9%
EXPENDITURES											
Operating Programs:											
Policy Planning and Analysis											
Contribution to Sustainability Innovation Fund Reserve	\$ 426,344	\$ 440,995		\$ 440,995		\$ 440,995		\$ 440,995		\$ 440,995	
Utility Analysis and Infrastructure	1,097,950	1,087,659		1,283,491		1,719,872		1,535,708		1,576,555	
Utility Policy and Planning	1,320,993	1,425,173		1,449,628		1,398,512		1,425,970		1,466,585	
Wastewater Research and Innovation	1,365,693	802,884		778,595		621,790		637,766		652,713	
Wastewater Facilities Planning	-	219,285		439,246		435,371		525,909		533,799	
	4,210,980	3,975,996	(5.6%)	4,391,955	10.5%	4,616,540	5.1%	4,566,348	(1.1%)	4,670,647	2.3%
Management Systems and Utility Services											
Annacis Research Centre	186,443	196,476		199,701		202,977		206,392		209,506	
Dispatch	42,945	45,088		46,631		47,965		49,244		50,559	
Energy Management	62,129	93,962		122,077		126,117		130,266		134,528	
Engineers in Training	252,274	230,654		237,439		243,811		250,338		257,042	
Management Systems Utility Services	299,117	354,450		362,357		370,296		378,435		386,792	
Records Management	36,404	38,191		39,424		40,537		41,644		42,781	
Utility Voice Radio	57,383	48,639		52,025		53,424		54,581		57,346	
	936,695	1,007,460	7.6%	1,059,654	5.2%	1,085,127	2.4%	1,110,900	2.4%	1,138,554	2.5%
Environmental Management and Quality Control											
Environmental Management and Quality Control	4,678,167	5,049,905		5,749,243		6,028,292		6,318,159		6,175,880	
Source Compliance Monitoring	158,623	161,563		166,788		171,366		234,142		179,775	
Contribution to Reserve	38,316	41,588		42,417		42,978		44,241		45,494	
	4,875,106	5,253,056	7.8%	5,958,448	13.4%	6,242,636	4.8%	6,596,542	5.7%	6,401,149	(3.0%)
Project Delivery											
Minor Capital Projects	3,625,573	1,496,392		2,007,819		2,033,143		2,051,496		2,108,366	
	3,625,573	1,496,392	(58.7%)	2,007,819	34.2%	2,033,143	1.3%	2,051,496	0.9%	2,108,366	2.8%
Operations and Maintenance											
Lake City Operations	365,508	401,896		435,515		467,766		480,715		521,870	
Liquid Waste Residuals	19,977,101	17,569,473		22,688,862		23,925,480		25,255,703		13,652,067	
Maintenance	8,842,743	9,761,264		10,077,617		10,650,334		11,024,535		11,469,129	
SCADA Control Systems	315,205	310,583		331,474		336,090		352,802		373,117	
Wastewater Collection	4,119,149	4,662,071		4,893,199		5,096,542		5,487,533		5,642,810	
Wastewater Treatment	14,465,043	15,567,664		16,230,336		17,063,770		17,208,330		18,352,694	
	48,084,749	48,272,951	0.4%	54,657,003	13.2%	57,539,982	5.3%	59,809,618	3.9%	50,011,687	(16.4%)
Administration and Department Support											
	765,273	837,576	9.4%	930,450	11.1%	1,067,682	14.7%	1,091,762	2.3%	1,125,837	3.1%
Communications Program											
	179,693	185,868	3.4%	197,020	6.0%	204,900	4.0%	211,048	3.0%	217,379	3.0%
Environmental Regulation and Enforcement											
	382,701	439,741	14.9%	453,259	3.1%	466,060	2.8%	479,323	2.8%	491,798	2.6%
Allocation of Centralized Support Costs											
	9,295,808	9,984,775	7.4%	10,669,925	6.9%	10,877,530	1.9%	11,893,423	9.3%	12,444,076	4.6%
Total Operating Programs	72,356,578	71,453,815	(1.2%)	80,325,533	12.4%	84,133,600	4.7%	87,810,459	4.4%	78,609,493	(10.5%)
Allocation of Project Delivery Cost	1,948,909	1,868,051	(4.1%)	2,031,445	8.7%	2,147,957	5.7%	2,218,716	3.3%	2,241,142	1.0%
Debt Service	10,969,679	16,189,300	47.6%	19,963,743	23.3%	31,978,617	60.2%	48,247,207	50.9%	70,554,047	46.2%
Contribution to Capital	29,186,246	33,186,246	13.7%	34,832,642	5.0%	48,630,223	39.6%	56,682,793	16.6%	64,900,705	14.5%
TOTAL EXPENDITURES	\$ 114,461,412	\$ 122,697,412	7.2%	\$ 137,153,363	11.8%	\$ 166,890,397	21.7%	\$ 194,959,175	16.8%	\$ 216,305,387	10.9%

GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT
LIQUID WASTE SERVICES
2023 BUDGET REVIEW
2023-2027 FINANCIAL PLAN
NORTH SHORE SEWERAGE AREA

	2022 BUDGET	2023 BUDGET	% CHANGE	2024 FORECAST	% CHANGE	2025 FORECAST	% CHANGE	2026 FORECAST	% CHANGE	2027 FORECAST	% CHANGE
REVENUES											
Liquid Waste Services Levy	\$ 30,045,674	\$ 34,247,339	14.0%	\$ 40,415,146	18.0%	\$ 54,211,209	34.1%	\$ 63,597,604	17.3%	\$ 70,091,818	10.2%
User Fees	62,515	63,459		64,625		65,814		67,027		68,264	
Transfer from DCC Reserves	2,256,693	2,513,190		2,090,059		2,084,995		2,121,873		2,130,879	
Liquid Waste Industrial Charges	907,707	924,953		942,527		960,435		978,683		1,008,043	
Other External Revenues	18,693	18,781		18,871		18,963		19,057		-	
Transfer from Sustainability Innovation Fund Reserves	187,516	48,978		28,597		-		-		-	
Transfer from Reserves	915,000	-		19,410		-		9,705		-	
TOTAL REVENUES	\$ 34,393,798	\$ 37,816,700	10.0%	\$ 43,579,235	15.2%	\$ 57,341,416	31.6%	\$ 66,793,949	16.5%	\$ 73,299,004	9.7%
EXPENDITURES											
Operating Programs:											
Policy Planning and Analysis											
Contribution to Sustainability Innovation Fund Reserve	\$ 78,327	\$ 72,917		\$ 72,917		\$ 72,917		\$ 72,917		\$ 72,917	
Utility Analysis and Infrastructure	201,712	179,840		212,221		284,374		253,924		260,677	
Utility Policy and Planning	242,688	235,647		239,691		231,239		235,779		242,494	
Wastewater Research and Innovation	250,900	132,753		128,737		102,811		105,452		107,924	
Wastewater Facilities Planning	-	36,258		72,628		71,987		86,957		88,262	
	773,627	657,415	(15.0%)	726,194	10.5%	763,328	5.1%	755,029	(1.1%)	772,274	2.3%
Management Systems and Utility Services											
Annacis Research Centre	34,253	32,487		33,020		33,561		34,126		34,641	
Dispatch	12,968	13,601		14,065		14,467		14,854		15,249	
Energy Management	18,762	28,338		36,817		38,035		39,286		40,572	
Engineers in Training	46,354	38,131		39,253		40,306		41,385		42,494	
Management Systems Utility Services	90,313	106,899		109,283		111,678		114,132		116,653	
Records Management	10,993	11,519		11,891		12,227		12,561		12,903	
Utility Voice Radio	15,213	12,894		13,791		14,163		14,470		15,202	
	228,856	243,869	6.6%	258,120	5.8%	264,437	2.4%	270,814	2.4%	277,714	2.5%
Environmental Management and Quality Control											
Environmental Management and Quality Control	984,603	978,692		1,097,463		1,147,981		1,199,949		1,180,216	
Source Compliance Monitoring	29,142	26,714		27,578		28,335		38,714		29,725	
Contribution to Reserve	7,039	6,876		7,013		7,106		7,315		7,522	
	1,020,784	1,012,282	(0.8%)	1,132,054	11.8%	1,183,422	4.5%	1,245,978	5.3%	1,217,463	(2.3%)
Project Delivery											
Minor Capital Projects	114,978	373,392		392,280		407,437		418,976		430,891	
	114,978	373,392	220.0%	392,280	5.1%	407,437	3.9%	418,976	2.8%	430,891	2.8%
Operations and Maintenance											
Lake City Operations	67,150	66,452		72,011		77,343		79,484		86,289	
Liquid Waste Residuals	949,148	719,094		882,657		1,248,668		2,150,724		3,995,401	
Maintenance	3,505,038	3,972,973		4,217,074		5,219,455		5,243,661		5,488,558	
SCADA Control Systems	153,686	174,410		186,140		188,732		198,117		209,526	
Wastewater Collection	2,796,033	3,235,021		3,391,433		3,505,727		3,734,292		3,859,225	
Wastewater Treatment	6,519,751	7,023,825		7,182,421		10,601,904		13,077,026		12,962,441	
	13,990,806	15,191,775	8.6%	15,931,736	4.9%	20,841,829	30.8%	24,483,304	17.5%	26,601,440	8.7%
Administration and Department Support											
	231,060	252,605	9.3%	280,614	11.1%	322,002	14.7%	329,265	2.3%	339,541	3.1%
Communications Program											
	33,013	30,733	(6.9%)	32,576	6.0%	33,880	4.0%	34,896	3.0%	35,943	3.0%
Environmental Regulation and Enforcement											
	118,238	128,277	8.5%	132,220	3.1%	135,954	2.8%	139,823	2.8%	143,462	2.6%
Allocation of Centralized Support Costs											
	2,780,999	3,009,200	8.2%	3,301,676	9.7%	3,465,734	5.0%	4,096,458	18.2%	4,250,537	3.8%
Total Operating Programs	19,292,361	20,899,548	8.3%	22,187,470	6.2%	27,418,023	23.6%	31,774,543	15.9%	34,069,264	7.2%
Allocation of Project Delivery Cost											
	640,927	530,045	(17.3%)	576,407	8.7%	609,466	5.7%	629,543	3.3%	635,906	1.0%
Debt Service											
	5,689,202	7,615,799	33.9%	13,575,885	78.3%	20,488,362	50.9%	24,529,729	19.7%	27,706,716	13.0%
Contribution to Capital											
	8,771,308	8,771,308	0.0%	7,239,473	(17.5%)	8,825,565	21.9%	9,860,134	11.7%	10,887,118	10.4%
TOTAL EXPENDITURES	\$ 34,393,798	\$ 37,816,700	10.0%	\$ 43,579,235	15.2%	\$ 57,341,416	31.6%	\$ 66,793,949	16.5%	\$ 73,299,004	9.7%

GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT
LIQUID WASTE SERVICES
2023 BUDGET REVIEW
2023-2027 FINANCIAL PLAN
LULU ISLAND WEST SEWERAGE AREA

	2022 BUDGET	2023 BUDGET	% CHANGE	2024 FORECAST	% CHANGE	2025 FORECAST	% CHANGE	2026 FORECAST	% CHANGE	2027 FORECAST	% CHANGE
REVENUES											
Liquid Waste Services Levy	\$ 26,919,245	\$ 29,380,218	9.1%	\$ 33,763,357	14.9%	\$ 42,404,971	25.6%	\$ 48,079,429	13.4%	\$ 53,156,820	10.6%
User Fees	150,695	146,209		149,027		151,901		154,833		157,823	
Transfer from DCC Reserves	2,391,566	2,353,241		2,370,695		2,373,000		2,510,807		2,413,922	
Liquid Waste Industrial Charges	918,747	936,203		953,991		972,117		990,587		1,020,305	
Other External Revenues	666,268	678,268		690,268		702,268		714,268		711,000	
Transfer from Sustainability Innovation Fund Reserves	188,325	50,265		29,349		-		-		-	
Transfer from Reserves	1,000,000	-		19,920		-		9,960		-	
TOTAL REVENUES	\$ 32,234,846	\$ 33,544,404	4.1%	\$ 37,976,607	13.2%	\$ 46,604,257	22.7%	\$ 52,459,884	12.6%	\$ 57,459,870	9.5%
EXPENDITURES											
Operating Programs:											
Policy Planning and Analysis											
Contribution to Sustainability Innovation Fund Reserve	\$ 78,665	\$ 74,833		\$ 74,833		\$ 74,833		\$ 74,833		\$ 74,833	
Utility Analysis and Infrastructure	202,582	184,566		217,797		291,846		260,595		267,527	
Utility Policy and Planning	243,736	241,839		245,988		237,315		241,974		248,866	
Wastewater Research and Innovation	251,984	136,242		132,121		105,512		108,223		110,759	
Wastewater Facilities Planning	-	37,211		74,536		73,878		89,242		90,581	
	776,967	674,690	(13.2%)	745,275	10.5%	783,384	5.1%	774,867	(1.1%)	792,566	2.3%
Management Systems and Utility Services											
Annacis Research Centre	34,400	33,340		33,887		34,443		35,023		35,551	
Dispatch	11,882	12,838		13,277		13,657		14,021		14,396	
Energy Management	17,191	26,753		34,759		35,909		37,090		38,303	
Engineers in Training	46,540	39,145		40,297		41,378		42,486		43,624	
Management Systems Utility Services	82,711	100,921		103,173		105,433		107,750		110,130	
Records Management	10,073	10,874		11,225		11,542		11,857		12,181	
Utility Voice Radio	13,389	11,348		12,138		12,464		12,735		13,379	
	216,186	235,219	8.8%	248,756	5.8%	254,826	2.4%	260,962	2.4%	267,564	2.5%
Environmental Management and Quality Control											
Environmental Management and Quality Control	942,912	950,795		1,071,570		1,122,008		1,174,014		1,152,276	
Source Compliance Monitoring	29,268	27,416		28,302		29,079		39,732		30,506	
Contribution to Reserve	7,070	7,057		7,198		7,293		7,507		7,720	
	979,250	985,268	0.6%	1,107,070	12.4%	1,158,380	4.6%	1,221,253	5.4%	1,190,502	(2.5%)
Project Delivery											
Minor Capital Projects	1,739,157	827,092		819,902		843,845		853,203		877,169	
	1,739,157	827,092	(52.4%)	819,902	(0.9%)	843,845	2.9%	853,203	1.1%	877,169	2.8%
Operations and Maintenance											
Lake City Operations	67,439	68,197		73,901		79,376		81,573		88,556	
Liquid Waste Residuals	1,826,052	1,472,479		2,260,880		2,418,388		2,588,968		4,151,815	
Maintenance	2,732,955	3,504,307		3,557,469		3,425,008		3,515,394		3,626,275	
SCADA Control Systems	31,358	30,510		32,563		33,016		34,659		36,654	
Wastewater Collection	554,066	531,022		566,231		596,491		664,080		684,825	
Wastewater Treatment	5,915,085	6,701,565		6,987,373		7,189,863		7,678,020		7,791,629	
	11,126,955	12,308,080	10.6%	13,478,417	9.5%	13,742,142	2.0%	14,562,694	6.0%	16,379,754	12.5%
Administration and Department Support											
	211,611	238,480	12.7%	264,923	11.1%	303,997	14.7%	310,853	2.3%	320,555	3.1%
Communications Program											
	33,155	31,540	(4.9%)	33,432	6.0%	34,770	4.0%	35,813	3.0%	36,887	3.0%
Environmental Regulation and Enforcement											
	217,168	236,048	8.7%	243,304	3.1%	250,175	2.8%	257,295	2.8%	263,991	2.6%
Allocation of Centralized Support Costs											
	2,571,105	2,836,038	10.3%	2,924,450	3.1%	3,029,663	3.6%	3,334,949	10.1%	3,356,042	0.6%
Total Operating Programs	17,871,553	18,372,456	2.8%	19,865,528	8.1%	20,401,182	2.7%	21,611,889	5.9%	23,485,030	8.7%
Allocation of Project Delivery Cost											
	412,260	392,453	(4.8%)	426,780	8.7%	451,257	5.7%	466,123	3.3%	470,834	1.0%
Debt Service											
	6,268,165	7,096,627	13.2%	9,879,597	39.2%	15,368,674	55.6%	18,965,122	23.4%	21,320,076	12.4%
Contribution to Capital											
	7,682,868	7,682,868	0.0%	7,804,702	1.6%	10,383,144	33.0%	11,416,750	10.0%	12,183,930	6.7%
TOTAL EXPENDITURES	\$ 32,234,846	\$ 33,544,404	4.1%	\$ 37,976,607	13.2%	\$ 46,604,257	22.7%	\$ 52,459,884	12.6%	\$ 57,459,870	9.5%

GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT
LIQUID WASTE SERVICES
2023 BUDGET REVIEW
2023-2027 FINANCIAL PLAN
FRASER SEWERAGE AREA

	2022 BUDGET	2023 BUDGET	% CHANGE	2024 FORECAST	% CHANGE	2025 FORECAST	% CHANGE	2026 FORECAST	% CHANGE	2027 FORECAST	% CHANGE
REVENUES											
Liquid Waste Services Levy	\$ 147,917,480	\$ 158,960,909	7.5%	\$ 203,774,523	28.2%	\$ 238,623,308	17.1%	\$ 284,514,031	19.2%	\$ 349,041,008	22.7%
User Fees	2,242,842	2,878,497		3,695,302		4,512,444		4,829,928		5,047,762	
Transfer from DCC Reserves	49,782,510	51,701,011		58,313,500		68,208,415		81,521,347		102,409,841	
Liquid Waste Industrial Charges	7,300,565	7,439,276		7,885,633		8,201,058		8,447,090		8,700,503	
Other External Revenues	575,578	942,461		942,461		942,461		942,461		396,883	
Transfer from Sustainability Innovation Fund Reserves	1,301,548	361,543		211,099		-		-		-	
Transfer from Reserves	707,000	-		143,280		-		71,640		-	
TOTAL REVENUES	\$ 209,827,523	\$ 222,283,697	5.9%	\$ 274,965,798	23.7%	\$ 320,487,686	16.6%	\$ 380,326,497	18.7%	\$ 465,595,997	22.4%
EXPENDITURES											
Operating Programs:											
Policy Planning and Analysis											
Contribution to Sustainability Innovation Fund Reserve	\$ 543,664	\$ 538,255		\$ 538,255		\$ 538,255		\$ 538,255		\$ 538,255	
Utility Analysis and Infrastructure	1,400,082	1,327,539		1,566,561		2,099,184		1,874,403		1,924,259	
Utility Policy and Planning	1,684,502	1,739,491		1,769,339		1,706,951		1,740,462		1,790,037	
Wastewater Research and Innovation	1,741,503	979,957		950,311		758,925		778,423		796,668	
Wastewater Facilities Planning	-	267,648		536,120		531,391		641,896		651,527	
	5,369,751	4,852,890	(9.6%)	5,360,587	10.5%	5,634,706	5.1%	5,573,439	(1.1%)	5,700,746	2.3%
Management Systems and Utility Services											
Annacis Research Centre	237,747	239,809		243,745		247,743		251,912		255,712	
Dispatch	76,846	82,892		85,729		88,180		90,533		92,950	
Energy Management	111,168	172,748		224,439		231,865		239,490		247,328	
Engineers in Training	321,689	281,530		289,811		297,589		305,555		313,739	
Management Systems Utility Services	535,188	651,638		666,176		680,770		695,733		711,097	
Records Management	65,143	70,213		72,480		74,525		76,560		78,650	
Utility Voice Radio	73,838	62,584		66,940		68,741		70,231		73,787	
	1,421,619	1,561,414	9.8%	1,649,320	5.6%	1,689,413	2.4%	1,730,014	2.4%	1,773,263	2.5%
Environmental Management and Quality Control											
Environmental Management and Quality Control	6,218,008	6,465,830		7,326,115		7,676,379		8,039,034		7,873,212	
Source Compliance Monitoring	202,273	197,195		203,572		209,160		285,781		219,423	
Contribution to Reserve	48,860	50,761		51,771		52,457		53,998		55,528	
	6,469,141	6,713,786	3.8%	7,581,458	12.9%	7,937,996	4.7%	8,378,813	5.6%	8,148,163	(2.8%)
Project Delivery											
Minor Capital Projects	3,520,446	4,045,952		6,043,454		6,185,776		6,296,265		6,479,375	
	3,520,446	4,045,952	14.9%	6,043,454	49.4%	6,185,776	2.4%	6,296,265	1.8%	6,479,375	2.9%
Operations and Maintenance											
Lake City Operations	466,087	490,534		531,566		570,932		586,735		636,967	
Liquid Waste Residuals	11,653,919	9,113,620		12,763,710		13,700,791		14,166,466		23,065,091	
Maintenance	17,256,083	18,640,284		20,064,388		20,894,500		22,816,094		24,132,032	
SCADA Control Systems	576,324	589,227		628,859		637,613		669,324		707,860	
Wastewater Collection	9,633,543	8,937,758		9,387,154		10,003,712		10,629,058		10,993,271	
Wastewater Treatment	22,726,813	25,776,718		33,560,261		28,857,629		29,221,802		30,990,352	
	62,312,769	63,548,141	2.0%	76,935,938	21.1%	74,665,177	(3.0%)	78,089,479	4.6%	90,525,573	15.9%
Administration and Department Support											
	1,369,245	1,539,840	12.5%	1,710,585	11.1%	1,962,879	14.7%	2,007,151	2.3%	2,069,797	3.1%
Communications Program											
	229,140	226,859	(1.0%)	240,472	6.0%	250,090	4.0%	257,593	3.0%	265,322	3.0%
Environmental Regulation and Enforcement											
	1,451,401	1,474,385	1.6%	1,519,709	3.1%	1,562,631	2.8%	1,607,098	2.8%	1,648,923	2.6%
Allocation of Centralized Support Costs											
	16,570,811	18,309,694	10.5%	19,276,537	5.3%	21,870,268	13.5%	22,685,526	3.7%	24,211,988	6.7%
Total Operating Programs	98,714,323	102,272,961	3.6%	120,318,059	17.6%	121,758,936	1.2%	126,625,378	4.0%	140,823,150	11.2%
Allocation of Project Delivery Cost											
	4,334,365	3,891,818	(10.2%)	4,232,224	8.7%	4,474,955	5.7%	4,622,365	3.3%	4,669,104	1.0%
Debt Service											
	76,063,762	85,403,846	12.3%	106,160,940	24.3%	142,733,469	34.5%	191,394,549	34.1%	254,773,667	33.1%
Contribution to Capital											
	30,715,073	30,715,072	0.0%	44,254,575	44.1%	51,520,326	16.4%	57,684,205	12.0%	65,330,076	13.3%
TOTAL EXPENDITURES	\$ 209,827,523	\$ 222,283,697	5.9%	\$ 274,965,798	23.7%	\$ 320,487,686	16.6%	\$ 380,326,497	18.7%	\$ 465,595,997	22.4%

GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT
LIQUID WASTE SERVICES
2023 BUDGET REVIEW
2023-2027 FINANCIAL PLAN
DRAINAGE

	2022 BUDGET	2023 BUDGET	% CHANGE	2024 FORECAST	% CHANGE	2025 FORECAST	% CHANGE	2026 FORECAST	% CHANGE	2027 FORECAST	% CHANGE
REVENUES											
Liquid Waste Services Levy	\$ 1,919,697	\$ 2,247,373	17.1%	\$ 2,650,977	18.0%	\$ 2,836,389	7.0%	\$ 2,922,526	3.0%	\$ 2,999,946	2.6%
Transfer from Reserves	130,000	245,000		145,000		135,000		135,000		135,000	
TOTAL REVENUES	<u>\$ 2,049,697</u>	<u>\$ 2,492,373</u>	21.6%	<u>\$ 2,795,977</u>	12.2%	<u>\$ 2,971,389</u>	6.3%	<u>\$ 3,057,526</u>	2.9%	<u>\$ 3,134,946</u>	2.5%
EXPENDITURES											
Operating Programs:											
Policy Planning and Analysis											
Utility Analysis and Infrastructure	\$ 75,000	\$ 175,000		\$ 252,761		\$ 257,566		\$ 262,499		\$ 267,564	
Utility Policy and Planning	71,622	70,000		70,000		60,000		60,000		60,000	
	<u>146,622</u>	<u>245,000</u>	67.1%	<u>322,761</u>	31.7%	<u>317,566</u>	(1.6%)	<u>322,499</u>	1.6%	<u>327,564</u>	1.6%
Management Systems and Utility Services											
Dispatch	909	761		788		810		831		854	
Energy Management	1,318	1,585		2,059		2,126		2,196		2,269	
Management Systems Utility Services	6,284	5,977		6,111		6,245		6,382		6,523	
Records Management	770	646		666		684		704		723	
	<u>9,281</u>	<u>8,969</u>	(3.4%)	<u>9,624</u>	7.3%	<u>9,865</u>	2.5%	<u>10,113</u>	2.5%	<u>10,369</u>	2.5%
Project Delivery											
Minor Capital Projects	225,000	428,000		444,280		457,145		468,240		482,287	
	<u>225,000</u>	<u>428,000</u>	90.2%	<u>444,280</u>	3.8%	<u>457,145</u>	2.9%	<u>468,240</u>	2.4%	<u>482,287</u>	3.0%
Operations and Maintenance											
Maintenance	159,621	184,350		190,793		198,543		210,380		216,261	
SCADA Control Systems	20,807	21,401		22,840		23,158		24,310		25,710	
Urban Drainage	1,263,704	1,406,189		1,564,007		1,718,492		1,785,930		1,851,455	
	<u>1,444,132</u>	<u>1,611,940</u>	11.6%	<u>1,777,640</u>	10.3%	<u>1,940,193</u>	9.1%	<u>2,020,620</u>	4.1%	<u>2,093,426</u>	3.6%
Administration and Department Support	16,078	14,125	(12.1%)	15,691	11.1%	18,006	14.8%	18,411	2.2%	18,986	3.1%
Allocation of Centralized Support Costs	204,778	181,866	(11.2%)	223,291	22.8%	225,770	1.1%	214,706	(4.9%)	199,347	(7.2%)
Total Operating Programs	<u>2,045,891</u>	<u>2,489,900</u>	21.7%	<u>2,793,287</u>	12.2%	<u>2,968,545</u>	6.3%	<u>3,054,589</u>	2.9%	<u>3,131,979</u>	2.5%
Allocation of Project Delivery Cost	3,806	2,473	(35.0%)	2,690	8.8%	2,844	5.7%	2,937	3.3%	2,967	1.0%
TOTAL EXPENDITURES	<u>\$ 2,049,697</u>	<u>\$ 2,492,373</u>	21.6%	<u>\$ 2,795,977</u>	12.2%	<u>\$ 2,971,389</u>	6.3%	<u>\$ 3,057,526</u>	2.9%	<u>\$ 3,134,946</u>	2.5%

GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT
CAPITAL PORTFOLIO
LIQUID WASTE SERVICES
2023 CAPITAL BUDGET AND 2023-2027 CAPITAL PLAN

	CAPITAL BUDGET FOR APPROVAL	2023 CAPITAL CASH FLOW	2024 CAPITAL CASH FLOW	2025 CAPITAL CASH FLOW	2026 CAPITAL CASH FLOW	2027 CAPITAL CASH FLOW	2023 TO 2027 TOTAL CAPITAL CASH FLOW	ACTIVE PHASE	PRIMARY DRIVER
CAPITAL EXPENDITURES									
Collections									
8th Avenue Interceptor Air Treatment Facilities	\$ 500,000	\$ -	\$ -	\$ -	\$ 500,000	\$ 500,000	\$ 1,000,000	Definition	Upgrade
Albert Street Trunk Sewer	10,250,000	400,000	-	-	-	-	400,000	Construction	Growth
Big Bend Forcemain - Gate Replacement	200,000	80,000	-	-	600,000	650,000	1,330,000	Design	Maintenance
Burnaby Lake North Interceptor Cariboo Section	-	-	700,000	1,700,000	11,200,000	15,000,000	28,600,000	Not Started	Growth
Burnaby Lake North Interceptor Winston Section	116,950,000	33,450,000	24,150,000	5,000,000	5,000,000	5,000,000	72,600,000	Construction	Growth
Burnaby South Slope Interceptor	500,000	200,000	250,000	500,000	600,000	4,450,000	6,000,000	Multiple	Growth
Cloverdale Pump Station Capacity Upgrade	3,400,000	500,000	1,300,000	900,000	15,000,000	5,000,000	22,700,000	Design	Growth
Cloverdale Trunk Sewer Capacity Upgrade	1,200,000	250,000	450,000	1,800,000	900,000	8,150,000	11,550,000	Design	Growth
Combined Sewer Overflow Sampling Station Enhancements	1,900,000	350,000	250,000	-	-	-	600,000	Construction	Maintenance
Crescent Beach FM - Replacement	26,850,000	2,025,000	25,000	25,000	25,000	275,000	2,375,000	Construction	Maintenance
Eagle Creek (Lower Section) Channel Restoration	-	-	-	750,000	-	-	750,000	Not Started	Resilience
EMQC-Chemistry Laboratory	250,000	250,000	650,000	7,740,000	-	-	8,640,000	Definition	Upgrade
Fraser Sewerage Area Integrated Resource Recovery (IRR) Study	1,200,000	500,000	438,000	-	-	-	938,000	Design	Opportunity
Front Street Pressure Sewer Access Hatches Reinforcement	5,000,000	2,000,000	2,000,000	-	-	-	4,000,000	Construction	Maintenance
FSA Flow Metering Program	2,500,000	500,000	500,000	300,000	200,000	-	1,500,000	Design	Maintenance
FSA River Crossing Scour Protection Program - Phase 1	4,200,000	330,000	1,550,000	630,000	-	-	2,510,000	Construction	Maintenance
FSA Sewer Relocations and Protections	11,700,000	6,550,000	2,050,000	-	-	-	8,600,000	Construction	Maintenance
FSA Statutory Right of Way Acquisitions Phase 1	35,100,000	4,800,000	12,000,000	4,800,000	-	-	21,600,000	Design	Maintenance
Gilbert/Brighthouse Trunk Pressure Sewer	169,650,000	34,600,000	40,100,000	18,450,000	100,000	600,000	93,850,000	Multiple	Maintenance
Glenbrook Combined Trunk Kingsway Sanitary Section	7,200,000	4,950,000	1,500,000	-	-	-	6,450,000	Construction	Growth
Glenbrook CSO Gate Replacement	5,150,000	3,075,000	1,550,000	-	-	-	4,625,000	Construction	Maintenance
Gleneagles Forcemain Replacement	15,850,000	2,250,000	5,750,000	3,250,000	-	-	11,250,000	Multiple	Maintenance
Gleneagles Pump Stations Improvements	33,300,000	7,280,000	11,120,000	3,400,000	4,700,000	4,500,000	31,000,000	Construction	Maintenance
Harbour Pump Station Discharge Header Repair and Valve Replacements	2,500,000	1,950,000	-	-	-	-	1,950,000	Construction	Maintenance
Harbour Pump Station Power Distribution Equipment Replacement	1,600,000	950,000	300,000	1,400,000	-	-	2,650,000	Design	Maintenance
Hastings-Cassiar Intake Connection	5,350,000	1,030,000	-	-	-	-	1,030,000	Construction	Growth
Highbury Interceptor Diversion Junction Chamber Wall Rehabilitation	500,000	300,000	200,000	-	5,500,000	-	6,000,000	Design	Maintenance
Highbury Interceptor North Arm Crossing - Upgrade of Siphons	12,500,000	50,000	-	-	-	-	50,000	Construction	Resilience
Jervis Pump Station 25kV Voltage Conversion	1,300,000	850,000	-	-	-	-	850,000	Construction	Maintenance
Kent Pump Station High Voltage Switchgear Replacement	1,150,000	850,000	500,000	350,000	-	-	1,700,000	Design	Maintenance
Lozells Sanitary Trunk Golf Course Section	-	-	-	50,000	400,000	200,000	650,000	Not Started	Growth
LSA Flow Metering Program	300,000	50,000	50,000	-	-	-	100,000	Construction	Maintenance
Manitoba Street Combined Trunk Sewer Separation	-	-	-	-	100,000	1,400,000	1,500,000	Not Started	Upgrade
Marshend Pump Station	10,500,000	1,150,000	1,600,000	9,800,000	6,675,000	-	19,225,000	Multiple	Growth
New CSO Management Gates for New Westminster Interceptor	3,250,000	1,950,000	425,000	-	-	-	2,375,000	Construction	Upgrade
New West Interceptor - Annacis Section 2	42,000,000	2,100,000	2,800,000	6,800,000	6,800,000	5,250,000	23,750,000	Construction	Maintenance
New West Interceptor Grit Chamber	1,250,000	300,000	400,000	250,000	4,000,000	4,000,000	8,950,000	Design	Maintenance
New Westminster Interceptor Repair Columbia St. Section	39,550,000	16,100,000	1,000,000	-	-	-	17,100,000	Construction	Maintenance
New Westminster Interceptor West Branch and Columbia Extension Rehabilitation	2,900,000	1,150,000	1,100,000	15,000,000	6,100,000	4,100,000	27,450,000	Design	Maintenance
North Road Trunk Sewer	11,700,000	2,300,000	1,200,000	1,200,000	-	-	4,700,000	Construction	Growth
North Road Trunk Sewer Phase 2	8,450,000	2,000,000	4,000,000	1,500,000	-	-	7,500,000	Construction	Growth
North Surrey Interceptor - Port Mann Section - Odour Control	5,050,000	2,850,000	1,400,000	-	-	5,000,000	9,250,000	Construction	Upgrade
North Surrey Interceptor Annville Channel Crossing Scour Protection	4,350,000	2,400,000	-	-	-	-	2,400,000	Construction	Maintenance
North Surrey Interceptor Improvements	3,000,000	100,000	1,950,000	2,950,000	1,000,000	-	6,000,000	Multiple	Maintenance
North Surrey Interceptor Roebuck Section Replacement	1,600,000	500,000	1,450,000	1,000,000	10,000,000	5,000,000	17,950,000	Design	Maintenance
NSA Flow Metering Program	500,000	150,000	200,000	100,000	100,000	-	550,000	Design	Maintenance
NSA Scour Protection Upgrades	2,250,000	1,000,000	-	-	-	-	1,000,000	Construction	Maintenance

GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT
CAPITAL PORTFOLIO
LIQUID WASTE SERVICES
2023 CAPITAL BUDGET AND 2023-2027 CAPITAL PLAN

	CAPITAL BUDGET FOR APPROVAL	2023 CAPITAL CASH FLOW	2024 CAPITAL CASH FLOW	2025 CAPITAL CASH FLOW	2026 CAPITAL CASH FLOW	2027 CAPITAL CASH FLOW	2023 TO 2027 TOTAL CAPITAL CASH FLOW	ACTIVE PHASE	PRIMARY DRIVER
NSI 104th Ave Extension	12,950,000	-	-	6,500,000	1,500,000	-	8,000,000	Construction	Growth
NSI Flow Management	11,500,000	900,000	21,250,000	31,000,000	31,000,000	4,000,000	88,150,000	Design	Upgrade
NSI Rehab or Replacement	16,450,000	1,550,000	4,500,000	27,000,000	6,500,000	850,000	40,400,000	Construction	Maintenance
Ocean Park Trunk Manholes Lining	-	-	50,000	1,000,000	-	-	1,050,000	Not Started	Maintenance
Ocean Park Trunk Sewer - Air Management Facility	2,750,000	1,000,000	2,500,000	2,500,000	-	-	6,000,000	Design	Upgrade
Port Coquitlam Pump Station Refurbishment	5,950,000	3,350,000	1,500,000	23,100,000	25,100,000	4,500,000	57,550,000	Design	Maintenance
Port Moody Pump Station Capacity Upgrade	2,300,000	400,000	1,850,000	950,000	7,900,000	7,900,000	19,000,000	Design	Growth
Port Moody South Interceptor Capacity Upgrade	-	-	150,000	150,000	150,000	2,000,000	2,450,000	Not Started	Growth
Port Moody Storm Drain Rehabilitation	200,000	-	-	-	400,000	600,000	1,000,000	Design	Maintenance
Production Way Facility Access and Parking Improvements	4,850,000	1,100,000	1,000,000	-	-	-	2,100,000	Construction	Maintenance
Production Way Operation Center Design and Construction	31,000,000	1,050,000	6,000,000	15,000,000	8,910,000	-	30,960,000	Construction	Upgrade
Rosemary Heights Pressure Sewer Capacity Upgrade	-	-	-	350,000	500,000	700,000	1,550,000	Not Started	Growth
Royal Ave PS Rehabilitation	10,100,000	1,200,000	4,000,000	2,750,000	-	-	7,950,000	Construction	Maintenance
Sapperton Pump Station	97,500,000	1,400,000	3,600,000	500,000	-	-	5,500,000	Multiple	Growth
Sapperton Pump Station Emergency Backup Power	5,000,000	2,400,000	2,100,000	-	-	-	4,500,000	Construction	Resilience
Sewer Heat Projects	21,400,000	2,100,000	5,200,000	7,800,000	10,000,000	9,900,000	35,000,000	Construction	Opportunity
South Surrey Interceptor Johnston Section	84,050,000	9,345,000	7,300,000	15,950,000	-	-	32,595,000	Construction	Growth
South Surrey Interceptor Rehabilitation	1,800,000	900,000	2,500,000	21,450,000	30,000,000	10,640,000	65,490,000	Multiple	Maintenance
SSI - King George Section - Odor Control Facility (OCF) and Grit Chamber	19,550,000	1,150,000	-	-	-	-	1,150,000	Construction	Growth
SSI Influent Control Chamber Repair and Replace Gates	150,000	-	-	1,190,000	-	-	1,190,000	Design	Maintenance
SSI Sulfide Odour and Corrosion Control	9,550,000	2,750,000	1,000,000	-	-	-	3,750,000	Construction	Upgrade
Stoney Creek Sanitary Trunk	3,700,000	450,000	1,500,000	1,500,000	3,900,000	12,000,000	19,350,000	Design	Growth
Surrey Central Valley Capacity Upgrade	-	-	-	-	150,000	450,000	600,000	Not Started	Growth
Surrey Corrosion Control Facility Replacement	7,300,000	2,200,000	2,500,000	1,500,000	-	-	6,200,000	Construction	Maintenance
VSA Emergency Backup Power	24,300,000	3,050,000	3,200,000	2,550,000	1,200,000	-	10,000,000	Construction	Resilience
VSA Flow Metering Program	1,900,000	600,000	1,200,000	1,200,000	1,500,000	-	4,500,000	Design	Maintenance
VSA Grit Chamber Access Improvements	2,000,000	1,800,000	100,000	-	-	-	1,900,000	Construction	Maintenance
VSA Sewer Relocations and Protections	32,050,000	11,200,000	-	-	-	-	11,200,000	Construction	Maintenance
Westridge FM Replacement	7,600,000	5,550,000	900,000	-	-	-	6,450,000	Construction	Maintenance
Westridge Pump Stations 1 & 2 Refurbishment	2,800,000	1,550,000	1,100,000	7,500,000	4,950,000	-	15,100,000	Design	Maintenance
White Rock Forcemain Rehabilitation	1,200,000	650,000	10,300,000	3,300,000	-	-	14,250,000	Design	Maintenance
Works Yard	32,000,000	1,000,000	-	-	-	-	1,000,000	Design	Maintenance
Total Collections	\$ 1,066,300,000	\$ 203,065,000	\$ 210,208,000	\$ 264,385,000	\$ 213,160,000	\$ 122,615,000	\$ 1,013,433,000		
Treatment Plants									
AIWWTP Ammonia Removal – Sidestream	1,000,000	150,000	-	-	-	-	150,000	Design	Upgrade
AIWWTP Chemical Lab UPS System Replacement	600,000	400,000	50,000	-	-	-	450,000	Construction	Maintenance
AIWWTP Cogen Building Refurbishment	1,500,000	300,000	-	-	-	-	300,000	Construction	Maintenance
AIWWTP Cogeneration Backup Power	80,500,000	1,550,000	1,000,000	-	-	-	2,550,000	Multiple	Resilience
AIWWTP Digester No. 5*	6,900,000	500,000	3,500,000	3,387,000	4,000,000	4,500,000	15,887,000	Design	Growth
AIWWTP Electrical Distribution System Protection Control and Monitoring	2,650,000	700,000	250,000	600,000	-	-	1,550,000	Construction	Upgrade
AIWWTP Hydrothermal Processing Pilot	28,650,000	7,000,000	7,050,000	6,000,000	3,400,000	1,550,000	25,000,000	Construction	Opportunity
AIWWTP ICS Replacement Program	14,350,000	1,500,000	2,750,000	2,500,000	2,500,000	2,500,000	11,750,000	Construction	Maintenance
AIWWTP Influent System Remediation	2,400,000	500,000	800,000	1,050,000	14,500,000	20,700,000	37,550,000	Design	Maintenance
AIWWTP IPS Gates Replacements	700,000	250,000	400,000	-	-	-	650,000	Construction	Maintenance
AIWWTP IPS Pump Building Roof Replacement Phase 2	-	-	100,000	500,000	200,000	-	800,000	Not Started	Maintenance
AIWWTP Lubrication Storage Facility Conversion	500,000	500,000	-	-	-	-	500,000	Construction	Maintenance
AIWWTP O&M Building Refurbishment	-	-	100,000	1,200,000	3,100,000	1,800,000	6,200,000	Not Started	Maintenance
AIWWTP Outfall Repair	1,550,000	800,000	750,000	-	-	-	1,550,000	Construction	Maintenance

GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT
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AIWWTP Replacement of ICS Equipment	4,450,000	100,000	250,000	-	-	-	350,000	Multiple	Maintenance
AIWWTP Replacement of Protective Relays	3,350,000	100,000	850,000	-	-	-	950,000	Construction	Maintenance
AIWWTP Scheduled 64kV Potential & Current Transformer Replacements	800,000	100,000	200,000	250,000	-	-	550,000	Construction	Maintenance
AIWWTP Scum Pump Replacement	-	-	200,000	150,000	500,000	500,000	1,350,000	Not Started	Maintenance
AIWWTP Secondary Clarifier Corrosion Repair	57,800,000	200,000	200,000	-	-	-	400,000	Multiple	Maintenance
AIWWTP Secondary Effluent Discharge Flowmeter Replacement	400,000	100,000	250,000	-	-	-	350,000	Construction	Maintenance
AIWWTP Sludge Control Building Electrical Room HVAC upgrade	850,000	850,000	-	-	-	-	850,000	Construction	Maintenance
AIWWTP Spare Trickling Filter Pump & Motor Purchase	1,950,000	90,000	-	-	-	-	90,000	Construction	Maintenance
AIWWTP Stage 5 Expansion*	944,100,000	31,800,000	40,000,000	52,000,000	105,000,000	131,000,000	359,800,000	Multiple	Growth
AIWWTP Station Battery Replacement	1,250,000	50,000	100,000	-	-	-	150,000	Multiple	Maintenance
AIWWTP Trickling Filter Media & Distributor Arms & Ducting Replacement	90,700,000	18,100,000	320,000	50,000	-	-	18,470,000	Construction	Maintenance
AIWWTP UPS Condition Monitoring System	-	-	400,000	150,000	-	-	550,000	Not Started	Resilience
All WWTPs Power Quality Monitoring & Outage Alarming Network	3,000,000	50,000	50,000	-	-	-	100,000	Construction	Upgrade
Annacis Influent System Surge Control Refurbishment	22,000,000	2,250,000	400,000	50,000	-	-	2,700,000	Construction	Growth
Annacis MCC 80 051, 80 070, 80 071 Replacement	2,850,000	50,000	550,000	-	-	-	600,000	Construction	Maintenance
Annacis Outfall System*	356,050,000	19,400,000	5,750,000	20,050,000	76,450,000	50,000	121,700,000	Construction	Growth
Biosolids Dryer*	22,700,000	1,500,000	13,400,000	43,400,000	76,500,000	109,500,000	244,300,000	Design	Opportunity
Ferguson Road Paving Refurbishment	2,100,000	1,500,000	-	-	-	-	1,500,000	Construction	Upgrade
IIWWTP - Biogas Lines Relocation	5,750,000	650,000	700,000	-	-	-	1,350,000	Construction	Resilience
IIWWTP Biosolids Dewatering Facility	61,300,000	510,000	750,000	-	-	-	1,260,000	Construction	Upgrade
IIWWTP CEPT Polymer Line Replacement	300,000	250,000	750,000	300,000	-	-	1,300,000	Design	Maintenance
IIWWTP CEPT Winterization	1,500,000	750,000	-	-	-	-	750,000	Construction	Maintenance
IIWWTP ICS IPS Control Replacement	1,750,000	550,000	-	-	-	-	550,000	Construction	Maintenance
IIWWTP ICS Migration Program	-	-	500,000	3,000,000	4,000,000	3,000,000	10,500,000	Not Started	Maintenance
IIWWTP ICS Replacement Program	750,000	200,000	200,000	200,000	-	-	600,000	Construction	Maintenance
IIWWTP Influent Gate Refurbishment	1,350,000	300,000	100,000	-	-	-	400,000	Construction	Maintenance
IIWWTP IPS Drive Remediation	1,400,000	350,000	500,000	350,000	150,000	-	1,350,000	Construction	Maintenance
IIWWTP MCC/Power Distribution Assess/Replace - Phase 2	1,000,000	50,000	250,000	-	-	-	300,000	Construction	Maintenance
IIWWTP Non-Domestic Trucked Liquid Waste Alternative	800,000	600,000	200,000	-	-	-	800,000	Construction	Maintenance
IIWWTP Outfall Refurbishment	20,000,000	1,500,000	2,000,000	3,000,000	3,000,000	63,000,000	72,500,000	Design	Maintenance
IIWWTP PA Tanks Improvement	6,500,000	1,000,000	1,000,000	1,050,000	1,100,000	1,150,000	5,300,000	Construction	Maintenance
IIWWTP PA-Sed Tank & Gallery Wall Refurbishment	200,000	100,000	125,000	100,000	250,000	200,000	775,000	Design	Maintenance
IIWWTP Replacement of CoGen Control System	2,500,000	350,000	100,000	400,000	-	-	850,000	Construction	Maintenance
IIWWTP Siphon Chamber Refurbishment	200,000	100,000	110,000	730,000	900,000	300,000	2,140,000	Design	Maintenance
IIWWTP Solids Handling Refurbishment	64,850,000	200,000	150,000	-	-	-	350,000	Multiple	Maintenance
IIWWTP Standby Diesel Generators	2,000,000	100,000	650,000	750,000	950,000	750,000	3,200,000	Design	Resilience
IIWWTP Surge Mitigation	250,000	250,000	1,750,000	-	-	-	2,000,000	Design	Maintenance
Iona Island Control & Instrumentation Replacement 2011	2,750,000	100,000	-	-	-	-	100,000	Construction	Maintenance
Iona Island Wastewater Treatment Plant*	1,060,000,000	59,850,000	125,300,000	300,550,000	295,650,000	362,350,000	1,143,700,000	Construction	Upgrade
LIWWTP Admin Dewatering Building Roof Repair	100,000	90,000	700,000	-	-	-	790,000	Design	Maintenance
LIWWTP Biogas Clean-up Project	13,800,000	600,000	750,000	-	-	-	1,350,000	Construction	Opportunity
LIWWTP CCT Isolation Gates	2,050,000	500,000	400,000	400,000	-	-	1,300,000	Construction	Maintenance
LIWWTP Effluent Heat Recovery Project	10,000,000	1,000,000	2,000,000	3,000,000	2,000,000	2,000,000	10,000,000	Construction	Opportunity
LIWWTP Gravity Thickener Redundancy	500,000	75,000	425,000	2,125,000	18,750,000	-	21,375,000	Design	Maintenance
LIWWTP Ground Fault Detection System Replacement	1,550,000	300,000	300,000	750,000	150,000	-	1,500,000	Construction	Maintenance
LIWWTP High Efficiency Boiler	1,300,000	310,000	300,000	300,000	200,000	-	1,110,000	Construction	Maintenance
LIWWTP ICS Electrical Distribution System Migration Program	-	-	1,250,000	4,000,000	1,750,000	-	7,000,000	Not Started	Maintenance
LIWWTP ICS Replacement Program	6,750,000	2,000,000	1,600,000	650,000	-	-	4,250,000	Construction	Maintenance
LIWWTP PA-Sed Tank Refurbishment	4,150,000	1,000,000	1,000,000	1,000,000	-	-	3,000,000	Construction	Maintenance
LIWWTP Pilot Digestion Optimization Facility	4,850,000	650,000	650,000	550,000	350,000	-	2,200,000	Construction	Opportunity

GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT
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LIWWTP Power Reliability	12,400,000	4,500,000	4,200,000	-	-	-	8,700,000	Construction	Resilience
LIWWTP SCL Refurbishment	850,000	50,000	500,000	800,000	1,150,000	10,350,000	12,850,000	Design	Maintenance
LIWWTP Trickling Filter Refurbishment	500,000	50,000	350,000	400,000	650,000	10,200,000	11,650,000	Design	Maintenance
NLWWTP 25 kV Substation Replacement	10,100,000	100,000	950,000	-	-	-	1,050,000	Construction	Maintenance
NLWWTP Screw Pump Replacement	1,550,000	100,000	100,000	-	-	-	200,000	Construction	Maintenance
NLWWTP Standby Diesel Generator	1,000,000	400,000	400,000	-	-	-	800,000	Construction	Resilience
North Shore WWTP Secondary Upgrade, Conveyance and	1,057,900,000	193,755,000	187,818,000	63,883,000	14,579,000	6,612,000	466,647,000	Construction	Upgrade
Decommissioning*	2,280,650,000	114,800,000	59,350,000	150,150,000	272,100,000	453,250,000	1,049,650,000	Multiple	Growth
Northwest Langley Wastewater Treatment Program*	750,000	250,000	350,000	300,000	400,000	250,000	1,550,000	Design	Resilience
WWTPs Electrical System Studies & Upgrades	\$ 6,301,550,000	\$ 478,680,000	\$ 478,198,000	\$ 670,075,000	\$ 904,229,000	\$ 1,185,512,000	\$ 3,716,694,000		
Total Treatment Plants									
TOTAL CAPITAL EXPENDITURES	\$ 7,367,850,000	\$ 681,745,000	\$ 688,406,000	\$ 934,460,000	\$ 1,117,389,000	\$ 1,308,127,000	\$ 4,730,127,000		
CAPITAL FUNDING									
New External Borrowing funded by Levy	\$ 4,274,047,000	\$ 381,831,000	\$ 302,254,000	\$ 434,956,000	\$ 482,035,000	\$ 1,142,843,000	\$ 2,743,919,000		
New Borrowing funded by DCC	1,363,084,000	117,732,000	169,058,000	218,593,000	369,711,000	-	875,094,000		
DCCs	167,584,000	28,716,000	45,279,000	17,017,000	14,583,000	1,993,000	107,588,000		
Contribution to Capital from LWS Levy	907,780,000	80,355,000	94,131,000	119,359,000	135,644,000	153,302,000	582,791,000		
Reserve	64,120,000	10,465,000	12,050,000	7,650,000	5,400,000	5,600,000	41,165,000		
External Funding - Interagency	591,235,000	62,646,000	65,634,000	136,885,000	110,016,000	4,389,000	379,570,000		
Total	\$ 7,367,850,000	\$ 681,745,000	\$ 688,406,000	\$ 934,460,000	\$ 1,117,389,000	\$ 1,308,127,000	\$ 4,730,127,000		
SUMMARY BY DRIVER									
Growth	\$ 4,005,250,000	\$ 227,725,000	\$ 158,550,000	\$ 273,987,000	\$ 511,425,000	\$ 649,650,000	\$ 1,821,337,000		
Maintenance	864,000,000	160,455,000	139,975,000	173,950,000	160,425,000	154,665,000	789,470,000		
Resilience	144,200,000	12,950,000	13,000,000	4,500,000	2,550,000	1,000,000	34,000,000		
Upgrade	2,251,800,000	267,265,000	347,393,000	421,273,000	350,739,000	379,862,000	1,766,532,000		
Opportunity	102,600,000	13,350,000	29,488,000	60,750,000	92,250,000	122,950,000	318,788,000		
Total	\$ 7,367,850,000	\$ 681,745,000	\$ 688,406,000	\$ 934,460,000	\$ 1,117,389,000	\$ 1,308,127,000	\$ 4,730,127,000		

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

LIQUID WASTE SERVICES

Policy, Planning and Analysis

Description of services

Liquid Waste Services provide wastewater collection and treatment services through the Liquid Waste function under the Greater Vancouver Sewerage & Drainage District (GVSD). The Policy, Planning and Analysis Division includes innovations, utility planning, policy and resiliency management to comply with provincial and federal legislation. The Division undertakes utility infrastructure analysis to service growth planning with municipalities, facilities modeling, scenario analysis, scope development for capital projects, and facility analysis and planning. Divisional mandate also includes source control strategies that protect receiving environments, ensure health and safety and protect infrastructure; maintain liquid waste regulatory bylaws; expand public awareness and education; and develops strategic actions for emerging contaminants. Included in the portfolio is innovation management involving technology evaluations, resource recovery assessments, innovative business modelling and enhancing value via Sustainability Innovation Fund projects.

Strategic directions and high level goals supported

Board Strategic Plan:

- Enhance the management of the liquid waste system with a commitment to innovative approaches to protect the health of the public and the environment.
- Ensure the long-term resilience of the regional sewage and drainage system to withstand natural hazards, climate change and other significant disruptions.
- Develop and implement financial plans and policies that reflect a commitment to sound financial management and long-term planning, in consideration of current and future ratepayers.
- Strengthen awareness and engagement with the public, members, other orders of government, and key stakeholders on a range of initiatives that will ensure that the regional liquid waste system protects public health and the environment, now and into the future.

Integrated Liquid Waste and Resource Management Plan:

- Goal 1 - Protect public health and the environment
- Goal 2 - Use liquid waste as a resource
- Goal 3 - Effective, affordable and collaborative management

Performance indicators

Indicator	Historical and/or industry benchmark	Current performance	2023 Performance objective
Annual number of wet-weather related sanitary sewer overflow (SSO) events from Metro Vancouver sewers	MV 3-year average: 48 2021: 76 2020: 40 2019: 29	76	0
Annual CSO Volume (ML)	MV 3-year average: 32,500 2021: 38,500 2020: 36,900 2019: 22,100	38,500	32,500
Percentage of Assets not Meeting Capacity or Regulation within 10 Years	MV 3-year average: 28% 2020: 34% 2019: 25% 2018: 25%	34%	33%

2023 Key actions

- Continue to progress on updating the Integrated Liquid Waste and Resource Management Plan in accordance with the provincially-approved review strategy.
- Initiate work on a comprehensive facilities plan for liquid waste.
- Provide ongoing operational and design analysis for sanitary and drainage systems.
- Continue to maintain and upgrade system analysis tools and processes.
- Complete a policy for Board approval addressing a wet weather pricing framework.
- Coordinate Sanitary Sewer Overflow Working Groups with Member Municipalities
- Develop a Compounds of Environmental Concern (CEC) management strategy that integrates a broad range of approaches including source control, treatment, and external liaison.
- Review and update sewer use bylaws, modernizing and achieving full cost recovery.
- Complete three SIF projects: High-Efficiency Aeration, Handheld Wastewater Microbial DNA Monitor, and Phase 1 of Biorock Innovative Offshore Building Material.
- Develop a drainage policy to clarify jurisdictional roles and coordinate with drainage area members on implementing storm water and flood management strategies.
- Commence AIWWTP Effluent Pump Station Study.
- Regulatory reviews including WWTP Operational Certificate amendments.

LIQUID WASTE SERVICES

Engineering, Design and Construction

Description of services

Liquid Waste Services provides wastewater collection and treatment services to the region through the Liquid Waste function under the authority of the Greater Vancouver Sewerage and Drainage District (GVS&DD). The Engineering, Design and Construction (EDC) Division is responsible for the delivery of the core major and minor capital projects, including trunk sewers, pump stations, SSO storage and wastewater treatment facilities identified in the GVS&DD long range plan and minor operating projects.

Strategic directions and high level goals supported

Board Strategic Plan

- Enhance the management of the liquid waste system with a commitment to innovative approaches to protect the health of the public and the environment.
- Ensure the long-term resilience of the regional sewage and drainage system to withstand natural hazards, climate change and other significant disruptions.
- Develop and implement financial plans and policies that reflect a commitment to sound financial management and long-term planning, in consideration of current and future ratepayers.
- Strengthen awareness and engagement with the public, members, other orders of government including First Nations, and key stakeholders on a range of initiatives that will ensure that the regional liquid waste system protects public health and the environment, now and into the future.

Integrated Liquid Waste and Resource Management Plan

- Goal 1 - Protect public health and the environment
- Goal 2 - Use liquid waste as a resource
- Goal 3 - Effective, affordable and collaborative management

Performance indicators ¹

Indicator	Historical and/or industry Benchmark	Current performance	2023 Performance objective
Percent of Capital Program Expenditures Achieved (Projects >\$90M) (4 PROJECTS – \$53M)	3-year average: 61% 2021: 39% 2020: 62% 2019: 82%	31%	95%
Percent of Capital Program Expenditures Achieved (Projects \$20M - \$90M) (37 PROJECTS – \$119M)	3-year average: 61% 2021: 47% 2020: 73% 2019: 64%	42%	90%
Percent of Capital Program Expenditures Achieved (Projects \$5M - \$20M) (39 Projects – \$59M)	3-year average: 45% 2021: 59% 2020: 36% 2019: 41%	15%	75%

Indicator	Historical and/or industry Benchmark	Current performance	2023 Performance objective
Percent of Capital Program Expenditures Achieved Projects < \$5M (56 Projects – \$28M)	3-year average: 37% 2021: 34% 2020: 36% 2019: 41%	26%	75%
Percent of Minor Capital Program Expenditures	3-year average: 67% 2021: 70% 2020: 72% 2019: 58%	57%	90%

The Performance Indicators include projects being completed by other LWS divisions, such as utility relocates and Industrial Control System upgrades, but excluded projects being completed by the Project Delivery department

2023 Key actions

- In conjunction with the PMO (Project Delivery Department), continue to support project management process improvements including the implementation of a Portfolio Management Information System (PMIS).
- Complete the review and revisions of the Minor Capital Program, including project prioritization processes and improved program level controls.
- Substantially complete:
 - Rehabilitation of the last of the four AIWWTP Trickling Filters (Delta)
 - Rehabilitation of the New Westminster Interceptor – Columbia St. (New Westminster)
 - Crescent Beach Forcemain Replacement (Surrey)
 - LIWWTP Pilot Digestion Optimization Facility (Richmond)
- Initiate construction:
 - Next section of the South Surrey Interceptor Twinning (Surrey)
 - Glen Eagles Pump Stations 4 and 5 Rehabilitation (West Vancouver)
 - Glen Eagles Force mains Replacement (West Vancouver)
 - Royal Pump Station Rehabilitation (New Westminster)
 - Corrosion Control Facility at the Cloverdale PS (Surrey)
 - Hydrothermal Liquefaction System at AIWWTP (Delta)
 - Scour Protection of the North Shore Sewer Crossings, the North Surrey Interceptor Fraser River Crossing, the Maple Ridge Forcemain Fraser River Crossing (West Vancouver, North Vancouver, Maple Ridge, Surrey and Delta)
 - Gilbert Trunk Sewer Central and South Sections (Richmond)
 - North Road Trunk Sewer – Phase 2 (Burnaby)
 - LIWWTP Backup Power
- Initiate and complete construction:
 - Westridge Forcemain (Burnaby),
 - Glenbrook Sanitary Trunk Sewer (Burnaby),
 - Jervis and Chilco PS Temporary Emergency Backup Power (Vancouver),
 - Front Street Pressure Sewer Rehabilitation (New Westminster)
 - Ferguson Road Paving Refurbishment (Richmond)

LIQUID WASTE SERVICES

Operations and Maintenance - Wastewater Collections and Drainage

Description of Services

Liquid Waste Services provides wastewater collection and treatment services to the region through the Liquid Waste function under the authority of the Greater Vancouver Sewerage and Drainage District (GVS&DD). The Wastewater Collection and Drainage Division is responsible for managing the operations and maintenance of the sewer collection network and providing maintenance services to Greater Vancouver Water District (GVWD) as a shared service provider. This includes day-to-day management of the infrastructure assets and supporting infrastructure. This business area is also responsible for managing the operations and maintenance of Urban Drainage areas including the Still Creek/Brunette, Port Moody/Coquitlam and UBC Drainage areas.

Alignment of Strategic Directions and High Level Goals

Board Strategic Plan

- Enhance the management of the liquid waste system with a commitment to innovative approaches to protect the health of the public and the environment.
- Ensure the long-term resilience of the regional sewage and drainage system to withstand natural hazards, climate change and other significant disruptions.
- Develop and implement financial plans and policies that reflect a commitment to sound financial management and long-term planning, in consideration of current and future ratepayers.
- Strengthen awareness and engagement with the public, members, other orders of government, and key stakeholders on a range of initiatives that will ensure that the regional liquid waste system protects public health and the environment, now and into the future.

Integrated Liquid Waste and Resource Management Plan

- Goal 1 - Protect public health and the environment
- Goal 2 - Use liquid waste as a resource
- Goal 3 - Effective, affordable and collaborative management

Performance Indicators

Indicator	Historical and/or Industry Benchmark	Current Performance	2023 Performance Objective
Number of reported events of sanitary sewer overflows (SSOs): non-weather related	MV 3-year average: 17.3 2021: 6 2020: 35 2019: 11	24	0
Number of odour complaints received	MV 3-year average: 14 2021: 7 2020: 21 2019: 14	10	10

2023 Key actions

- Implement Phase 2 mobile technology laptops in field for senior field operations staff;
- Develop a construction team capable of mid-sized civil capital construction work;
- Create service levels for work plan programs (Collections Operations, Drainage)
- Develop and perform initial implementation of a comprehensive Maintenance Reliability Program to increase asset resilience;
- Complete Electrical Safety program development (including work practices, systems) and begin initial implementation.
- Continue review of lockout and isolation procedures for operation and maintenance work tasks.
- Expand self-service access to GVS&DD sanitary sewer flow and rainfall datasets for member jurisdictions;
- Performance testing of 15% LWS pump stations
- Progress asset condition work by inspecting and condition rating:
 - 5% of sewer system inventory
 - 5% of the manhole inventory

LIQUID WASTE SERVICES

Operations & Maintenance - Wastewater Treatment & Residuals Management

Description of Services

Liquid Waste Services provides wastewater collection and treatment services to the region through the Liquid Waste function under the authority of the Greater Vancouver Sewerage and Drainage District (GVS&DD). The Wastewater Treatment & Residuals Management division is responsible for managing the operations and maintenance of the five regional wastewater treatment plants (WWTPs). This includes long-range facility planning and day-to-day management of the infrastructure assets and supporting infrastructure with the objective of complying with provincial and federal regulations and recovering as much resources from the wastewater as economically feasible. This business area is also responsible for the beneficial use of biosolids and other residuals produced through the treatment process.

Strategic Directions and High Level Goals Supported

Board Strategic Plan

- Enhance the management of the liquid waste system with a commitment to innovative approaches to protect the health of the public and the environment.
- Ensure the long-term resilience of the regional sewage and drainage system to withstand natural hazards, climate change and other significant disruptions.
- Develop and implement financial plans and policies that reflect a commitment to sound financial management and long-term planning, in consideration of current and future ratepayers.
- Strengthen awareness and engagement with the public, members, other orders of government, and key stakeholders on a range of initiatives that will ensure that the regional liquid waste system protects public health and the environment, now and into the future.

Integrated Liquid Waste and Resource Management Plan

- Goal 1 - Protect public health and the environment
- Goal 2 - Use liquid waste as a resource
- Goal 3 - Effective, affordable and collaborative management

Performance Indicators

Indicator	Historical and/or industry benchmark	Current performance	2023 Performance objective
Volume treated per year (ML)	MV 3-year average: 448,438 2021: 451,732 2020: 459,118 2019: 434,465	436,400	464,000
Percent of digester gas used at the Wastewater Treatment Plants	MV 3-year average: 55.2% 2021: 53.7% 2020: 55.5% 2019: 56.3%	54%	56%

Indicator	Historical and/or industry benchmark	Current performance	2023 Performance objective
Compliance with treatment plant Operational Certificates (%)	MV 3-year average: 99.91% 2021: 99.99% 2020: 99.83% 2019: 99.91%	99.99%	100%
Percent of biosolids beneficially used	MV 3-year average: 98.5% 2021: 100% 2020: 99.5% 2019: 96.1%	100%	98%
Percentage of Biosolids beneficially used in Metro Vancouver Region	MV 3-year average: 16.3% 2021: 17.9% 2020: 17.6% 2019: 13.5%	15%	12%

2023 Key actions

- Complete removal of land-dried biosolids stockpile at Iona Island WWTP.
- Complete a Maintenance Services Review of Plant Maintenance.
- Create transition plan to move WWTP Operations to work order management system.
- Review and update critical operations, maintenance and safety documents related to plant process, operating and maintenance procedures for the wastewater treatment plants.
- Support SWS for the procurement of a biosolids feed system for the Waste-to-Energy Facility.
- Conduct a beneficial use trial for WWTP grit – use in bioremediation of hydrocarbon contaminated soil. Explore other options for beneficial use of WWTP grit.
- Complete Annacis and Lulu Gas Holder replacements
- Complete Iona influent and effluent pump major maintenance
- Commission and test new Annacis Island WWTP Outfall and upgraded solids contact tanks
- Complete Annacis Island WWTP Trickling Filter 4 media replacement.
- Complete Iona Island WWTP Trucked Liquid Waste clarifier overhaul.
- Test and commission the primary effluent reuse water reclamation system at Iona Island WWTP.
- Optimize new Iona Island WWTP biosolids dewatering system.
- Install and commission new Iona WWTP Thickener polymer system.
- Support PDE in procurement of regional biosolids drying facility – engineering selection and preliminary design.
- Develop new centrate storage tank system at Lulu Island WWTP.
- Commission and Test Lulu Island WWTP Pilot Digester.
- Initiate WWTP digital twinning Project.

LIQUID WASTE SERVICES

Environmental Management & Quality Control

Description of services

This business area is responsible for management of environmental programs and initiatives for GVS&DD, analytical services for liquid waste, water and solid waste regulatory, quality control, source control and process control purposes, and federal and provincial regulatory reporting of environmental and wastewater quality and treatment. The work includes environmental investigations, laboratory analyses, modeling, forecasting, simulations, monitoring, risk assessments, support for management of stormwater and urban drainage, development of an Environmental Management System for Liquid Waste Services, implementation of selected source control programs, and liaison with senior governments, academia and environmental stakeholders.

Strategic directions and high level goals supported

Board Strategic Plan:

- Enhance the management of the liquid waste system with a commitment to innovative approaches to protect the health of the public and the environment.
- Ensure the long-term resilience of the regional sewage and drainage system to withstand natural hazards, climate change and other significant disruptions.
- Develop and implement financial plans and policies that reflect a commitment to sound financial management and long-term planning, in consideration of current and future ratepayers.
- Strengthen awareness and engagement with the public, members, other orders of government, and key stakeholders on a range of initiatives that will ensure that the regional liquid waste system protects public health and the environment, now and into the future.

