

**METRO VANCOUVER REGIONAL DISTRICT  
LIQUID WASTE COMMITTEE**

**MEETING**

**April 12, 2023**

**1:00 pm**

**Meeting conducted electronically/in-person pursuant to the Procedure Bylaw  
28<sup>th</sup> Floor Committee Room, 4515 Central Boulevard, Burnaby, British Columbia**

**A G E N D A<sup>1</sup>**

**1. ADOPTION OF THE AGENDA**

**1.1 April 12, 2023 Meeting Agenda**

That the Liquid Waste Committee adopt the agenda for its meeting scheduled for April 12, 2023 as circulated.

**2. ADOPTION OF THE MINUTES**

**2.1 March 15, 2023 Meeting Minutes**

That the Liquid Waste Committee adopt the minutes of its meeting held March 15, 2023 as circulated.

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**3. DELEGATIONS**

**4. INVITED PRESENTATIONS**

**5. REPORTS FROM COMMITTEE OR STAFF**

**5.1 Annacis Wastewater Treatment Plant Outfall Diffuser Arm Installation**

[Annacis Wastewater Treatment Plant Outfall Diffuser Arm Installation](#) (Video)

Designated Speaker: Peter Navratil, General Manager, Liquid Waste Services

**5.2 Liquid Waste Services Capital Program Expenditure Update as at December 31, 2022**

That the GVS&DD Board receive for information the report dated March 29, 2023, titled "Liquid Waste Services Capital Program Expenditure Update as at December 31, 2022".

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<sup>1</sup> Note: Recommendation is shown under each item, where applicable.

**5.3 Award of Contract Resulting from Request for Proposal No. 22-318 Supply and Delivery of Dry Polymer to Wastewater Treatment Plants**

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That the GVS&DD Board:

- a) approve the award of a contract in the amount of up to \$7,956,000 (exclusive of taxes) to Solenis LLC for supply and delivery of Dry Polymer to Wastewater Treatment Plants, resulting from Request for Proposal No. 22-318; and
- b) authorize the Commissioner and the Corporate Officer to execute the required documentation once the Commissioner is satisfied that the award should proceed.

**5.4 Manager's Report**

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That the Liquid Waste Committee receive for information the report dated April 4, 2023 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.*

**10. ADJOURNMENT/CONCLUSION**

That the Liquid Waste Committee adjourn/conclude its meeting of April 12, 2023.

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Membership:

Hurley, Mike (C) – Burnaby

Knight, Megan (VC) – White Rock

Albrecht, Paul – Langley City

Cassidy, Christine – West Vancouver

Ferguson, Steve – Langley Township

Johnstone, Patrick – New Westminister

Kim, Steve – Coquitlam

Kirby-Yung, Sarah – Vancouver

Kooner, Pardeep – Surrey

Little, Mike – North Vancouver District

Loo, Alexa – Richmond

West, Brad – Port Coquitlam

Yousef, Ahmed – Maple Ridge

**METRO VANCOUVER REGIONAL DISTRICT  
LIQUID WASTE COMMITTEE**

**2.1**

Minutes of the Regular Meeting of the Metro Vancouver Regional District (MVRD) Liquid Waste Committee held at 1:00 pm on Wednesday, March 15, 2023 in the 28<sup>th</sup> Floor Committee Room, 4515 Central Boulevard, Burnaby British Columbia.

**MEMBERS PRESENT:**

Chair, Mayor Mike Hurley, Burnaby  
Vice Chair, Mayor Megan Knight\*, White Rock  
Councillor Paul Albrecht, Langley City  
Councillor Steve Ferguson, Langley Township  
Mayor Patrick Johnstone, New Westminster  
Councillor Steve Kim, Coquitlam  
Councillor Sarah Kirby-Yung\*, Vancouver  
Councillor Pardeep Kooner, Surrey  
Mayor Mike Little\*, North Vancouver District  
Councillor Alexa Loo\*, Richmond  
Councillor Ahmed Yousef\*, Maple Ridge