Integrated Liquid Waste and Resource Management Plan:

- Goal 1 - Protect public health and the environment
- Goal 2 - Use liquid waste as a resource
- Goal 3 - Effective, affordable and collaborative management

Performance indicators

Indicator	Historical and/or industry benchmark	Current performance	2023 Performance objective
Number of days between May 1 st and September 30 th swimming advisories posted by the Health Authorities (combined totals for all beaches in region)	MV 3-year average: 45 2020: 42 2019: 39 2018: 53	26	28
Fraser River water quality index ¹	MV 3-year average: 84 2020: 77 2019: 88 2018: 88	74	74

Indicator	Historical and/or industry benchmark	Current performance	2023 Performance objective
Burrard Inlet water quality index	MV 3-year average: 86 2019: 82 2018: 87 2017: 90	76	76
Sturgeon Bank water quality index	MV 3-year average: 93 2019: 96 2018: 92 2017: 92	90	90

¹ Water Quality Index (WQI) ranking of water quality: Excellent (WQI value 95-100), Good (80-94), Fair (65-79), Marginal (45-64), Poor (0-44)

2023 Key actions

- Produce the 2022 GVS&DD Environmental Management & Quality Control Annual Report.
- Complete and submit 2022 National Pollution Release Inventory (NPRI) and Greenhouse Gas (GHG) Reports to Environment Canada and the BC Ministry of Environment, respectively.
- Conduct field work for the Fraser River water quality and fish health monitoring program.
- Initiate Fish Pilot Study in Burrard Inlet and sediment coring in the Strait of Georgia, in accordance with recommendations from the Water Body Environmental Program Reviews.
- Update the SSO Rapid Risk Ranking Tool for all SSOs for the 5-year interval of 2018-2022.
- Continue the collaborative work on advancing the use of wastewater based epidemiology for the protection of public health.
- Continue collaboration with DFO and SFU on development of genomics solutions for understanding impacts of wastewater treatment plant (WWTP) discharges on Fraser River salmon.
- Explore opportunities to use artificial intelligence to interpret recreational beach water quality monitoring results.
- Continuing scenario modelling and now-casting to support regulatory reporting of sewer overflows and wastewater treatment plant (WWTP) process upsets
- Perform Canadian Association for Laboratory Accreditation (CALA) bi-annual site assessment to maintain the accreditation of the Chemistry and Wastewater Treatment Process Control Laboratories.
- Perform quarterly analyses of pharmaceuticals and personal care products (PPCPs) in wastewater, and semi-annual analyses of Perfluoroalkyl and Polyfluoroalkyl (PFAS) substances in drinking water.
- Perform the analyses of drinking water sources for determination of microcystins using Liquid Chromatography Mass Spectrometry (LCMSMS) and cross-check the results with those obtained by enzyme-linked immunosorbent assay (ELISA) analysis.

LIQUID WASTE SERVICES

Support Services and Strategic Initiatives

Description of services

Liquid Waste Services provides wastewater collection and treatment services to the region through the Liquid Waste function under the authority of the Greater Vancouver Sewerage and Drainage District (GVS&DD). The Support Services and Strategic Initiatives division is responsible for the following Liquid Waste Services functions: business and financial planning and management; capital budget planning; asset management; performance management; energy management and the Annacis Research Centre.

Strategic directions and high level goals supported

Board Strategic Plan

- Enhance the management of the liquid waste system with a commitment to innovative approaches to protect the health of the public and the environment.
- Ensure the long-term resilience of the regional sewage and drainage system to withstand natural hazards, climate change and other significant disruptions.
- Develop and implement financial plans and policies that reflect a commitment to sound financial management and long-term planning, in consideration of current and future ratepayers.
- Strengthen awareness and engagement with the public, members, other orders of government, and key stakeholders on a range of initiatives that will ensure that the regional liquid waste system protects public health and the environment, now and into the future.

Integrated Liquid Waste and Resource Management Plan

- Goal 1 - Protect public health and the environment
- Goal 2 - Use liquid waste as a resource
- Goal 3 - Effective, affordable and collaborative management

Performance indicators

Indicator	Historical and/or industry benchmark	Current performance	2023 Performance objective
Operating cost per million litres collected and treated (\$/ML)	MV 3-year average: \$395 2021: \$408 2020: \$395 2019: \$381	\$476	\$486
Net energy use in the collection and treatment of liquid waste (GJ/ML)	MV 3-year average: 1.10 2021: 1.07 2020: 1.05 2019: 1.18	1.10	1.13
Total Greenhouse gas emissions from energy and direct emissions (Kg CO ₂ e/ML)	MV 3-year average: 18.1 2021: 18.7 2020: 16.2 2019: 19.4	18.1	16.0

Indicator	Historical and/or industry benchmark	Current performance	2023 Performance objective
Energy Savings Realized (kWh/y)	MV 3-year average: 1,316,400 2021: 3,300,125 2020: 137,861 2019: 511,343	25,000	600,000

2023 Key actions

- Establish 5-year energy targets at the facility level (WWTPs, Pump Stations) for all LWS facilities and Commence regular facility level energy reporting to monitor progress toward meeting targets.
- Promote and pursue additional partnerships with municipalities, utilities and the property development community to implement opportunities for resource recovery from liquid waste with emphasis on projects that achieve regional greenhouse gas emissions reductions.
- Develop training resources on document management processes for new and existing staff.
- Improve the management of departmental performance monitoring data using enterprise tools such as Metrolytics.
- Introduction of a Reclaimed Water Policy.
- Further discussion with member advisory committees of the expansion of Tier III cost apportionment into operating budget activities.

2023 to 2027 – WHAT'S HAPPENING

Below is a summary of the significant initiatives to be undertaken by Liquid Waste Services over the next 5 years.

Initiative	Description	Theme
2023		
Iona Island WWTP Biosolids Stockpile Removal	Completion of the removal of the land dried biosolids stockpile and grit stockpile.	Regulatory and Legislative Environment
Wet Weather Management	First year of implementation of a regionally revenue-neutral sewer levy split into dry and wet weather components, providing incentives to mitigate I&I and separate combined sewers.	Environmental Sustainability / Financial Sustainability
Reclaimed Water Policy	Create a policy, pricing structure and other tools needed to enable the distribution of reclaimed water for suitable uses within the region.	Environmental Sustainability
Iona Island WWTP	Commence preliminary design of WWTP and commence enabling projects, site preparation and remediation projects	Regulatory and Legislative Environment
Northwest Langley WWTP	Completion of construction of the Golden Ears Pump Station, the forcemain river crossing and the Sanitary Sewage Overflow Storage Facility.	Regional Growth / Environmental Sustainability
North Shore WWTP	Commence construction completion	Regulatory and Legislative Environment
Annacis Island WWTP Trickling Filters	Completion of replacement of media, distributor arms and foul air ducting.	System Stewardship
Vancouver Sewerage Area (VSA) Pump Station Backup Power	Generators installed at Jervis and Chilco Pump Stations. VSA Pump Station Backup Power Program complete.	System Stewardship
2024		
Iona Island WWTP	Commence construction of WWTP ground improvement works and secondary treatment technology piloting	Regulatory and Legislative Environment
Annacis Island WWTP Outfall	Completion of construction of the outfall system	Regional Growth
Annacis Island WWTP	Completion of construction of Primary Sludge Gravity Thickeners #4 and #5	Regional Growth
Burnaby Lake North Interceptor	Completion of construction of the tunneled section of the Burnaby Lake North Interceptor	Regional Growth
Integrated Liquid Waste and Resource Management Plan	Submission of the updated Integrated Liquid Waste and Resource Management Plan to the Province.	Regulatory and Legislative Environment

Initiative	Description	Theme
2025		
Gilbert Trunk Sewer	Completion of the twinning of the Gilbert Trunk Sewer to improve system reliability and resiliency.	System Stewardship
North Surrey Interceptor Odour Control	Completion of construction of odor control system.	System Stewardship
Annacis Island WWTP Hydrothermal Processing (HTP) Demonstration Facility	Commencement of operation of the HTP facility and initial production of biocrude oil at demonstration scale.	Environmental Sustainability
Gilbert Trunk Sewer	Completion of construction of Gilbert Trunk Sewer #2	System Stewardship
Northwest Langley WWTP	Commence wastewater treatment plant construction	Regional Growth
Iona Island WWTP	Select secondary treatment technology	Regulatory and Legislative Environment
2026		
Liquid Waste Services Comprehensive Long-Range Plan	Complete Comprehensive Regional Liquid Waste System Plan, identifying a strategy for long-term infrastructure needs that aligns with the approved Liquid Waste Management Plan.	Environmental Sustainability
Port Coquitlam Pump Station	Completion of replacement of the pump station to meet current safety and seismic regulations.	System Stewardship
Cloverdale Pump Station	Completion of construction project to expand the capacity of the pump station.	Regional Growth
South Surrey Interceptor	Completion of Construction of the South Surrey Interceptor – Johnson Road Section, the last part of the system to be twinned.	Regional Growth
Northwest Langley WWTP	Commence outfall construction	Regional Growth
Iona Island WWTP	Completion of preliminary design of WWTP, completion of ground improvements and Phase 1 ecological projects.	Regulatory and Legislative Environment
2027		
Iona Island WWTP Lagoon Decommissioning	Completion of the removal of all biosolids sludge lagoons in preparation for the construction of the secondary treatment plant.	Regulatory and Legislative Environment
Iona Island WWTP	Commence detailed design of WWTP	Regulatory and Legislative Environment

ATTACHMENT 5

METRO VANCOUVER DISTRICTS 2023-2027 PROJECTED RESERVES - LIQUID WASTE

OPERATING RESERVES

	2022 ENDING BALANCE	2023 OPENING BALANCE	CONTRIBUTION	WITHDRAWALS	INTEREST	2023 ENDING BALANCE	2024 ENDING BALANCE	2025 ENDING BALANCE	2026 ENDING BALANCE	2027 ENDING BALANCE
Liquid Waste Services	\$ 30,249,903	\$ 30,249,903	\$ -	\$ -	\$ 604,998	\$ 30,854,901	\$ 31,472,000	\$ 32,101,440	\$ 32,743,468	\$ 33,398,338

DISCRETIONARY RESERVES

	2022 ENDING BALANCE	2023 OPENING BALANCE	CONTRIBUTION	WITHDRAWALS	INTEREST	2023 ENDING BALANCE	2024 ENDING BALANCE	2025 ENDING BALANCE	2026 ENDING BALANCE	2027 ENDING BALANCE
Liquid Waste Services										
Biosolids Inventory Reserve	\$ 13,114,037	\$ 13,114,037	-	(11,373,251)	\$ 148,548	\$ 1,889,334	\$ 103,053	\$ -	\$ -	\$ -
Liquid Waste General Debt Reserve Fund	2,165,817	2,165,817	-	-	43,316	2,209,133	2,253,316	2,298,382	2,344,350	2,391,237
Lions Gate Contingency	1,519,975	1,519,975	-	-	30,399	1,550,374	1,581,382	1,613,009	1,645,269	1,678,175
Drainage General Reserve	4,458,451	4,458,451	-	(245,000)	86,719	4,300,170	4,239,723	3,430,667	2,958,931	2,275,759
Total	\$ 21,258,278	\$ 21,258,278	\$ -	\$ (11,618,251)	\$ 308,983	\$ 9,949,011	\$ 8,177,474	\$ 7,342,059	\$ 6,948,550	\$ 6,345,171

STATUTORY RESERVES

	2022 ENDING BALANCE	2023 OPENING BALANCE	CONTRIBUTION	WITHDRAWALS	INTEREST	2023 ENDING BALANCE	2024 ENDING BALANCE	2025 ENDING BALANCE	2026 ENDING BALANCE	2027 ENDING BALANCE
Liquid Waste Services										
Liquid Waste Laboratory Equipment Reserve	\$ 722,403	\$ 722,403	\$ 106,282	\$ -	\$ 15,511	\$ 844,195	\$ 667,562	\$ 791,847	\$ 770,376	\$ 903,211
Liquid Waste Sustainability Innovation Fund Reserve	16,799,001	16,799,001	1,127,000	(6,222,152)	285,029	11,988,878	5,800,005	5,170,779	6,412,464	7,678,984
Total	\$ 17,521,404	\$ 17,521,404	\$ 1,233,282	\$ (6,222,152)	\$ 300,539	\$ 12,833,073	\$ 6,467,567	\$ 5,962,626	\$ 7,182,841	\$ 8,582,194

To: Liquid Waste Committee

From: Dana Zheng, Program Manager, Policy, Planning and Analysis, Liquid Waste Services

Date: September 28, 2022 Meeting Date: October 5, 2022

Subject: **Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Amending Bylaw No. 360, 2022**

RECOMMENDATION

That the GVS&DD Board:

- a) give first, second and third reading to *Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Amending Bylaw No. 360, 2022*; and
 - b) pass and finally adopt *Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Amending Bylaw No. 360, 2022*.
-

EXECUTIVE SUMMARY

The *Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Amending Bylaw No. 360, 2022* (the “TLW Amending Bylaw”) is presented for Board consideration and adoption. The proposed amendments streamline processes for evaluating requests to discharge out-of-region trucked liquid waste by delegating authority to Metro Vancouver staff on behalf of the GVS&DD Board. New fees for out-of-region TLW are also proposed to recover additional costs incurred and to diminish financial incentives for out-of-region TLW to be brought to Metro Vancouver facilities.

PURPOSE

To seek GVS&DD Board consideration and adoption of the *Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Amending Bylaw No. 360, 2022*.

BACKGROUND

Metro Vancouver receives domestic and non-domestic trucked liquid waste (TLW) at the Iona, Annacis, and Northwest Langley Wastewater Treatment Plants (WWTPs). Domestic TLW includes waste from septic tanks, portable toilets and holding tanks. Non-domestic TLW includes higher strength liquid waste such as grease trap waste and sludge from small package sewage plants. Approximately 105,000 m³ per year of domestic TLW and approximately 5,000 m³ per year of non-domestic TLW are discharged at Metro Vancouver’s TLW facilities.

In recent years, Metro Vancouver TLW facilities have seen an increase in out-of-region TLW, which creates stress on WWTP infrastructure and limits staff’s ability to respond to demand fluctuations. The processing of TLW is becoming more challenging as wastewater treatment capacity is limited with aging infrastructure in a growing region. The *Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Bylaw No. 352, 2021* (TLW Bylaw; see Reference) restricts discharges of TLW from outside the region to prioritize TLW generated in-region. The TLW Bylaw enables the Board to authorize the discharge of out-of-region TLW on a case-by-case, time-limited basis through the issuance of out-of-region discharge numbers.

PROPOSED TLW BYLAW CHANGES

Since the out-of-region TLW restrictions came into effect on June 1, 2022, requests from out-of-region TLW generators have been more frequent than expected and the processing of these requests has required a significant level of effort not currently recovered through TLW discharge fees. The nature of the requests received illustrates that Metro Vancouver facilities may be a receiver of last resort for some out-of-region generators while others may be avoiding higher fees in their own jurisdictions. There have also been some requests for the discharge of insignificant loads that have little to no impact on Metro Vancouver's in-region capacity.

With further insights provided by requests to date, amendments to the TLW Bylaw are proposed to create a more efficient process for decision-making. Evaluation criteria are defined to allow staff to administer the issuance of out-of-region discharge numbers instead of the current Board authorization process. Out-of-region fees set as a percent premium to market in-region fees are also proposed to recover additional costs and be comparable to neighbouring jurisdictions to diminish financial incentives for requestors that choose Metro Vancouver facilities over other viable disposal options.

The proposed changes within the TLW Amending Bylaw are the:

1. Authorization of out-of-region TLW discharge requests by Metro Vancouver staff replacing the current Board authorization process. The authorization decision is proposed to be based on the following evaluation criteria:
 - a) That the requested discharge not cause any significant detrimental effect on the operation of the District's sewage facilities as determined by staff;
 - b) That the duration of discharge is limited and does not exceed five years; and
 - c) That the requestor demonstrates that there are no viable disposal options available within the region that the waste originates from.
2. Creation of new out-of-region TLW fees of \$57.00/m³ for domestic TLW and \$99.00/m³ for non-domestic TLW.

Out-of-region discharge authorizations previously issued will be valid for their remaining stipulated time period and the associated discharges will not be subject to the proposed out-of-region TLW fees.

ALTERNATIVES

1. That the GVS&DD Board:
 - a) give first, second and third reading to *Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Amending Bylaw No. 360, 2022*; and
 - b) pass and finally adopt *Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Amending Bylaw No. 360, 2022*.
2. That the GVS&DD Board receive for information the report dated September 28, 2022, titled "*Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Amending Bylaw No. 360, 2022*" and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

The proposed out-of-region TLW fees will improve cost recovery of processing out-of-region waste. Additional revenue in 2023 is estimated to be \$10,000 to \$30,000.

CONCLUSION

The proposed TLW Amending Bylaw creates a more efficient way to process out-of-region TLW discharge requests by delegating administrative decision-making to staff. New out-of-region TLW fees are also proposed to recover additional costs and diminish financial incentives for out-of-region waste to be brought to Metro Vancouver facilities.

Attachment

Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Amending Bylaw No. 360, 2022 (55059193)

Reference

[Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Bylaw No. 345, 2021](#)

55017058

**GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT
BYLAW NO. 360, 2022
A Bylaw to amend Greater Vancouver Sewerage and Drainage District
Trucked Liquid Waste Bylaw No. 345, 2021**

WHEREAS:

- A. the Greater Vancouver Sewerage and Drainage District (the “GVS&DD”) Board (the “Board”) has adopted “Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Bylaw No. 345, 2021” to regulate the direct and indirect discharge of trucked liquid waste into any sewers and drains connected to a sewage facility operated by the District; and
- B. the Board wishes to amend “Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Bylaw No. 345, 2021”.

NOW THEREFORE the Board of the Greater Vancouver Sewerage and Drainage District enacts as follows:

Citation

- 1. The official citation of this bylaw is “Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Amending Bylaw No. 360, 2022”. This bylaw may be cited as “Trucked Liquid Waste Amending Bylaw No. 360, 2022”.

Amendment of Bylaw

- 2. “Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Bylaw No. 345, 2021”, is hereby amended as follows:

- (a) In Section 3, the definition of “out-of-region discharge number” is replaced with the following:

“out-of-region discharge number” means the number that, effective June 1, 2022, an *out-of-region generator* must first obtain prior to a discharge of *trucked liquid waste* to a *sewage facility*, as provided in sections 12, 13, 13.1, and 13.2;

- (b) Section 13 is replaced with the following:

- 13. No *out-of-region generator* may receive an *out-of-region discharge number* from the *District* unless:

- (a) *District* staff have determined a period of time the *trucked liquid waste* is unlikely to have any significant detrimental effect on the operation of the *District’s sewage facilities*;
- (b) the *out-of-region discharge number’s* period of validity does not exceed the period of time determined under section 13 (a), and in no case exceeds a maximum period of 5 years; and

Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Amending Bylaw

No. 360, 2022

- (c) the region from which the waste originates does not provide a viable option for disposal for the waste, as determined by *District* staff upon reasonable inquiry.

(c) Section 13.1 is added as follows:

13.1 A valid *out-of-region discharge number* may be suspended or revoked in the event that *District* staff determine that:

- (a) the *trucked liquid waste* has a significant detrimental effect on the operation of the *District's sewage facilities*; or
- (b) the region from which the waste originates has a viable option for disposal for the waste, as determined by *District* staff upon reasonable inquiry.

(d) Section 13.2 is added as follows:

13.2 *Out-of-region discharge numbers* issued prior to October 28, 2022 will remain valid for the period stipulated by the *Board*.

(e) Section 22 is replaced with the following:

22. Effective June 1, 2022 a *Sewage Control Manager* may not issue a *trucked liquid waste authorization* in respect of a discharge of *non-domestic trucked liquid waste* originating from an *out-of-region generator* unless the *out-of-region generator* has first obtained an *out-of-region discharge number* in accordance with sections 12, 13, 13.1, and 13.2.

(f) by replacing Schedule "A" of Bylaw No. 345, 2021, as amended, with the attached Schedule "A", forming part of this bylaw.

Read a first, second and third time this _____ day of _____, _____.

Passed and finally adopted this _____ day of _____, _____.

Sav Dhaliwal, Chair

Chris Plagnol, Corporate Officer

Schedule A

TRUCKED LIQUID WASTE DISCHARGE FEES

In this Schedule A:

"British Columbia annual Consumer Price Index (CPI) inflation rate" means the British Columbia annual Consumer Price Index (CPI) inflation rate for the immediately preceding calendar year, published by the British Columbia Ministry of Finance in its annual "British Columbia Financial and Economic Review", and expressed as a percentage.

1. The *discharge fee* applicable to a discharge of *domestic trucked liquid waste* generated within the geographic area of the Metro Vancouver Regional District is as set out in Table 1, except that for the year 2026 and for each year following respectively, the *discharge fee* applicable to a discharge of *domestic trucked liquid waste* is the *discharge fee* that was applicable to a discharge of *domestic trucked liquid waste* in the immediately preceding calendar year, increased by the percentage that is the *British Columbia annual Consumer Price Index (CPI) inflation rate* and rounded to the nearest \$0.01/m³.

Table 1: Domestic Trucked Liquid Waste Discharge Fees 2021-2025

Year	2021	2022	2023	2024	2025
Rate (\$/m ³)	\$8.59	\$17.48	\$26.38	\$35.27	\$44.17

2. The *discharge fee* applicable to a discharge of *non-domestic trucked liquid waste* generated within the geographic area of the Metro Vancouver Regional District is as set out in Table 2, except that for the year 2026 and for each year following respectively, the *discharge fee* applicable to a discharge of *non-domestic trucked liquid waste* is the *discharge fee* that was applicable to a discharge of *non-domestic trucked liquid waste* in the immediately preceding calendar year, increased by the percentage that is the *British Columbia annual Consumer Price Index (CPI) inflation rate* and rounded to the nearest \$0.01/m³.

Table 2: Non-Domestic Trucked Liquid Waste Discharge Fees 2021-2025

Year	2021	2022	2023	2024	2025
Rate (\$/m ³)	\$61.30	\$65.80	\$70.30	\$74.80	\$79.30

3. The *discharge fee* applicable to a discharge of *trucked liquid waste* generated outside the geographic area of the Metro Vancouver Regional District with a valid *out-of-region discharge number* issued prior to October 28, 2022, for:
 - (a) *domestic trucked liquid waste* is equal to the fee calculated under section 1 of Schedule A; and
 - (b) *non-domestic trucked liquid waste* is equal to the fee calculated under section 2 of Schedule A.
4. The *discharge fee* applicable to a discharge of *trucked liquid waste* generated outside the geographic area of the Metro Vancouver Regional District with a valid *out-of-region discharge number* issued on or after October 28, 2022 is as set out in Table 3, except that for the year 2023 and for each year following respectively, the *discharge fee* applicable to a discharge of *trucked liquid waste* generated outside the geographic area of the Metro Vancouver Regional District with a valid *out-of-region discharge number* issued on or after October 28, 2022 is the *discharge fee* that would have been applicable to the discharge in the immediately preceding calendar year, increased by the percentage that is the British Columbia annual Consumer Price Index (CPI) inflation rate and rounded to the nearest \$0.01/m³.

Table 3: Out-of-Region Trucked Liquid Waste Discharge Fees

	2022
Domestic Trucked Liquid Waste Discharge Fee Rate (\$/m ³)	\$57.00
Non-Domestic Trucked Liquid Waste Discharge Fee Rate (\$/m ³)	\$99.00

To: Liquid Waste Committee

From: Mark Wellman, Senior Engineer, Policy, Planning and Analysis, Liquid Waste Services

Date: September 23, 2022 Meeting Date: October 5, 2022

Subject: ***Greater Vancouver Sewerage and Drainage District Sewerage and Drainage Areas Boundaries Amending Bylaw No. 359, 2022 – Fraser Sewerage Area – City of Delta***

RECOMMENDATION

That the GVS&DD Board:

- a) give first, second and third reading to the *Greater Vancouver Sewerage and Drainage District Sewerage and Drainage Areas Boundaries Amending Bylaw No. 359, 2022*; and,
 - b) pass, and finally adopt the *Greater Vancouver Sewerage and Drainage District Sewerage and Drainage Areas Boundaries Amending Bylaw No. 359, 2022*.
-

EXECUTIVE SUMMARY

Metro Vancouver received an application from the City of Delta requesting the Fraser Sewerage Area (FSA) be amended to include the footprint of a proposed new clubhouse at the Sunshine Woods Golf Centre located at 10556 64 Avenue, Delta. The golf centre's existing clubhouse is already within the FSA, but the larger footprint of the new clubhouse requires an FSA amendment. At its September 23, 2022 meeting, the Metro Vancouver Regional District (MVRD) Board resolved the extension of GVS&DD sewerage services to the new clubhouse at 10556 64 Avenue, Delta is consistent with the provisions of *Metro 2040*. A Liquid Waste Services technical review indicated no material financial impact on the FSA and negligible additional impact to the regional sewerage system.

Staff recommend that the GVS&DD Board approve the City of Delta's request for an amendment of the FSA boundary to include the proposed new building footprint.

PURPOSE

To seek GVS&DD Board approval to amend the *Greater Vancouver Sewerage and Drainage District Sewerage and Drainage Areas Boundaries Bylaw No. 310, 2018* to include the footprint of a proposed new clubhouse at the Sunshine Woods Golf Centre located at 10556 64 Avenue, Delta within the FSA.

BACKGROUND

Sewerage area boundaries are fixed by the *Greater Vancouver Sewerage and Drainage District Sewerage and Drainage Areas Boundaries Bylaw, No. 310, 2018*. Sewerage area boundaries are occasionally amended through an amending bylaw, in accordance with Sections 31 and 32 of the *GVS&DD Act*, typically at the request of a GVS&DD member. On June 17, 2022, the City of Delta submitted an application to the GVS&DD requesting an extension of sewer service to a proposed new clubhouse at the Sunshine Woods Golf Centre located 10566 64 Avenue, Delta. The golf centre has an existing clubhouse which is already within the FSA. Since the new clubhouse will be larger, the GVS&DD Board's approval is required to amend the FSA to match the footprint of the new clubhouse.

METRO 2040 CONSIDERATION

Following adoption of *Metro 2040* in 2011, Metro Vancouver procedures regarding the amendment of regional sewer services are subject to the provisions of *Metro 2040*. Accordingly, requests from member jurisdictions to amend a GVS&DD sewerage area must be checked against the provisions of *Metro 2040* and presented to the MVRD Board for consideration. If the MVRD Board resolves the application is consistent with *Metro 2040*, the decision to amend the sewerage area rests with the GVS&DD Board, subject to technical and financial considerations.

The Sunshine Woods Golf Centre located at 10556 64 Avenue, Delta has an agricultural regional land use designation in *Metro 2040*, and is outside of the Urban Containment Boundary. The property owner proposes to demolish the existing clubhouse, already within the FSA, and replace it with a new clubhouse at the same location and with a larger building footprint.

The following summarizes the MVRD Board considerations for this proposed boundary amendment:

- The nature of the proposed building is consistent with the existing land use context;
- The proposed building is consistent with and in an area with long-established use as a golf course and clubhouse;
- The proposed building is not expected to have a significant impact on surrounding agricultural land as there will be no change in land use;
- The clubhouse use is a permitted use by the Agricultural Land Commission; and
- The distance and routing of extended sewerage infrastructure is proximate and located such that there is limited potential for additional regional sewerage connection requests in the surrounding area.

At its September 23, 2022 meeting, the MVRD Board passed the following resolution (Reference 1):

That the MVRD Board:

- a) resolve that the extension of GVS&DD sewerage services for a new clubhouse associated with the Sunshine Woods Golf Centre at 10556 64 Avenue in the City of Delta is consistent with the provisions of Metro Vancouver 2040: Shaping our Future; and*
- b) forward the requested Fraser Sewerage Area extension application to the GVS&DD Board for consideration.*

GVS&DD CONSIDERATION

The Liquid Waste Services technical review examined the financial, technical, operational, and service level impacts on the regional sewer system. The review concluded there will be a negligible additional impact on the regional sewerage system due to this connection. The property owner will bear all costs associated with connecting the property to the regional sewerage system. The City of Delta will need to submit an Application to Extend Sewerage and Drainage Systems (Reference 2) to the GVS&DD. Details of the proposed FSA amendment are shown on Drawing No. SA-2376 Sheet 117 (Attachment 1).

The Greater Vancouver Sewerage and Drainage District Sewerage and Drainage Areas Boundaries Amending Bylaw No. 359, 2022 (Attachment 2) is provided for GVS&DD Board consideration.

ALTERNATIVES

1. That the GVS&DD Board:
 - a) give first, second and third reading to *the Greater Vancouver Sewerage and Drainage District Sewerage and Drainage Areas Boundaries Amending Bylaw No. 359, 2022*; and,
 - b) pass, and finally adopt the *Greater Vancouver Sewerage and Drainage District Sewerage and Drainage Areas Boundaries Amending Bylaw No. 359, 2022*.
2. That the GVS&DD Board receive for information the report dated September 23, 2022, titled "*Greater Vancouver Sewerage and Drainage District Sewerage and Drainage Areas Boundaries Amending Bylaw No. 359, 2022 – Fraser Sewerage Area – City of Delta*", and provide alternate direction to staff.

As the application is consistent with the provisions for sewer services under *Metro 2040*, and there are no regional, technical, or financial concerns, staff recommend Alternative 1.

FINANCIAL IMPLICATIONS

The property owner will bear connection costs from the subject property to the sewer system.

CONCLUSION

Metro Vancouver received an application from the City of Delta requesting an amendment of the FSA boundary to include the footprint of the proposed new Sunshine Woods Golf Centre clubhouse located at 10556 64 Avenue in the City of Delta. The new clubhouse will replace the existing clubhouse, which is already within the FSA. The MVRD Board resolved that the application was consistent with the provisions of *Metro 2040* and referred the application to the GVS&DD Board for technical consideration. A Liquid Waste Services staff review indicated no financial impact on the FSA and negligible impact on the regional sewerage system as a result of this connection.

As the application is consistent with the provisions for sewer services under *Metro 2040*, and there are no regional, technical, or financial concerns, staff recommend Alternative 1.

Attachments

1. Drawing No. SA-2376 Sheet 117: Fraser Sewerage Area Amendment 10556 64 Avenue, City of Delta (54690780)
2. *Greater Vancouver Sewerage and Drainage District Sewerage and Drainage Areas Boundaries Amending Bylaw No. 359, 2022* (54304361)

References

1. "[Request for Sanitary Service Connection at 10556 64 Avenue, Delta](#)", report dated July 15, 2022
2. [Application to Extend Sewerage and Drainage Systems](#)

EXISTING FRASER
SEWERAGE AREA
BOUNDARY

N.T.S.


PROPOSED EXPANSION OF THE FRASER SEWERAGE AREA TO INCLUDE THE BUILDING FOOTPRINT ONLY

64 AVE

10556

CITY OF DELTA

HWY 97

							GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT				
							Design: <u>ME</u>	FRASER SEWERAGE AREA AMENDMENT	SCALE: N.T.S.		
							Drawn: <u>JM</u>		DISTRICT FILE SA-2376		
							Checked: _____		SHEET 117		
A	JUL.22	ME	JM			ISSUED FOR REVIEW	Approved	10556 64 AVENUE SUNSHINE WOODS GOLF CENTRE (2017) INC. CITY OF DELTA	DRAWING NUMBER		
Iss.	Date	Desn	Dr'n	Chk'd	App'd	Description			Manager		
0 20 							SUPERSEDES PRINTS OF THIS DRAWING NUMBER WITH LETTERS PREVIOUS TO ➡ A				
Bar Is 20mm On Original Drawing. If Not On This Sheet, Adjust Scales Accordingly											

GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT**BYLAW NO. 359, 2022****A Bylaw to amend the "Greater Vancouver Sewerage and Drainage District Sewerage and Drainage Areas Boundaries Bylaw No. 310, 2018"****WHEREAS:**

- A. the Board of Directors of the Greater Vancouver Sewerage and Drainage (the GVS&DD) board (the "Board") adopted "Greater Vancouver Sewerage and Drainage District Sewerage and Drainage Areas Boundaries Bylaw No. 310, 2018", to fix the boundaries of GVS&DD Sewerage and Drainage Areas;
- B. the Board of the Greater Vancouver Sewerage and Drainage District wishes to amend "Greater Vancouver Sewerage and Drainage District Sewerage and Drainage Areas Boundaries Bylaw No. 310, 2018";

NOW THEREFORE the Board of the Greater Vancouver Sewerage and Drainage District enacts as follows:

Citation

- 1. The official citation of this bylaw is "Greater Vancouver Sewerage and Drainage District Sewerage and Drainage Areas Boundaries Amending Bylaw No. 359, 2022".

Amendment of Bylaw

- 2. The "Greater Vancouver Sewerage and Drainage District Sewerage and Drainage Areas Boundaries Amending Bylaw No. 359, 2022 is hereby amended as follows:

- a) by removing from the Fraser Sewerage Area the footprint of the existing clubhouse and adding to the Fraser Sewerage Area, the building footprint of the new clubhouse associated with the following property:

	Address	Municipality	PID
1.	10556 64 Avenue	Delta	001-518-330

- b) by replacing Schedule "B" of Bylaw 310, 2018, as amended, with the attached Schedule "B", forming part of this bylaw, containing Drawing Number S-3200 Sheet 2 titled "Greater Vancouver Sewerage and Drainage District Plan of Fraser Sewerage Area South Portion" dated July 22, 2022 to show the boundaries of the Fraser Sewerage Area, as amended.

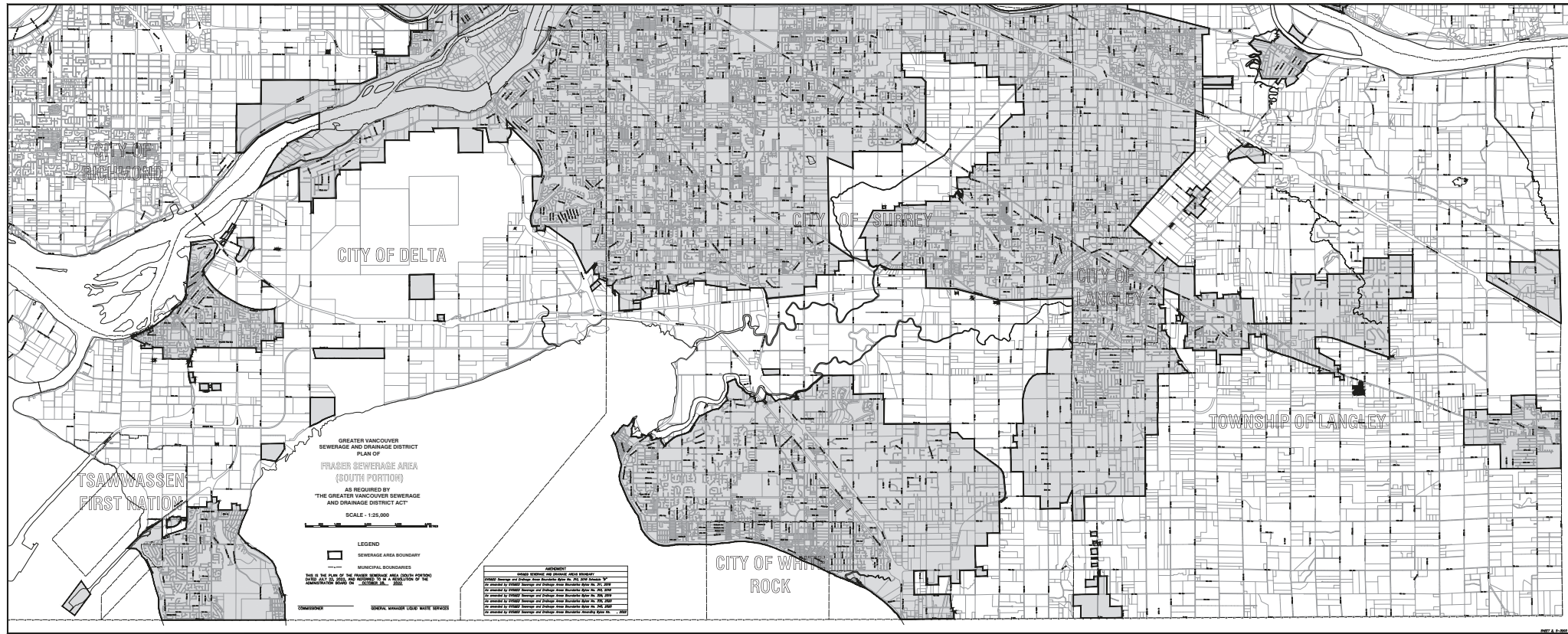
Read a first, second and third time this _____ day of _____, _____.

Passed and finally adopted this _____ day of _____, _____.

Sav Dhaliwal, Chair

Chris Plagnol, Corporate Officer

[Click here to view high resolution map](#)



To: Liquid Waste Committee and Water Committee

From: Cheryl Nelms, General Manager, Project Delivery

Date: September 28, 2022 Meeting Dates: October 5, 2022
October 6, 2022

Subject: **Compensation Practices Related to Metro Vancouver's Delivery of Projects**

RECOMMENDATION

That the GVS&DD and GVWD Boards receive for information the report dated September 28, 2022, titled "Compensation Practices Related to Metro Vancouver's Delivery of Projects".

EXECUTIVE SUMMARY

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

Metro Vancouver is currently reviewing practices underway with a goal to create a predictable, consistent and equitable approach to mitigating and compensating member jurisdictions for the impacts to their community during construction of region-serving infrastructure. Staff intend to bring back future reports that will recommend guiding principles and approaches to different forms of compensation.

PURPOSE

To provide the GVS&DD and GVWD Boards an overview of current practices used by Metro Vancouver when delivering projects, to either mitigate or compensate for the impacts to communities during construction.

BACKGROUND

Each year, Metro Vancouver delivers projects to ensure that the region has reliable access to clean drinking water, safe wastewater removal and treatment, and waste disposal and recycling. Additionally, Metro Vancouver develops regional parks for use by the public and builds housing to support low-income residents. The purpose of delivering these services on behalf of the members is to provide infrastructure at a scale that is more efficient than if each member or participant delivered the services separately. As a result, the services offer efficiencies that benefit all members. Members participate in the core services based on the understanding that not only will the benefits of the service be equitably shared amongst participants, but the impacts and costs of delivering those services are also equitably shared.

Construction, particularly the linear construction that is required to build or replace large regional water and sewer mains, has impact to communities through noise, dust, and traffic disruption.

Currently Metro Vancouver addresses impacts on a case-by-case basis. Addressing the impacts may be through mitigation and/or compensation, and are identified in collaboration with member jurisdictions within which the construction project is taking place.

Forms of mitigation can include changes to construction methodology. For example, choosing to do a tunneling method rather than open cut to reduce local community impacts, can significantly increase the cost of a project. Forms of compensation may include adding amenities (washrooms, trails), compensating for lost revenue or paying fees that Metro Vancouver may or may not be legally obligated to pay.

In 2018, the Board rescinded the existing Capital Projects Policy and recommended that Metro Vancouver staff work with staff advisory committees to develop a capital projects framework, which would capture the approach and process of how Metro Vancouver projects are planned, managed, constructed, and communicated. Since then, Metro Vancouver has been engaging with member jurisdictions through a Regional Engineers Advisory Committee (REAC) working group. In conversations with the working group, members have expressed interest in working collaboratively to reduce impacts of Metro Vancouver projects on the community, reduce impacts of Metro Vancouver projects on staff capacity, and address the impact of hosting Metro Vancouver facilities in their community. Various recommendations have been made by the group, and Metro Vancouver is now beginning a review of mitigation and compensation practices, as well as what types of costs should be considered compensation.

Metro Vancouver's intent is to develop predictable, consistent, and equitable approaches to mitigating construction impacts and compensating member jurisdictions for the impacts to their community during construction. This will allow Metro Vancouver to strengthen our relationships with member jurisdictions and the public. Specific objectives for this work include:

- Creating a more equitable and transparent project delivery process across all member jurisdictions
- Reducing project delivery timelines and costs
- Reducing overall impact on the region's ratepayers
- Addressing how members' permit processes and fees are applied to capital projects

The review will also take into consideration whether Metro Vancouver should or should not be participating in existing municipal payment frameworks used for developers.

AREAS OF MITIGATION AND COMPENSATION UNDER REVIEW

Statutory Rights of Way

Currently, statutory rights of way (SRW) are negotiated on a case-by-case basis with member jurisdictions and others when projects are underway. Increasingly, Metro Vancouver is being asked to pay current market value for land that has either been previously purchased in the public interest

or is an existing municipal asset. A full policy proposal will be brought forward to the Metro Vancouver Board in 2023 for consideration.

Community Amenities

Currently, Metro Vancouver works collaboratively with member jurisdictions to provide amenities in tandem with construction on a case-by-case basis. Examples include things such as water features, staircases, multi-use or bike paths, parking stalls, washrooms, park upgrades, public plazas, public art, and interpretive elements. These contributions can vary in cost and percentage of the project budget. Currently, there is no standard or limit set, and the extent of the provision is balanced with other project impacts as well as priorities in a local community.

Other Fees

Other types of fees that Metro Vancouver either pays or has been asked to pay in the course of delivering infrastructure include; Development Cost Charges (DCCs), Community Amenity Charges (CACs), payment in lieu of taxes, and permit fees (e.g. building permits, development permits, highway use permits, etc.).

The REAC working group has been discussing the appropriateness of these types of payments by Metro Vancouver to member jurisdictions. This feedback, along with Metro Vancouver's evaluation will inform the development of a guide that will reference considerations when levying fees on Metro Vancouver projects to help assess whether fees are applicable.

Compensation for Lost Revenue, Restoration of Damage, and Other

Metro Vancouver currently compensates members for any damage caused and restoration of disturbed areas and specific to temporary work areas, lost revenues (such as from parking lots), and additional items as may be negotiated between Metro Vancouver and its members.

Other Forms of Mitigation

Metro Vancouver also works closely with communities to design and deliver projects with low impact. On occasion, this mitigation can increase costs of a project by a significant amount. One example is Metro Vancouver agreeing to tunnel mains to reduce impacts on the community and traffic, which can increase project costs. These mitigation efforts will also be taken into consideration as how it adds into the overall mitigation and compensation costs that Metro Vancouver pays to deliver projects.

ADDITIONAL TOOLS UNDER DEVELOPMENT

Capital Projects Impact Assessment Tool

Metro Vancouver is evaluating the creation of an impact assessment tool that would allow the organization to evaluate more consistently and systematically the impacts of Metro Vancouver construction projects on the local communities and identify potential mitigation and/or compensation measures.

Capital Projects Guide

A Capital Projects Guide is under development with input from the REAC working group. The purpose of a Capital Projects Guide is to capture the approach and process of how Metro Vancouver projects are planned, managed, constructed, and communicated. This will help promote a transparent and consistent process that ensures all members and partners know what to expect. The guide will:

- Set expectations and improve communication between Metro Vancouver and its members.
- Document how Metro Vancouver plans and delivers its capital projects and the milestones for member input/participation.
- Facilitate a consistent and transparent process for the delivery and communication of capital projects within host member jurisdictions.

In addition to this forward looking work, Metro Vancouver staff continue to work with member jurisdictions to set up regular coordination meetings to talk about upcoming work, protocols, and collectively mitigate impacts of how Metro Vancouver projects intersect with work being delivered by that member jurisdiction.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

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

CONCLUSION

Each year, Metro Vancouver delivers projects to ensure that the region has access to clean drinking water, safe wastewater removal and treatment, and waste disposal and recycling. Additionally, Metro Vancouver develops regional parks for use by the public and builds housing to support low-income residents. The purpose of delivering these services on behalf of the members is to provide infrastructure at a scale that is more efficient than if each member or participant delivered the services separately. As a result, the services offer efficiencies that benefit all members. Members participate in the core services based on the understanding that not only will the benefits of the service be equitably shared amongst participants, but the impacts and costs of delivering those services are also equitably shared.

Currently Metro Vancouver addresses project impacts on a case-by-case basis. The development of standardized, region-wide approaches to mitigation and compensation for projects happening in any member jurisdiction would help to manage project costs and schedule, and mitigate scope creep on design, or changes resulting in construction claims once construction has begun, as well as ensure a transparent and equitable approach across all member jurisdictions.

Staff will return to the Board with additional reports containing recommendations on guiding principles and approaches to different forms of compensation.

To: Liquid Waste Committee

From: Cheryl Nelms, General Manager, Project Delivery
Roy Moulder, Director, Procurement, Procurement and Real Estate Services

Date: September 28, 2022 Meeting Date: October 5, 2022

Subject: **Award of a Contract Resulting from RFP No. 21-425: Ground Improvements and Preload Engineering Services for the Iona Island Wastewater Treatment Plant Upgrades Program**

RECOMMENDATION

That the GVS&DD Board:

- a) approve award of a contract in the amount of up to \$9,285,048 (exclusive of taxes) to Golder Associates Ltd., resulting from Request for Proposal No. 21-425: Ground Improvements and Preload Engineering Services for the Iona Island Wastewater Treatment Plant Upgrades Program, 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 award should proceed.
-

EXECUTIVE SUMMARY

The Iona Island Wastewater Treatment Plant upgrade will be constructed on an area of liquefiable soil conditions. For the new infrastructure to meet post disaster performance criteria and be seismically resilient, extensive ground improvements will need to be undertaken. The ground improvements work is being completed as an early works component, and will enable the refinement of the Iona Island Wastewater Treatment Plant Upgrades Program schedule, budget and risk management strategy.