**MEMBERS ABSENT:**

Councillor Christine Cassidy, West Vancouver  
Mayor Brad West, Port Coquitlam

**STAFF PRESENT:**

Jerry W. Dobrovlny ‡, Chief Administrative Officer  
Peter Navratil, General Manager, Liquid Waste Services  
Natalia Melnikov, Legislative Services Coordinator, Board and Information Services

**1. ADOPTION OF THE AGENDA**

**1.1 March 15, 2023 Meeting Agenda**

**It was MOVED and SECONDED**

That the Liquid Waste Committee adopt the agenda for its meeting scheduled for March 15, 2023 as circulated.

**CARRIED**

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

‡denotes electronic meeting participation

**2. ADOPTION OF THE MINUTES**

**2.1 February 8, 2023 Meeting Minutes**

**It was MOVED and SECONDED**

That the Liquid Waste Committee adopt the minutes of its meeting held February 8, 2023 as circulated.

**CARRIED**

**Agenda Order Varied**

The order of the agenda was varied to consider a resolution to close the meeting at this point.

**9. RESOLUTION TO CLOSE MEETING**

**It was MOVED and SECONDED**

That the Liquid Waste Committee close its meeting scheduled for February 8, 2023 pursuant to section 226 (1) (a) of the *Local Government Act* and the *Community Charter* provisions as follows:

- 90 (1) A part of the meeting may be closed to the public if the subject matter being considered relates to or is one or more of the following:  
(g) litigation or potential litigation affecting the regional district.

**CARRIED**

**10. ADJOURNMENT/CONCLUSION**

**It was MOVED and SECONDED**

That the Liquid Waste Committee adjourn its regular meeting of March 15, 2023.

**CARRIED**

(Time: 1:01 pm)

**RECONVENE**

The Liquid Waste Committee reconvened its regular meeting of March 15, 2023 at 1:20 pm with the same members being in attendance.

**Agenda Order Resumed**

The order of the agenda resumed with Item 3 being before the Committee at this point.

**3. DELEGATIONS**

No items presented.

**4. INVITED PRESENTATIONS**

No items presented.

## 5. REPORTS FROM COMMITTEE OR STAFF

### 5.1 Appointment of Deputy Sewage Control Manager and Enforcement Officers

Report dated March 8, 2023, from Kathy Preston, Director Environmental Regulation and Enforcement, Parks and Environment, appointing and rescinding appointments of Metro Vancouver and City of Vancouver employees as a Board-designated deputy sewage control manager and officers.

Members were provided a presentation on the Liquid Waste bylaws, outlining roles and responsibilities of the Board and the appointed officers, and the legislative requirements for staff appointments.

Presentation material titled “Metro Vancouver Liquid Waste Regulation – Roles and Responsibilities” is retained with the March 15, 2023 Liquid Waste Committee agenda.

#### **It was MOVED and SECONDED**

That the GVS&DD Board:

- a) pursuant to the *Greater Vancouver Sewerage and Drainage District Sewer Use Bylaw* and the *Environmental Management Act*:
  - i. appoint Metro Vancouver employee Riley Sziklai as a deputy sewage control manager;
  - ii. rescind the appointments of former Metro Vancouver employees Doreen Cheng, Manjit Dhillon, Marlene Fuhrmann, and Peter Hagens as officers; and
  - iii. appoint Metro Vancouver employees Mosi Aghbolaghy, Michael Goods, Jim Penrose, Jeffery Schmidt and Joanne Tunkiewicz as officers; and
  - iv. appoint City of Vancouver employee Bonny Brokenshire as an officer.
- b) pursuant to section 28 of the *Offence Act* for the purpose of serving summons for alleged violations under the *Greater Vancouver Sewerage and Drainage District Sewer Use Bylaw*:
  - i. rescind the appointments of former Metro Vancouver employees Doreen Cheng, Manjit Dhillon, Marlene Fuhrmann, and Peter Hagens; and
  - ii. appoint Metro Vancouver employees Jeffery Schmidt and Joanne Tunkiewicz; and
  - iii. appoint City of Vancouver employee Bonny Brokenshire.