A Request for Proposals No. 21-425 was issued on February 7, 2022 to retain the services of a geotechnical engineering consultant to complete the design of the ground improvements for the Iona Island Wastewater Treatment Plant Upgrades Program. Golder Associates Ltd. (Golder) was identified as the highest ranked proponent, offering best value of the three shortlisted firms who submitted a proposal. Golder proposed the strongest team of key personnel, demonstrated the best understanding of the project and provided the most detailed project methodology and work plan.

It is recommended that the GVS&DD Board authorize the award of a contract for the ground improvements and preload engineering services for the Iona Island Wastewater Treatment Plant Upgrades Program, in an amount of \$9,285,048 (exclusive of taxes) to Golder and authorize the Commissioner and the Corporate Officer to execute the required documentation.

PURPOSE

This report is to advise the GVS&DD Board of the results of Request for Proposal (RFP) No. 21-425: Ground Improvements and Preload Engineering Services for the Iona Island Wastewater Treatment

Plant (IIWWTP) Upgrades Program and to recommend award of the contract in an amount of \$9,285,048 (exclusive of taxes) to Golder Associates Ltd.

BACKGROUND

Pursuant to the *GVS&DD Officers and Delegation Bylaw. No. 284, 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 Board of Directors.

This report is being brought forward to the Liquid Waste Committee to consider a recommendation to the GVS&DD Board to award a contract ground improvements and pre-load engineering services at the IIWWTP.

PROJECT DESCRIPTION

Iona Island, on which the IIWWTP is located, is situated in the Fraser River Delta and is comprised of fine river sediment and liquefiable soils. To be compliant with the British Columbia Building Code, the upgraded IIWWTP needs to be seismically resilient and meet post disaster performance criteria that would enable it to remain operational after an earthquake. To accommodate this post disaster performance criteria, extensive ground improvements are required at the IIWWTP Upgrade site. The ground improvements work is being completed as an early works component, and will enable the refinement of the IIWWTP Upgrades Program schedule, budget and risk management strategy. The timely advancement of the ground improvements design and subsequent construction are critical path project components.

EVALUATION

As a result of Request for Qualifications No. 21-176: Ground Improvements and Preload Engineering Services for the IIWWTP, three (3) experienced geotechnical engineering consultants were shortlisted and invited to respond to RFP No. 21-425 which was issued on February 7, 2022. The competition closed on March 22, 2022 and three (3) compliant submissions were received, as shown in Table 1.

Table 1: Proposal Submission Pricing

Proponent	Proposed Fee (exclusive of taxes)
Golder Associates Ltd.	\$9,198,465
Klohn Crippen Berger Ltd.	\$9,109,343
WorleyParsons Canada Services Ltd.	\$8,554,231

Proposals were evaluated based on 65% technical and 35% financial. The technical component of the proposals was evaluated by staff within the Project Delivery team and the financial component was evaluated by staff within the Procurement Division.

Golder demonstrated in their submission that they are well qualified to complete the scope of work through the assignment of a strong team of key personnel who have recent experience providing similar services to Metro Vancouver for similar projects. Along with putting forth the strongest team, Golder provided the more detailed project methodology and work plan, which included several

design alternatives that may provide value to the project. Their work plan was also sensitive to the Iona Beach Regional Park, sensitive ecosystems, First Nations and stakeholder groups.

As is allowed for within the competition documents, a clarification meeting was conducted with Golder, as the highest ranked proponent. The clarifications addressed two minor shortcomings identified in their proposal including sufficient hours being allocated to their Project Manager and the request for additional information needed to ascertain the contracting opportunities financial value being provided to First Nation entities. Although the strongest response of the three submissions regarding First Nation economic opportunities, further clarifications were required.

The contract value after the clarifications were completed increased by \$86,583, to \$9,285,048, corresponding to 0.9% of their proposed fee of \$9,198,465 (exclusive of taxes). The additional fees were mainly to ensure that Golder provides sufficient construction engineering services support during the ground improvements construction phase to maintain quality assurance rigor and minimize cost overruns. Golder did provide additional information to ascertain the contracting opportunities financial value being provided to First Nation entities, which will include environmental monitoring during construction and may also include heavy civil works for site preparation.

ALTERNATIVES

1. That the GVS&DD Board:
 - a) approve award of a contract in the amount of up to \$9,285,048 (exclusive of taxes) to Golder Associates Ltd., resulting from Request for Proposal No. 21-425: Ground Improvements and Preload Engineering Services for the Iona Island Wastewater Treatment Plant Upgrades Program, 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 award should proceed.
2. That the GVS&DD Board terminate Request for Proposal No. 21-425: Ground Improvements and Preload Engineering Services for the IIWWTP Upgrades Program and direct staff to report back to the GVS&DD Board with options for an alternate course of action.

FINANCIAL IMPLICATIONS

If the GVS&DD Board approves Alternative 1, a contract will be awarded to Golder Associates Ltd. for the amount of \$9,285,048 (exclusive of taxes) to complete the design of the ground improvements for the IIWWTP Program. This amount is within the budget allocated for this project.

The GVS&DD Board has the choice to not proceed with Alternative 1, but staff will need further direction in relation to completion of the project. Alternative 2 will result in a delay to the design and construction of the ground improvements works and subsequently a delay to the overall IIWWTP Program schedule.

CONCLUSION

RFP No. 21-425 was issued on February 7, 2022 to retain the services of a geotechnical engineering consultant to complete the design of the ground improvements for the IIWWTP Upgrades Program.

Golder Associates Ltd. was identified as the highest ranked proponent. Based on the evaluations of the proposals, it is recommended that the GVS&DD Board authorize the award of a contract resulting from RFP No. 21-425 for the ground improvements and preload engineering services for the IIWWTP Upgrades Program, in an amount of \$9,285,048 (exclusive of taxes) to Golder Associates Ltd and authorize the Commissioner and the Corporate Officer to execute the required documentation.

49448102

To: Liquid Waste Committee

From: Marie-Liesse Marc, Director, Major Projects, Project Delivery
Roy Moulder, Director, Purchasing and Risk Management, Financial Services

Date: September 28, 2022 Meeting Date: October 5, 2022

Subject: **Award of Phase 1 Resulting from RFP No. 22-103: Program Management and Technical Services for Northwest Langley Wastewater Treatment Plant Expansion Program**

RECOMMENDATION

That the GVS&DD Board:

- a) approve the award of a contract for an amount of up to \$16,886,338 (exclusive of taxes) to Carollo Engineers Inc. for Phase 1, resulting from Request for Proposal No. 22-103 Northwest Langley Wastewater Treatment Plant Expansion Program – Program Management and Technical Services, 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

The Northwest Langley Wastewater Treatment Plant Expansion Projects are in various stages of design and construction and are being delivered under the overall direction of Metro Vancouver's Project Delivery (PD) department. The PD team requires the support of technical and project management resources and is therefore engaging a Project Management and Technical Services consultant.

This report is to advise the GVS&DD Board of the results of Request for Proposal No. 22-103 (RFP): Northwest Langley Wastewater Treatment Plant Expansion Program – Program Management and Technical Services and to recommend award of Phase 1 to Carollo Engineers Inc., in an amount of up to \$16,886,338 (exclusive of taxes).

The RFP was issued in April 2022. Three proposals were received on April 26, 2022 from Carollo Engineers Inc., HDR Corporation, and IBI Group. The proposal submitted by Carollo Engineers Inc. had the highest proposed price, but also the highest overall ranking, offering best value to the organization. Carollo Engineers Inc. proposed the strongest team, provided the most well developed work plan and was the only proposal to confirm acceptance of the RFP's requirement for full-time site presence for the duration of the contract.

PURPOSE

This report is to advise the GVS&DD Board of the result of RFP No. 22-103: Northwest Langley Wastewater Treatment Plant Expansion Program – Program Management and Technical Services, and to recommend award of the initial Phase 1 to Carollo Engineers Inc. (Carollo) for Program Management and Technical Services (PMTS), in the amount of up to \$16,886,338 (exclusive of taxes).

BACKGROUND

Pursuant to the *GVS&DD Officers and Delegation Bylaw 284, 2014* and the *Procurement and Real Property Contracting Authority Policy*, procurement contracts which exceed a value of \$5 million require the approval of the GVS&DD Board of Directors.

This report is being brought forward to the Liquid Waste Committee to consider a recommendation to the GVS&DD Board to authorize award of Phase 1 for Program Management and Technical Services on the Northwest Langley Wastewater Treatment Plant Expansion Program.

PROJECT DESCRIPTION

The Northwest Langley Wastewater Treatment Plant Expansion Program (the Program) is being undertaken to accommodate growth in the region. The Program includes a pump station and sanitary sewer overflow tank, a twin horizontally directional drilled river crossing, a 106 MLD wastewater treatment plant and ground improvements, and an outfall (the Projects), which are in various stages of design and construction.

Consultant Program Management and Technical Services (the Services) are required to deliver the Program, including design and implementation of new project control tools and procedures, project management support for the Projects, and provision of specialized technical expertise to support design and construction of the facilities.

Metro Vancouver anticipates the Services to be provided to the end of 2030 and until all Projects and the post-commissioning services are complete. Given the complexity and the various support requirements during the duration of the Program, Metro Vancouver intends to award a contract for the Services for an initial three-year period ending in June 2025 (Phase 1). It is anticipated that two subsequent amendments to this contract be awarded upon successful completion of the preceding phase with terms of July 1, 2025 to June 30, 2028 and July 1, 2028 to June 30 2030, respectively.

EVALUATION

Three (3) experienced firms responded to RFP No. 22-103 for PMTS of the Program that was publicly advertised on Metro Vancouver's and BC Bid websites. The RFP closed on April 26, 2022, and the submitted proposals are as follows:

Proponent	Proposal Price (exclusive of taxes)
Carollo Engineers, Inc.	\$44,990,470
HDR Corporation	\$43,869,205
IBI Group	\$36,439,446

The proposals were evaluated on their commercial (25%) and technical (75%) merits. Carollo has been identified as the highest ranked proponent and offering the best value to the organization. For this contract, Carollo has teamed up with WSP and Brown & Caldwell to provide the PMTS for the remainder of design, construction, and commissioning of the Program. Carollo and WSP have been working on the project since 2019, providing program management services and technical support to the Projects. Carollo, WSP, and Brown & Caldwell have demonstrated experience working together

on large scale wastewater projects of similar scope and complexity. A team that has a proven track record of working together will bring consistency to the delivery of this project.

While Carollo's fee summary is the highest of all three proponents, they were the highest ranked proponent technically and overall. Carollo proposed the strongest personnel, as well as the most well developed project work plan and understanding of scope. Carollo was the only proponent to fully meet the RFP's requirement for full-time staffing of key individuals and has committed to a full-time site presence in their proposal.

As is allowed for under the terms of the RFP and following the proposal evaluation, a meeting was held with the highest ranked proponent, Carollo, to confirm the scope of work, allocation of resources, and deliverables. Through this negotiation with the proponent, the evaluation team was able to identify several areas of services that, after clarification, were able to be reorganized, which resulted in a cost reduction. Carollo's original proposal fee for PMTS was \$44,990,470 (exclusive of taxes). As a result of the negotiations, Carollo's fee has been revised to arrive at the recommended value of \$39,491,665.

Phase	Description	Proposal Price*	Revised Price*
1	Phase 1 (up to June 30, 2025)	\$16,971,030	\$16,886,338
2	Phase 2 (July 1, 2025 - June 3, 2028)	\$17,102,318	\$13,980,062
3	Phase 3 (July 1, 2028 - June 30, 2030)	\$10,917,122	\$8,625,265
	Total:	\$44,990,470	\$39,491,665

exclusive of taxes*

ALTERNATIVES

- 1) That the GVS&DD Board:
 - a) approve the award of a contract for an amount of up to \$16,886,338 (exclusive of taxes) to Carollo Engineers Inc. for Phase 1, resulting from Request for Proposal No. 22-103 Northwest Langley Wastewater Treatment Plant Expansion Program – Program Management and Technical Services, 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 GVS&DD Board terminate Request for Proposal No. 22-103 Northwest Langley Wastewater Treatment Plant Expansion Program – Program Management and Technical Services, and direct staff to report back to the GVS&DD Board with options for an alternate course of action.

FINANCIAL IMPLICATIONS

If the GVS&DD Board approves Alternative 1, a contract will be awarded to Carollo Engineers Inc., for an amount of up to \$16,886,338 (exclusive of taxes), for PMTS for an initial term ending June 30, 2025 (Phase 1). The full scope of services is contemplated for a term approximately eight years, until all projects and the post-commissioning services are complete. Total anticipated contract value for all

three phases is \$39,491,665 (exclusive of taxes). The proposal amount can be accommodated within the updated budget for the Program.

Subsequent phases will be awarded through the appropriate contracting authority and subject to satisfactory completion of the previous phase and scope of services.

The GVS&DD Board has the choice not to proceed with Alternative 1, but staff will need further direction in relation to the Projects. Alternative 2 will result in delays to the program completion as provided services by Carollo are essential for the success of the Program and are not available internally in the organization. Delay in completion of the projects will impact the ability to meet the region's sewerage needs.

CONCLUSION

As part of the NSWWTP Projects, RFP No. 22-103 was issued for Northwest Langley Wastewater Treatment Plant – Program Management and Technical Services, and Carollo Engineers Inc. was identified as the highest ranked proposal offering the best value to the organization. It is recommended that the GVS&DD Board authorize the Commissioner and the Corporate Officer to award and execute a contract for Program Management and Technical Services – Phase 1 for the NLWWTP Program to Carollo Engineers Inc. for an amount of up to \$16,886,338 (exclusive of taxes).

54854042

To: Liquid Waste Committee

From: Marie-Liesse Marc, Director Major Projects, Project Delivery
Roy Moulder, Director, Procurement, Procurement and Real Estate Services

Date: September 28, 2022 Meeting Date: October 5, 2022

Subject: **Amendment to Contract No. PC18-1232 – Archaeological Services for Northwest Langley Wastewater Treatment Plant Phase 2 Ground Improvements**

RECOMMENDATION

That the GVS&DD Board:

- a) approve a contract amendment in the amount of up to \$5,900,996.82 (exclusive of taxes) to Katzie Development Limited Partnership, 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

A contract amendment to Contract No. PC18-1232: Archaeological Services for Northwest Langley Wastewater Treatment Plant Phase 2 Ground Improvements, in the amount of up to \$5,900,996.82 (exclusive of taxes), is proposed to procure archaeological services to support the heritage inspection and investigation work on the Phase 2 portion of the Northwest Langley Wastewater Treatment Plant Expansion Project site.

The identification of a large intact archaeological site has impacted the early ground improvements works and is expected to significantly delay the completion of the Northwest Langley Wastewater Treatment Plant. Katzie Development Limited Partnership, Metro Vancouver's archaeological consultant and permit holder, has been providing quality archaeological monitoring services on the site since 2018 under Sole Source No. 18-163, as is allowed for under policy. Award of this contract amendment will allow the heritage inspection and investigation work to continue without incurring additional delays to the project timeline. The value of this amendment will increase the total contract value to \$10,891,578.09 (exclusive of taxes).

PURPOSE

The purpose of this report is to recommend that the GVS&DD Board approve the amendment to Contract No. PC18-1232: Archaeological Services for Northwest Langley Wastewater Treatment Plant Phase 2 Ground Improvements, and award to Katzie Development Limited Partnership in the amount of up to \$5,900,996.82 (exclusive of taxes), for archaeological services to support the heritage inspection and investigation work in the Phase 2 area of the site.

BACKGROUND

Pursuant to the *GVS&DD Officers and Delegation Bylaw 284, 2014* and the *Procurement and Real Property Contracting Authority Policy*, procurement contracts which exceed a value of \$5 million require the approval of the GVS&DD Board of Directors.

This report is being brought forward to the Liquid Waste Committee to consider a recommendation to the GVS&DD Board to authorize award of a contract amendment for archaeological services to support heritage inspection and investigation work on the Northwest Langley Wastewater Treatment Plant (NLWWTP) Phase 2 site.

PROJECT DESCRIPTION

The NLWWTP is being expanded to serve a larger population due to growth in the region. The site is considered a sensitive seismic area and all new structures will require ground improvements (stone columns and pre-loading) to meet seismic performance criteria. Construction of four phases of ground improvements has been ongoing since 2018. Phase 1 was completed in March 2020; Phase 2 is ongoing; and Phase 3 and Phase 4 have not started (see Attachment).

The NLWWTP Project Definition Report determined the potential for encountering intact archaeological sites was low. However, on June 10, 2020, an artifact was recovered in the southeastern section of the Phase 2 area. After this find, Katzie Development Limited Partnership (KDLP) commenced full-scale archaeological monitoring of the site on July 6, 2020, and has since identified a large intact archeological site and recovered over 2,700 artifacts to date while completing the heritage inspection work. This work, and the impact on the NLWWTP Expansion Program, is further detailed in GVS&DD Board Report titled, "Northwest Langley Wastewater Treatment Plant Expansion Program – Ground Improvements and Preload Project Update", dated February 18, 2022 (see Reference).

CONTRACT AMENDMENT

Under Contract No. PC18-1232, KDLP has been providing archaeological services on the Project site since 2018. No archaeological site was identified in the Phase 1 area. In the Phase 2 portion of the site, the heritage inspection is mostly complete, heritage investigation is ongoing, and the Heritage Alteration Permit has already been obtained.

The proposed contract amendment will allow KDLP to complete the remaining inspection and investigation scope in the Phase 2 area. This change order does not include heritage alteration work, which will be estimated and performed when the heritage investigation work is completed. To date, \$4,990,581.27 has been awarded to KDLP under Contract No. PC18-1232. This work has been progressed as a series of change orders as the size of the archeological site and the scope of the archaeological work was unknown when the initial contract was awarded. The work will continue to be managed and awarded as a series of linear change orders to provide transparency for sole sourcing.

The wastewater treatment plant site is located within the asserted traditional territories of eight First Nations and in close proximity to three Katzie First Nations reserves. KDLP is owned and operated by

Katzie First Nation and employs First Nations community members from both Katzie and Kwantlen First Nation as archaeological monitors. KDLP has been working on the site since 2018, identified the first lithic artifact on the site, and are the permit holder for all stages of the archaeological work. They are well versed in the legislative requirements associated with the scope of work and have over 40 years of cultural resource management experience.

All rates provided in the amendment are consistent with their original scope of work, with some rates being reduced due to the long term nature of the work. The scope of work is being completed in accordance with the methods presented in the Heritage Inspection and Investigation Permits, which is consistent with the permit conditions and standards outlined by the BC Archaeology Branch (Ministry of Forests).

ALTERNATIVES

1. That the GVS&DD Board:
 - a) approve a contract amendment in the amount of up to \$5,900,996.82 (exclusive of taxes) to Katzie Development Limited Partnership, 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 GVS&DD Board not approve the contract amendment for archaeological services and direct staff to report back to the GVS&DD Board with options for an alternate course of action.

FINANCIAL IMPLICATIONS

If the GVS&DD Board approves Alternative 1, a contract amendment in the amount of up to \$5,900,996.82 (exclusive of taxes) will be awarded to KDLP for archaeological services. This will impact the overall budget for the Ground Improvement work as the Project Definition Report determined the potential for encountering intact archaeological sites was low and the level of effort required to meet *Heritage Conservation Act* requirements was not anticipated. However, the cost of this amendment can be accommodated within the updated budget for the Program. The NLWWTP Expansion Program is a growth project eligible to be primarily funded by Development Cost Charges. With this amendment the total contract value will be \$10,891,578.09.

The GVS&DD 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 delays in completing the archaeological work and escalation costs for the Program. There is a shortage of qualified archaeologists in the Province and KDLP has been hiring and ramping up staff to support this work. Stopping the work could result in the loss of archaeological staff to other projects in the province.

CONCLUSION

Proposed contract amendment to Contract No. PC18-1232 – Archaeological Services for Northwest Langley Wastewater Treatment Plant Phase 2 Ground Improvements, in the amount of up to \$5,900,996.82 (exclusive of taxes), will allow Katzie Development Limited Partnership to continue

providing archaeological services. The identification of a large intact archaeological site has impacted the ground improvements and is expected to significantly delay the completion of the expanded wastewater treatment plant. Award of this contract amendment will allow work to proceed without further delay to the construction of the remaining ground improvements and treatment plant.

Attachment

Northwest Langley Wastewater Treatment Plant Ground Improvements – Aerial View of Different Phases

Reference

[Northwest Langley Wastewater Treatment Plant Expansion Program – Ground Improvements and Preload Project Update, report dated February 18, 2022](#)

54896525

Northwest Langley Wastewater Treatment Plant Ground
Improvements – Aerial View of Different Phases



To: Liquid Waste Committee

From: Marie-Liesse Marc, Director, Major Projects, Project Delivery
Roy Moulder, Director, Procurement, Procurement and Real Estate Services

Date: September 29, 2022 Meeting Date: October 5, 2022

Subject: **Amendment to Contract No. PC19-1709: Northwest Langley Wastewater Treatment Plant Ground Improvements and Preload Project**

RECOMMENDATION

That the GVS&DD Board:

- a) approve a contract amendment in the amount of up to \$10,238,205.25 (exclusive of taxes) for Phase A to Pomerleau Inc., subject to final review by the Commissioner;
 - 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

Under Contract No. PC19-1709: Northwest Langley Wastewater Treatment Plant Ground Improvement and Preload Project, Pomerleau has been providing construction services on a portion of the site for the excavation of the native soil and installation of ground improvements. The excavation work is subject to archaeological monitoring under the *Heritage Conservation Act* due to the identification of a large archaeological site and the recovery of more than 2,700 artifacts to date.

Due to the uncertainty around the extent of the archaeological site, this work is being completed on a time and materials basis in 2 phases. The current contract value is \$30,375,383.89. The proposed contract amendment for Phase A, in the amount of up to \$10,238,205.25 (exclusive of taxes), will allow Pomerleau Inc. to continue excavation work required under the heritage inspection permit. Phase B will be awarded at a later date through the appropriate contracting authority as the extent of the work will depend on the results of the heritage inspection.

This work was detailed in a public Notice of Intent to Contract No. 22-213, from which Metro Vancouver did not receive any responses or challenges from other potentially qualified proponents. The construction services to complete the remaining ground improvement work (stone columns) will be procured by competitive bid subsequent to the completion of all excavation work and associated archaeological monitoring.

PURPOSE

The purpose of this report is to recommend that the GVS&DD Board approve the amendment to Contract No. PC19-1709: Northwest Langley Wastewater Treatment Plant Ground Improvement and Preload Project, and award to Pomerleau Inc. (Pomerleau) in the amount of up to \$10,238,205.25 (exclusive of taxes), for construction services to carry out excavation work across the entire Northwest Langley site.

BACKGROUND

Pursuant to the *GVS&DD Officers and Delegation Bylaw 284, 2014* and the *Procurement and Real Property Contracting Authority Policy*, procurement contracts which exceed a value of \$5 million require the approval of the GVS&DD Board of Directors.

PROJECT DESCRIPTION

The Northwest Langley Wastewater Treatment Plant (NLWWTP) is being expanded to serve a larger population due to growth in the region. The site is considered a sensitive seismic area and all new structures will require the excavation of the native soil (overburden and organic material) and installation of ground improvements (stone columns and pre-loading) to meet seismic performance criteria. Excavation and ground improvement work has been ongoing on site since 2018.

The NLWWTP Project Definition Report determined the potential for encountering intact archaeological sites as low. However, on June 10, 2020, an artifact was recovered during excavation in the southeastern section of the site. After this find, Katzie Development Limited Partnership – Metro Vancouver’s archaeological consultant – commenced full-scale archaeological monitoring, identifying a large intact archaeological site and recovering more than 2,700 artifacts. This work is expected to significantly delay the completion of the NLWWTP; the impact on the Program is further detailed in GVS&DD Board Report entitled, “Northwest Langley Wastewater Treatment Plant Expansion Program – Ground Improvements and Preload Project Update”, dated February 18, 2022 (see Reference).

CONTRACT AMENDMENT FOR CONSTRUCTION SERVICES

Under Contract No. PC19-1709, Pomerleau has been providing construction services on a portion of the Northwest Langley site for the excavation of the native soil and installation of ground improvements, with an existing contract value of \$30,375,383.89.

The proposed contract amendment will allow Pomerleau to continue excavation work across the entire Northwest Langley site to prepare for remaining future ground improvement work (stone columns). The excavation work is subject to archaeological monitoring under the *Heritage Conservation Act* and will be completed in 2 phases.

Phase A includes: excavation of the native soil using the methodology outlined in our *Heritage Conservation Act* permits; off-site material hauling of negative archaeological material and on-site stockpile management of positive archaeological material; testing, remediation, and disposal of contaminated soils; general equipment support for dewatering, maintenance of haul roads, and wet-screening; and daily site coordination to manage safe work procedures. The total estimated value for this work is \$10,238,205.25.

Phase B will be an extension of the work detailed in Phase A and will be awarded at a later date through the appropriate contracting authority as the extent of the work will depend on the results of the heritage inspection, which delineates the extent of the archaeological site. The estimated maximum value to complete this work is \$4,637,000.

This work was detailed in NOIC No. 22-213, which was posted for 2 weeks on both BC Bid and the Metro Vancouver's website, closing May 24, 2022. Metro Vancouver did not call for competitive bids as Pomerleau has: demonstrated experience providing construction support services on large scale heritage inspection work; an established working relationship with the archaeological consultant; knowledge of archaeological procedures and permitting requirements; and is already working on the adjacent project sites and uniquely situated to coordinate the work through shared contractor workspaces. Metro Vancouver did not receive any responses or challenges from other potentially qualified proponents on NOIC No. 22-213.

Due to the uncertainty around the extent of the archaeological site, this work is being completed on a time and materials basis in line with the Blue Book Equipment Rental Rate Guide, which sets standard equipment rental rates across British Columbia. Where possible, competitive rates were procured for non-excavation works, such as off-site material disposal, contaminated material testing, and dewatering. All rates and estimates for the contract amendment were reviewed by the construction manager and deemed appropriate.

The construction services to complete the ground improvement work (stone columns) will be procured by competitive bid subsequent to the completion of all excavation work and associated archaeological monitoring.

ALTERNATIVES

1. That the GVS&DD Board:
 - a) approve a contract amendment in the amount of up to \$10,238,205.25 (exclusive of taxes) for Phase A to Pomerleau Inc., subject to final review by the Commissioner;
 - 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 GVS&DD Board not approve the contract amendment for construction services for archaeological work and direct staff to report back to the GVS&DD Board with options for an alternate course of action.

FINANCIAL IMPLICATIONS

If the GVS&DD Board approves Alternative 1, a contract amendment in the amount of up to \$10,238,205.25 (exclusive of taxes) for Phase A will be awarded to Pomerleau Inc. for construction services to carry out excavation work across the entire Northwest Langley site. This will impact the overall budget for the Ground Improvement work as the Project Definition Report determined the potential for encountering intact archaeological sites was low and the level of effort required to meet *Heritage Conservation Act* requirements was not anticipated. However, the cost of this amendment can be accommodated within the updated budget for the Program. The NLWWTP Expansion Program is a growth project eligible to be primarily funded by Development Cost Charges. With this amendment the total potential contract value will be \$45,250,589.14, which includes both Phase A & Phase B.

The GVS&DD 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 delays in completing the excavation work and associated archaeological monitoring, resulting in escalation costs for the Program. There is a shortage of qualified archaeologists in the Province and the archaeological consultant has been hiring and ramping up staff to support this work.

CONCLUSION

Proposed contract amendment to Contract No. PC19-1709 – Northwest Langley Wastewater Treatment Plant Ground Improvements and Preload Project, in the amount of up to \$10,238,205.25 (exclusive of taxes), will allow Pomerleau to continue providing construction services to complete excavation work across the entire Northwest Langley site. The archaeological findings are expected to significantly delay the completion of the NLWWTP. Award of this contract amendment will allow work to proceed without further delay to the construction of the stone columns and treatment plant.

Reference

[Northwest Langley Wastewater Treatment Plant Expansion Program – Ground Improvements and Preload Project Update](#), report dated February 18, 2022

53291425

To: Liquid Waste Committee

From: Roy Moulder, Director Procurement, Procurement and Real Estate Services
Joan Liu, Division Manager, Collection Systems, Engineering Design and Construction,
Liquid Waste Services

Date: September 27, 2022 Meeting Date: October 5, 2022

Subject: **Award of a Contract Resulting from Request for Proposal No. 21-405: Construction of South Surrey Interceptor No. 2, Johnston Road Section Phase 3 – Open Cut Segments**

RECOMMENDATION

That the GVS&DD Board:

- a) approve award of a contract in the amount of \$9,452,661 (exclusive of taxes) to NorLand Limited, resulting from Request for Proposal No. 21-405: Construction of South Surrey Interceptor No. 2, Johnston Road Section Phase 3 – Open Cut Segments, 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

The South Surrey Interceptor is a GVS&DD sanitary sewer that collects sewage from South Surrey, Delta, White Rock and the City and Township of Langley and conveys it to the Annacis Island Wastewater Treatment Plant. The new South Surrey Interceptor No. 2 Johnston Road Section is being constructed to address capacity issue.

A Request for Proposals No. 21-405 was issued in July 2022 for Construction of South Surrey Interceptor No. 2, Johnston Road Section Phase 3 – Open Cut Segments located at 153A Street and Highway 10. NorLand Limited (Norland) was identified as the highest ranked proponent. They have a comprehensive work plan and methodology, and a highly qualified team that offers best value to the organization. As such, it is recommended that the GVS&DD Board authorize the award of a Contract for Construction of South Surrey Interceptor No. 2, Johnston Road Section Phase 3 – Open Cut Segments in an amount of \$9,452,661 (exclusive of taxes) to NorLand.

PURPOSE

This report is to advise the GVS&DD Board of the results of the Request for Proposals No. 21-405: Construction of South Surrey Interceptor No. 2, Johnston Road Section Phase 3 and to recommend award of the contract in the amount of \$9,452,661 (exclusive of taxes) to NorLand.

BACKGROUND

Pursuant to the *GVS&DD Officers and Delegation Bylaw No.284, 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 Board of Directors.

This report is being brought forward to the Liquid Waste Committee to consider a recommendation to the GVS&DD Board to award a contract for construction services related to the South Surrey Interceptor No. 2 Johnston Road Section Phase 3.

PROJECT DESCRIPTION

The South Surrey Interceptor (SSI) is a Greater Vancouver Sewerage & Drainage District (GVS&DD) sanitary sewer that collects sewage from South Surrey, Delta, White Rock and the City and Township of Langley and conveys it to the Annacis Island Wastewater Treatment Plant. The approximately 11km long sewer is operating near capacity and a second SSI sewer is being constructed near the existing pipe. The Johnston Road Section of the SSI runs east-west from 153A Street and 56 Avenue to King George Boulevard. The new South Surrey Interceptor No. 2 Johnston Road Section (SSJ2) is being constructed in four phases, starting from the downstream, west end at King George Boulevard. Phases 1 and 2 have been built, and Phase 4 (Junction Chamber) is in the design phase.

A Request for Proposal (RFP) No.21-405 for Construction of South Surrey Interceptor No. 2, Johnston Road Section Phase 3 – Open Cut Segments was issued in July 2022. Recommendation of award of a contract resulting from that RFP is the subject of discussion in this report.

EVALUATION

As a result of Request for Qualifications No. 19-101: South Surrey Interceptor No. 2, Johnston Road Section Phase 3, five (5) experienced contractors were shortlisted and invited to respond to RFP 21-405. The RFP competition closed on August 18, 2022 and two (2) submissions were received, as shown in Table 1. Staff contacted the three firms that did not submit. All three contractors expressed that they did not have capacity, at this time, to undertake the work, had they been selected.

Table 1: Proposal Submission Pricing

Proponent	Proposed Fee (exclusive of taxes)
NorLand Limited	\$9,452,661.00
JJM Construction Ltd.	\$9,048,290.00

Proposals were evaluated based on a weighting of 65% technical and 35% financial criteria. The technical component of the proposals was evaluated by staff within the Liquid Waste Department and supporting external consultants while the financial component was evaluated by staff within the Procurement Division.

The technical criteria consisted of:

- Staff qualifications and experience
- Project methodology and work plan, and
- Project management

NorLand Limited's submission demonstrates a good understanding of the project scope and key issues, and it includes a well thought-out and detailed methodology with a highly qualified team and subcontractors.

As is allowed for in the competition documents, negotiations were conducted with NorLand Limited, as the highest ranked proponent. The negotiations confirmed shoring methodology, groundwater and contaminated soil management and construction schedule. The contract value after negotiations remains at \$9,452,661 (exclusive of taxes).

ALTERNATIVES

1. That the GVS&DD Board:
 - a) approve award of a contract in the amount of \$9,452,661 (exclusive of taxes) to NorLand Limited, resulting from Request for Proposal No. 21-405: Construction of South Surrey Interceptor No. 2, Johnston Road Section Phase 3 – Open Cut Segments, 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 award should proceed.
2. That the GVS&DD Board terminate Request for Proposal No.21-405: Construction of South Surrey Interceptor No. 2, Johnston Road Section Phase 3 – Open Cut Segments and direct staff to report back to the GVS&DD Board with options for an alternate course of action.

FINANCIAL IMPLICATIONS

If the GVS&DD Board approves Alternative 1, a contract will be awarded to NorLand Limited for an amount of \$9,452,661 (exclusive of taxes) to complete the Johnston Road Phase 3 Section. This amount is within the budget allocated for this project.

The GVS&DD Board has the choice not to proceed with Alternative 1, but staff will need further direction in relation to completion of the project. Alternative 2 will result in a delay in construction of the South Surrey Interceptor No. 2, Johnston Road Section, which would potentially result in damage to the environment due to sanitary sewer overflows and incur higher construction costs in the future.

CONCLUSION

Request for Proposal No. 21-405 was issued in July 2022 for Construction of South Surrey Interceptor No. 2, Johnston Road Section Phase 3 – Open Cut Segments and NorLand Limited was identified as the highest ranked proponent. Based on the evaluations of the proposals, it is recommended that the GVS&DD Board authorize award of a contract resulting from RFP 21-405 for the Construction of South Surrey Interceptor No. 2, Johnston Road Section Phase 3 – Open Cut Segments in an amount of \$9,452,661 (exclusive of taxes), to NorLand Limited and authorize the Commissioner and the Corporate Officer to execute the required documentation.

Attachment

South Surrey Interceptor No. 2, Johnston Road Section Phase 3 Project location and alignment of sewers.

55052843

FIGURE 1 – PROJECT LOCATION

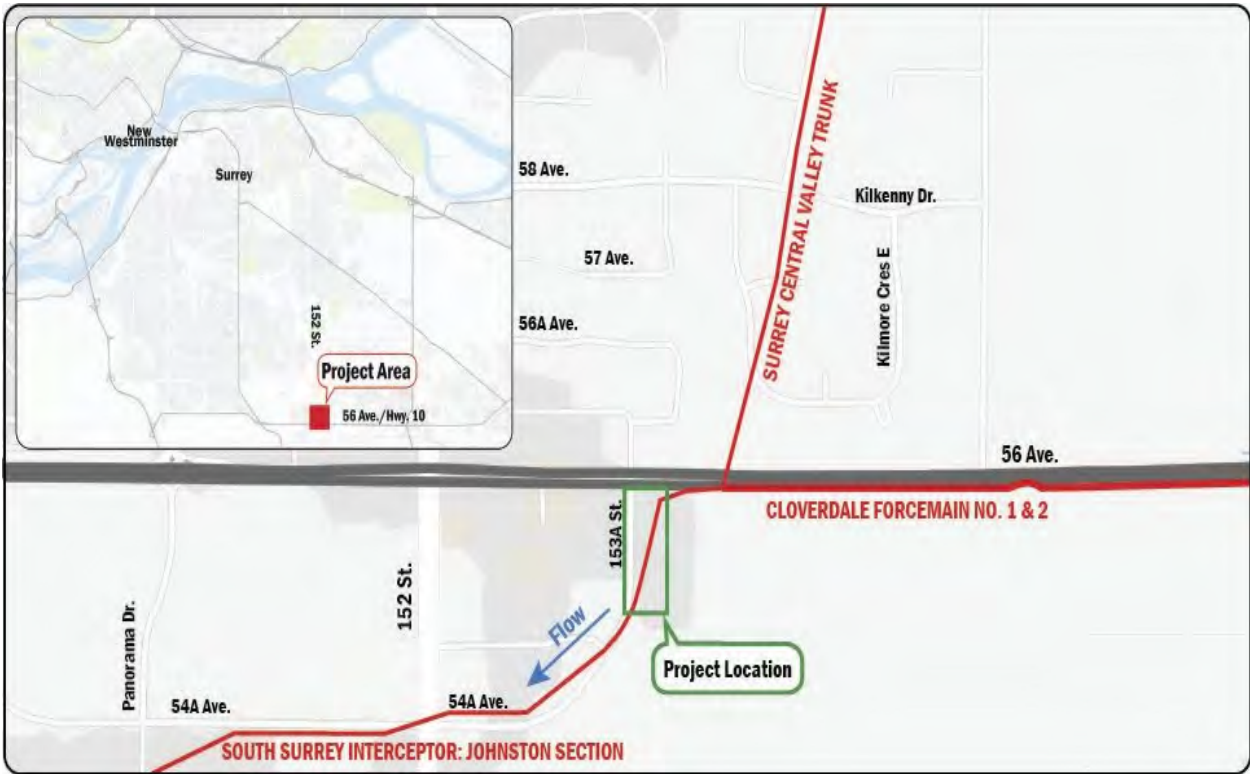
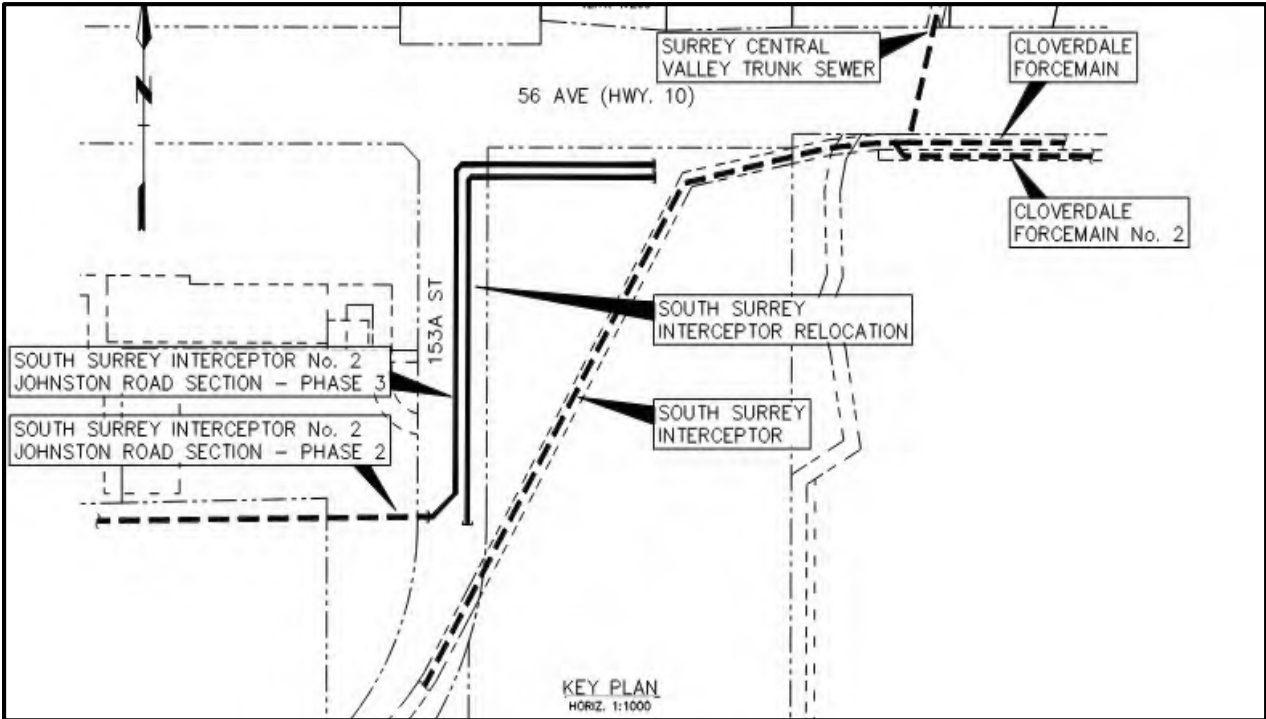


FIGURE 2 – ALIGNMENT OF MV SEWERS



To: Liquid Waste Committee

From: Roy Moulder, Director Procurement, Procurement and Real Estate Services
Joan Liu, Division Manager, Collection Systems, Engineering Design and Construction,
Liquid Waste Services

Date: September 28, 2022 Meeting Date: October 5, 2022

Subject: **Award of a Contract Resulting from Request for Proposal No. 22-007: Construction of Gilbert Trunk Sewer No.2 Gilbert Road Central Section**

RECOMMENDATION

That the GVS&DD Board:

- a) approve award of a contract in the amount of \$44,333,000 (exclusive of taxes) to BD Hall Constructors Corporation, resulting from Request for Proposal No. 22-007: Construction of Gilbert Trunk Sewer No.2 Gilbert Road Central Section, 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

The 10km long Gilbert Trunk Sewer that services the majority of the City of Richmond is in a state of corrosion and in need of repair, and Phase 3 (Central Section) is ready for construction to address the poor pipe condition and provide additional capacity.

A Request for Proposals No. 22-007 was issued in June 2022 for construction of the Gilbert Trunk Sewer No.2 Gilbert Road Central Section. BD Hall Constructors Corporation was identified as the highest ranked proponent providing the best overall value and proposing the lowest fee for the scope of work. It is recommended that the GVS&DD Board authorize the award of a Contract for Construction of the Gilbert Trunk Sewer No.2 Gilbert Road Central Section in an amount of \$44,333,000 (exclusive of taxes) to BD Hall Constructors Corporation.

PURPOSE

This report is to advise the GVS&DD Board of the results of the Request for Proposals No. 22-007: Construction of Gilbert Trunk Sewer No.2 Gilbert Road Central Section and to recommend award of the contract in the amount of \$44,333,000 (exclusive of taxes) to BD Hall Constructors Corporation.

BACKGROUND

Pursuant to the *GVS&DD Officers and Delegation Bylaw No.284, 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 Board of Directors.

This report is being brought forward to the Liquid Waste Committee to consider a recommendation the GVS&DD Board to award a contract for construction services related to the Gilbert Trunk Sewer No. 2 – Gilbert Road Central Section.

PROJECT DESCRIPTION

The 10km long Gilbert Trunk Sewer (GTS) that services the majority of the City of Richmond is in a state of corrosion and in need of repair. A high level of maintenance is also required to address significant build-up of grease and dirt, which reduces pipe capacity. In order to facilitate future repairs and more efficient maintenance and meet the long term capacity need in the City of Richmond, it is necessary to construct the Gilbert Trunk Sewer No.2 (GTS2).

The GTS2 project was divided into four phases. The construction of Phases 1 and 2 is complete, and both phases are now in service. The design of the Phases 3 and 4 (Central and South Sections respectively) is complete, and Phases 3 and 4 are ready for construction. Award of a contract for Construction of Phase 4 (the South Section) was approved by the GVS&DD Board at its July 28, 2022 meeting.

A Request for Proposal (RFP) No.22-007 for Construction of Gilbert Trunk Sewer No.2 Gilbert Road Central Section (Phase 3) was issued in June 2022. Recommendation of award of a contract resulting from that RFP is the subject of discussion in this report.

EVALUATION

As a result of Request for Qualifications No. 21-244: Construction of the Gilbert Trunk Sewer No.2 (Central and South Sections) five (5) experienced contractors were shortlisted and invited to respond to RFP No. 22-007. The RFP competition closed on August 5, 2022 and three (3) submissions were received, as shown in Table 1. Staff contacted the two shortlisted firms that did not submit. In both cases, the contractors expressed capacity challenges preventing them undertaking the work, had they been selected.

Table 1: Proposal Submission Pricing

Proponent	Proposed Fee (exclusive of taxes)
BD Hall Constructors Corporation	\$44,333,000
Clearway Construction Inc.	\$46,222,000
Jacob Brothers Construction Inc.	\$58,905,000

Proposals were evaluated based on a weighting of 50% technical and 50% financial criteria. The technical component of the proposals was evaluated by staff within the Liquid Waste Department and supporting external consultants while the financial component was evaluated by staff within the Procurement Division.