**CARRIED**

### 5.2 2022 “Our Ocean Thanks You” Campaign Results

Report dated January 17, 2023, from Larina Lopez, Division Manager, and Carol Nicolls, Communications Specialist, Corporate Communications, External Relations, providing the Liquid Waste Committee with an update on the 2022 regional “Our Ocean Thanks You” campaign to reduce microfibres generated through laundry.

Members were provided a presentation on the 2022 “Our Ocean Thanks You” Campaign results, outlining the campaign’s tactics and results, and providing an overview of the 2023 campaign plans.

Presentation material titled “2022 “Our Ocean Thanks You” Campaign Results” is retained with the March 15, 2023 Liquid Waste Committee agenda.

**It was MOVED and SECONDED**

That the Liquid Waste Committee receive for information the report dated January 17, 2023 titled “2022 ‘Our Ocean Thanks You’ Campaign Results”.

**CARRIED**

**5.3 Greater Vancouver Sewerage and Drainage District Cost Apportionment Amendment Bylaw No. 362, 2023 - Wet Weather Pricing**

Report dated March 9, 2023, from Rick Gallilee, Director, Support Services and Strategic Initiatives, Liquid Waste Services, providing the Liquid Waste Committee for the GVS&DD Board’s consideration, with an update on the proposed amendments to the *Greater Vancouver Sewerage and Drainage District Cost Apportionment Bylaw 283, 2014*, to implement the wet weather pricing strategy as directed by the Board on February 24, 2023.

**It was MOVED and SECONDED**

That the GVS&DD Board:

- a) approve the amendments to the *Greater Vancouver Sewerage and Drainage District Cost Apportionment Bylaw No. 283, 2014* as presented in the Attachment to the report dated March 9, 2023 titled “Greater Vancouver Sewerage and Drainage District Cost Apportionment Amendment Bylaw No. 362, 2023 - Wet Weather Pricing”;
- b) give first, second and third reading to *Greater Vancouver Sewerage and Drainage District Cost Apportionment Amendment Bylaw No. 362, 2023*; and
- c) pass and finally adopt *Greater Vancouver Sewerage and Drainage District Cost Apportionment Amendment Bylaw No. 362, 2023*.

**CARRIED**

**5.4 Award of Contract Resulting from Request for Proposal No. 22-009: Supply and Installation of North Road Trunk Sewer No. 2 - Phase 2 Lougheed Highway to Clarke Road**

Report dated March 8, 2023, from George Kavouras, Director, Procurement, Procurement and Real Estate Services, and Colin Meldrum, Director Engineering Design and Construction, Liquid Waste Services, advising the Liquid Waste Committee of the results of RFP No. 22-009: Supply and Installation of North Road Trunk Sewer No. 2 Phase 2 Lougheed Highway to Clarke Road and to recommend award of the contract in an amount of \$7,947,758.20 to Clearway Construction Inc., for the GVS&DD Board’s consideration.

Members were provided a presentation on the North Road Sewer Project update, outlining the project's phases and the Request for Proposal competition process.

Presentation material titled "Award of a Contract Resulting from Request for Proposal No. 22-009 - Supply and Installation of North Road Trunk Sewer No. 2 - Phase 2 Lougheed Highway to Clarke Road" is retained with the March 15, 2023 Liquid Waste Committee agenda.

**It was MOVED and SECONDED**

That the GVS&DD Board:

- a) approve the award of a contract for an amount of \$7,947,758.20 (exclusive of taxes) to Clearway Construction Inc., resulting from Request for Proposal No. 22-009: Supply and Installation of North Road Trunk Sewer No. 2 Phase 2 Lougheed Highway to Clarke Road, 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.