BD Hall Constructors Corporation's (BD Hall) submission illustrated strong experience of working in similar conditions, including completion of a core construction program at the Vancouver International Airport.

As is allowed for in the competition documents, negotiations were conducted with BD Hall, as the highest ranked proponent. The negotiations confirmed shoring and settlement estimates and handling and payment of chloride contaminated material. The contract value after negotiations remains at \$44,333,000 (exclusive of taxes).

ALTERNATIVES

1. That the GVS&DD Board:
 - a) approve award of a contract in the amount of \$44,333,000 (exclusive of taxes) to BD Hall Constructors Corporation, resulting from Request for Proposal No. 22-007: Construction of Gilbert Trunk Sewer No.2 Gilbert Road Central Section, 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 award should proceed.
2. That the GVS&DD Board terminate Request for Proposal No.22-007: Construction of Gilbert Trunk Sewer No.2 Gilbert Road Central Section and direct staff to report back to the GVS&DD Board with options for an alternate course of action.

FINANCIAL IMPLICATIONS

If the GVS&DD Board approves Alternative 1, a contract will be awarded to BD Hall for an amount of up to \$44,333,000 (exclusive of taxes) to complete the Central Section. This amount is within the budget allocated for this project.

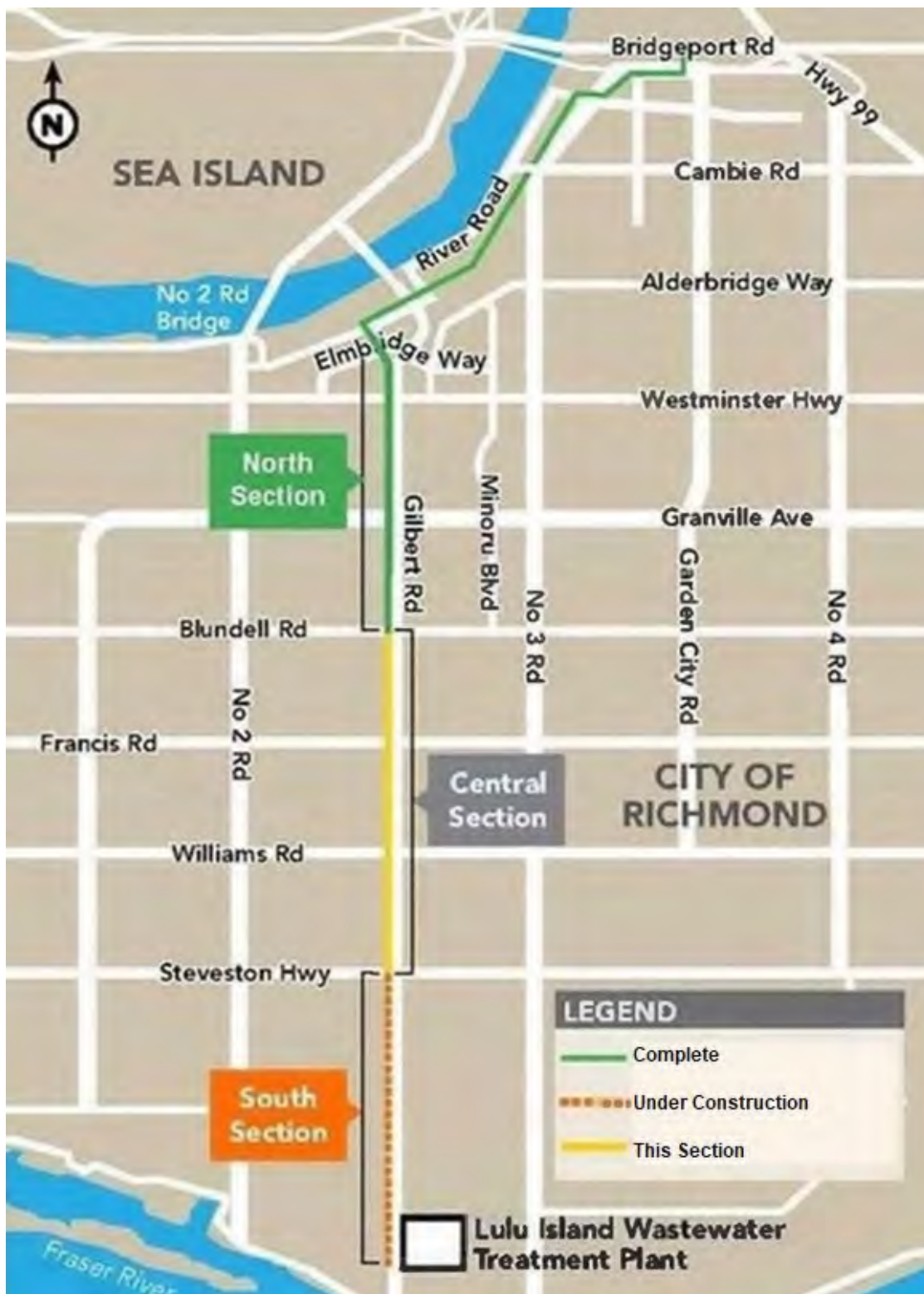
The GVS&DD Board has the choice not to proceed with Alternative 1, but staff will need further direction in relation to completion of the project. Alternative 2 will result in a delay in construction of the GTS2 Central Section which would potentially result in damage to the environment due to sanitary sewer overflows and incur higher construction costs in the future.

CONCLUSION

Request for Proposals No. 22-007 was issued in June 2022 for Construction of Gilbert Trunk Sewer No.2 Gilbert Road Central Section and BD Hall Constructors Corporation was identified as the highest ranked proponent offering the lowest fee for the scope of work. Based on the evaluations of the proposals, it is recommended that the GVS&DD Board authorize award of a contract resulting from RFP 22-007 for the Construction of Gilbert Trunk Sewer No.2 Gilbert Road Central Section in an amount of \$44,333,000 (exclusive of taxes), to BD Hall Constructors Corporation and authorize the Commissioner and the Corporate Officer to execute the required documentation.

Attachment

Gilbert Road Sewer Construction Phases



To: Liquid Waste Committee

From: Roy Moulder, Director, Procurement, Procurement and Real Estate Services
Joan Liu, Division Manager, Collection Systems, Engineering Design and Construction,
Liquid Waste Services

Date: September 27, 2022 Meeting Date: October 5, 2022

Subject: **Award of a Contract Resulting from Invitation to Tender No. 22-256: Construction Services - Upgrades of Two Gleneagles Pump Stations - Gallagher and Kensington**

RECOMMENDATION

That the GVS&DD Board:

- a) approve award of a contract in the amount of up to \$13,967,754.75 (exclusive of taxes) to Industra Construction Corp., resulting from Invitation to Tender No. 22-256: Construction Services – Upgrades of Two Gleneagles Pump Stations – Gallagher and Kensington, 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

Invitation to Tender No. 22-256 was issued in July 2022 for construction upgrades to two Gleneagles Pump Stations, the Gallagher Place Pump Station and the Kensington Crescent Pump Station, located in the District of West Vancouver. Industra Construction Corp. was the only submission. It is recommended that the GVS&DD Board approve the award of a contract in the amount of up to \$13,967,754.75 (exclusive of taxes) to Industra Construction Corp.

PURPOSE

This report is to advise the GVS&DD Board of the results of Invitation to Tender (ITT) No. 22-256: Construction Services – Upgrades of Two Gleneagles Pump Stations – Gallagher and Kensington and to recommend award of the contract in the amount of \$13,967,754.75 (exclusive of taxes) to Industra Construction Corp (Industra).

BACKGROUND

Pursuant to the *GVS&DD Officers and Delegation Bylaw. No. 284, 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 Board of Directors.

This report is being brought forward to the Liquid Waste Committee to consider a recommendation to the GVS&DD Board to award a contract for construction services related to upgrades at two of the Gleneagles Pump Stations.

PROJECT DESCRIPTION

The Gleneagles Interceptor is an existing wastewater conveyance system consisting of a series of five (5) interconnected pump stations located in the District of West Vancouver originally constructed in the early 1970s. Two of these pump stations, the Gallagher Place Pump Station (also known as Gleneagles 4) and the Kensington Crescent Pump Station (also known as Gleneagles 5), have been prioritized for construction upgrades in order to remain reliable, meet the demands of a growing population, and to improve seismic resiliency. These construction upgrades will include new pumps to increase the installed capacity from 80 HP to 255 HP, new piping and valves, new electrical equipment, and seismic upgrades. The remaining three pump stations are currently in the design phase and due for construction upgrades in the near future.

EVALUATION

As a result of Request for Qualification No. 20-146: Construction Services - Gleneagles Pump Stations 4 and 5 Upgrading Project, four (4) experienced construction contractors were shortlisted and invited to respond to ITT No. 22-256 which was issued on July 21, 2022. As one of the shortlisted, Industra provided multiple reference projects similar in scope and provided highly relevant examples of their experience in key aspects of this project. The competition closed on September 20, 2022 and one (1) submission was received, as shown in Table 1. Staff contacted the three shortlisted firms that did not submit. The general consensus was that they did not have capacity, at this time, to undertake the work, had they been selected.

Table 1: Tender Bid Pricing

Tenderer	Bid Price (exclusive of taxes)
Industra Construction Corp.	\$ 13,967,754.75

ALTERNATIVES

1. That the GVS&DD Board:
 - a) approve award of a contract in the amount of up to \$13,967,754.75 (exclusive of taxes) to Industra Construction Corp., resulting from Invitation to Tender No. 22-256: Construction Services – Upgrades of Two Gleneagles Pump Stations – Gallagher and Kensington, 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 the award should proceed.
2. That the GVS&DD Board terminate Invitation to Tender No. 22-256: Construction Services - Upgrades of Two Gleneagles Pump Stations - Gallagher and Kensington and direct staff to report back to the GVS&DD Board with options for an alternate course of action.

FINANCIAL IMPLICATIONS

If the GVS&DD Board approves Alternative 1, a contract will be awarded to Industra Construction Corp. in the amount of \$13,967,754.75 (exclusive of taxes) to complete construction upgrades to the Gallagher Place Pump Station and the Kensington Crescent Pump Station. This amount is within the budget allocated for this project and below the Engineering Consultant's cost estimate for this work.

The GVS&DD Board has the choice to not proceed with Alternative 1, but staff will need further direction in relation to completion of the project. Alternative 2 will result in a delay to construction. This delay may increase the risk that the existing pump stations become unreliable because the existing equipment is nearing the end of its service life.

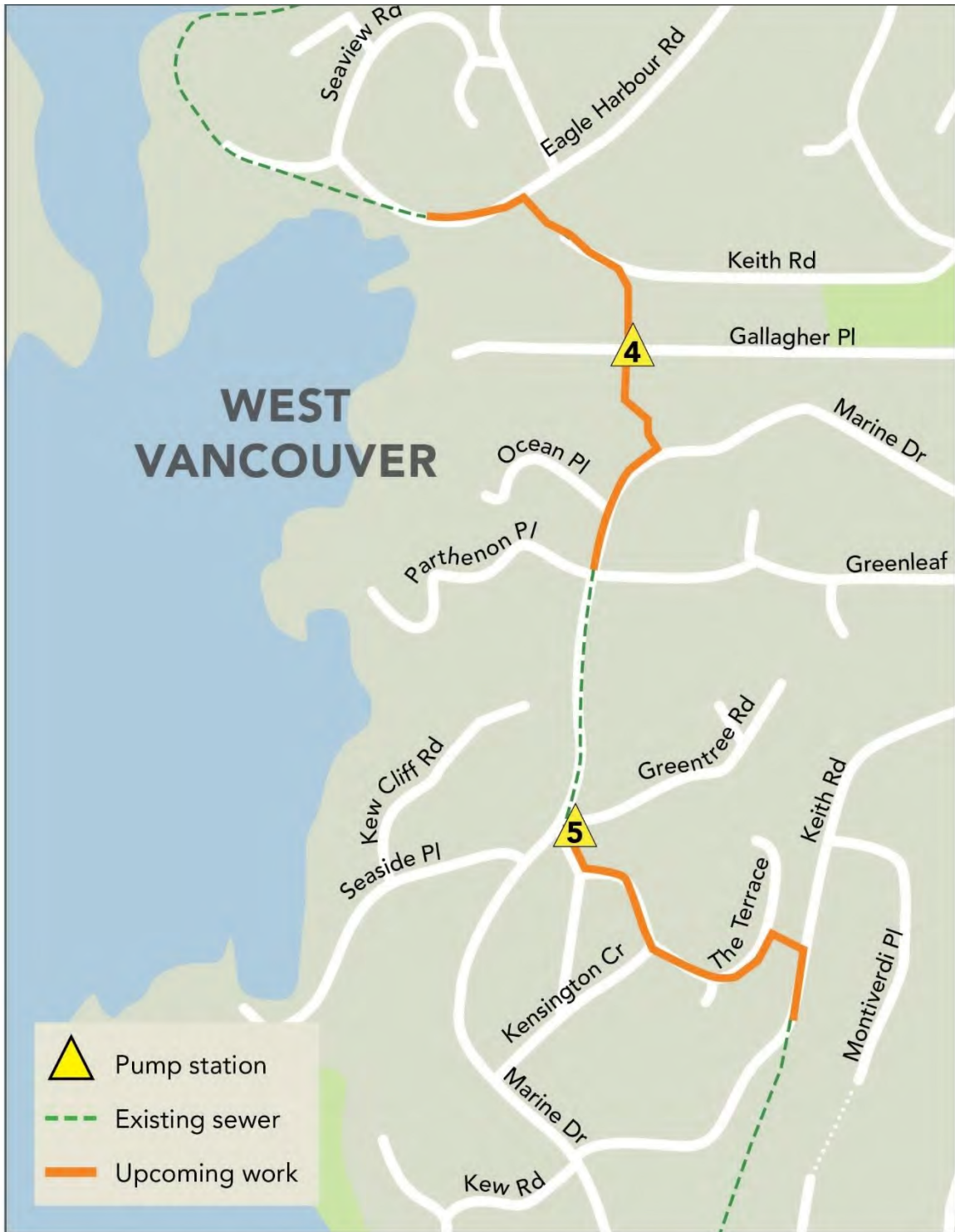
CONCLUSION

Initiation to Tender No. 22-256 was issued on July 21, 2022 to retain the services of a construction contractor to complete construction upgrades to the existing Gallagher Place Pump Station and Kensington Crescent Pump Station. Based on the evaluations of the tenders, it is recommended that the GVS&DD Board authorize the award of a contract resulting from ITT No. 22-256, in the amount of \$13,967,754.75 (exclusive of taxes) to Industra Construction Corp. and authorize the Commissioner and the Corporate Officer to execute the contract.

Attachment

Locations of Gallagher Place Pump Station (Gleneagles 4) and Kensington Crescent Pump Station (Gleneagles 5)

54178630



To: Liquid Waste Committee

From: Peter Navratil, General Manager, Liquid Waste Services

Date: September 28, 2022

Meeting Date: October 5, 2022

Subject: **Manager's Report**

RECOMMENDATION

That the Liquid Waste Committee receive for information the report dated September 28, 2022 titled "Manager's Report".

1. Construction Resumes at North Shore Wastewater Treatment Plant Site

PCL continues to progress early works construction at the North Shore Wastewater Treatment Plant site. Crews have now started new construction on the Influent Pumping Station, in addition to continuing work on existing concrete structures. Construction activity on the site is expected to increase over the fall as crews begin structural work on some building foundations and the Operations and Maintenance building, in addition to construction of a concrete roof for the North Digester.

To reduce parking and traffic impacts on the surrounding community, parking areas for staff and construction personnel are being established on West 1st Street, both east and west of the project site, as well as south of McKeen Avenue. Safe pedestrian access to the site for personnel parking to the west and south of the site has been provided, with the cooperation of Rocky Mountaineer and the District of North Vancouver, via a walkway under the Philip Avenue overpass.

Metro Vancouver is finishing up building condition inspections on participating private properties adjacent to the site, and PCL has completed additional surveys to document the existing condition of the site and surrounding area. Work to obtain outstanding permits, agreements, and approvals required to support the project is ongoing, with close coordination with the District of North Vancouver. The process of securing insurance for project completion is also in progress, and the underwriters visited the site on September 22.

On September 16, staff representatives from Municipal Affairs BC and Infrastructure Canada, the project's Provincial and Federal funding partners, visited the treatment plant site for a project update and site tour.

Metro Vancouver, AECOM, and PCL continue to develop a project execution plan, including a budget and schedule update. Currently, approximately 80 personnel from the design consultant, 75 from the contractor, and many other support personnel are collaborating closely with Metro Vancouver staff to move the project forward. This work includes developing detailed execution plans, schedules, and cost estimates for various aspects of the project, as well as addressing procurement for the major equipment packages. In tandem with this work, Metro Vancouver is meeting with PCL to discuss terms of the construction contract for the completion of the project.

2. Inflow and Infiltration Communications Initiative

A new regional communications initiative to educate residents about inflow and infiltration issues begins on October 17 and will run until November 6. Excess rain and groundwater in the sewer system is an ongoing challenge that contributes to sewer overflows around the region. Much of this excess water comes from pipes on private properties. This initiative aims to make residents and property owners more aware of this problem and the actions they can take to reduce it. Creative materials and messaging emphasize our collective responsibility to keep our wastewater system working well and direct residents to a webpage with specific actions they can take. Tactics include: digital TV and banners, YouTube, and social media (Facebook, Instagram, Twitter). Details and creative materials were shared with members through the REAC Liquid Waste Subcommittee and regional communications channels. This initiative will run again in 2023.

3. Initiative to Reduce Surfactants

A communications initiative to reduce surfactants ran from June 13 to August 31. Many cleaning and personal care products contain surfactants, which can be difficult to fully remove during wastewater treatment and can end up in the ocean. This initiative targeted residents across the region, but focused mainly on North Shore residents, due to higher surfactant levels in that area. Creative materials and messaging highlighted the region's soft water, explaining how residents could use less cleaning product and still get good results. Tactics included a postcard mail-out to North Shore residents, social media, YouTube, digital banners, and Metro Vancouver social media channels. Analytics show that these tactics generally performed well, reaching 430,000 people and generating 3.4 million impressions and 700,000 video views. Over 2,600 people visited the webpage for more information. Issues experienced in 2021 improved in 2022. As many factors influence wastewater composition, more data will be needed to determine trends over time. This initiative will run again in 2023 and will likely use similar timing, approach, and creative materials.

4. Wipe It, Green Bin It Campaign

The Wipe It, Green Bin It campaign is currently in market, running from September 26 to November 6. The campaign asks residents to dispose of fats, oil and grease (FOG) into their green bin and not down their sink, to reduce buildup of FOG in the sewer system. As with previous years, the campaign targets residents around Thanksgiving when they are preparing heavier, holiday-oriented meals. Creative materials highlight various forms of FOG and raise awareness of the impacts of lesser known problem foods, liked dairy products. The target audience continues to be all Metro Vancouver residents (18+), with a key segment being adults aged 25-54. Tactics will include: YouTube, Facebook, Instagram, Pinterest, digital TV, online banners, a television PSA, and geo-targeted mobile ads (new for 2022). All campaign messaging directs residents to wipeitgreenbinit.ca. The campaign will run again in 2023.

5. Liquid Waste Committee 2022 Work Plan

The updated 2022 Work Plan (Attachment) shows the year end status of the Committee's key priorities.

Attachment

Liquid Waste Committee 2022 Work Plan

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Liquid Waste Committee 2022 Work Plan

Report Date: October 5, 2022

Priorities	
1st Quarter	Status
2021 Microfibres “The Ocean Thanks You” Campaign Results	Complete
2021 Fats, Oil and Grease Campaign Results	Complete
Northwest Langley Wastewater Treatment Plant Project Update	Complete
North Shore Wastewater Treatment Plant Project Update	Complete
Development Cost Charge Review Process and Rate Amending Bylaw	Complete
Iona Island Wastewater Treatment Plant Projects - Project Definition Engagement Results	Complete
Iona Island Wastewater Treatment Plant Projects - Project Definition and Conceptual Design	Complete
GVS&DD Trucked Liquid Waste Bylaw Amendment	Complete
2022 Liquid Waste - Sustainability Innovation Fund Applications	Complete
Municipal Requests for Sewerage Area Boundary Amendments (as applicable)	Complete
Utility Policies (as applicable)	Complete
Contract Approvals – Contracts > \$5M (as applicable)	Complete
Project Delivery Capital Portfolio Update	Complete
Sewer and Effluent Heat Recovery Bylaw	Complete
Iona Island Land Tenure and License Agreements	Complete
Liquid Waste State of Assets Report	Complete
2nd Quarter	
Liquid Waste Services Capital Program Expenditures Update as at Dec 31, 2021	Complete
Integrated Liquid Waste and Resource Management Plan: Report on Phase 1	Complete
LWS Environmental Management System Policy	Complete
2022 Update on Liquid Waste Sustainability Innovation Fund Projects	Complete
2021 GVS&DD Environmental Management and Quality Control Annual Report	Complete
Liquid Waste Services Environmental Risk Management Report	Complete
Municipal Requests for Sewerage Area Boundary Amendments (as applicable)	Complete
Utility Policies (as applicable)	Complete
Contract Approvals – Contracts > \$5M (as applicable)	Complete
3rd Quarter	
Liquid Waste Services Capital Program Expenditures Update as at April 30, 2022	Complete
Liquid Waste Heat Recovery Policy	Complete
Sustainability Innovation Fund Project Update	Complete
Proposed Capital Investment and Carbon Accounting Processes For Sewer Heat Recovery Projects	Complete
2022 Unflushables Campaign Results	Complete
Municipal Requests for Sewerage Area Boundary Amendments (as applicable)	Complete
Utility Policies (as applicable)	Complete
Contract Approvals – Contracts > \$5M (as applicable)	Complete
Northwest Langley Wastewater Treatment Plant Project Design Update	Cancelled
4th Quarter	Status
Liquid Waste Services Capital Program Expenditures Update as at August 31, 2022	Complete
Annual Budget & 5 Year Financial Plan - Liquid Waste	Complete

Municipal Requests for Sewerage Area Boundary Amendments (as applicable)	Complete
Utility Policies (as applicable)	Complete
Contract Approvals – Contracts > \$5M (as applicable)	Complete
Estuary Management Program Update (moved to Mayors Committee)	Cancelled
Annacis Outfall Construction Update	Deferred to 2023
Drainage Areas Facility Policy	Deferred to 2023
Sewage Catchment Area (Rawn) Amendments	Deferred to 2023
Food Sector Bylaw Review	Deferred to 2023