**CARRIED**

**5.5 Award of Phase C3, Engineering Construction Services for RFP 14-230 for Installation of Gilbert Trunk Sewer No.2 Central Section**

Report dated March 8, 2023, from George Kavouras, Director, Procurement, Procurement and Real Estate Services, and Colin Meldrum, Director Engineering Design and Construction, Liquid Waste Services, seeking the GVS&DD Board's authorization to award Phase C3, Engineering Construction Services, in an amount of up to \$2,997,555 (exclusive of taxes), to the Phase A and B consultant, AECOM Canada Ltd. to support the Installation of the GTS2 Central Section.

**It was MOVED and SECONDED**

That the GVS&DD Board:

- a) approve the award of Phase C3, Engineering Construction Services, for an amount up to \$2,997,555 (exclusive of taxes) to the Phase A and B consultant, AECOM Canada Ltd, for the Installation of Gilbert Trunk Sewer No.2 Central Section, and
- b) authorize the Commissioner and Corporate Officer to execute the required documentation once the Commissioner is satisfied that the award should proceed.

**CARRIED**

**5.6 North Shore Wastewater Treatment Plant Project Early Works Agreement Extension**

Report dated March 3, 2023, from Cheryl Nelms, General Manager, Project Delivery, seeking the GVS&DD Board's authorization for a change order to PCL, the construction manager for the North Shore Wastewater Treatment Plant, for the Pre-Construction Services and Early Works Agreements in the amount of up to \$85,000,000 (exclusive of taxes) to continue early works construction for structures

on the critical path, including continuing with rectification of excessive deficiencies brought on by Project Co's design and construction.

**It was MOVED and SECONDED**

That the GVS&DD Board:

- a) approve a change order to PCL Constructors Westcoast Inc. Pre-Construction Services and Early Works Agreements (PC21-457 and PC22-227) in an amount of up to \$85,000,000 (exclusive of taxes), 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 amendment should proceed.

**CARRIED**

**5.7 Manager's Report**

Report dated March 6, 2023, from Peter Navratil, General Manager, Liquid Waste Services, providing the Liquid Waste Committee with updates on the 2023 Unflushables Campaign.

**Request of Staff**

Staff were requested to report back with an update on our advocacy efforts at the end of the Unflushables campaign.

Cheryl Nelms, General Manager, Project Delivery, provided the Liquid Waste Committee an update on the North Shore Wastewater Treatment Plant and Annacis Island Wastewater Treatment Plant construction projects.

**It was MOVED and SECONDED**

That the Liquid Waste Committee receive for information the report dated March 6, 2023 titled "Manager's Report".

**CARRIED**

**6. INFORMATION ITEMS**

**6.1 2023 Liquid Waste Sustainability Innovation Fund Application**

**6.2 Metro 2050 Climate Policy Enhancement Study – Project Initiation**

**6.3 Climate 2050 Land Use and Urban Form Roadmap – Scope of Work and Project Status**

**7. OTHER BUSINESS**

No items presented.

**8. BUSINESS ARISING FROM DELEGATIONS**

No items presented.



**9. RESOLUTION TO CLOSE MEETING**

This item was previously considered.

**ADJOURNMENT/CONCLUSION**

**It was MOVED and SECONDED**

That the Liquid Waste Committee conclude its meeting of March 15, 2023.

**CARRIED**  
(Time: 1:50 pm)

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Natalia Melnikov,  
Legislative Services Coordinator

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Mike Hurley,  
Chair

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To: Liquid Waste Committee

From: Colin Meldrum, Director, Engineering, Design & Construction, Liquid Waste Services

Date: March 29, 2023 Meeting Date: April 12, 2023

Subject: **Liquid Waste Services Capital Program Expenditure Update as at December 31, 2022**

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### **RECOMMENDATION**

That the GVS&DD Board receive for information the report dated March 29, 2023, titled “Liquid Waste Services Capital Program Expenditure Update as at December 31, 2022”.

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### **EXECUTIVE SUMMARY**

The capital expenditure reporting process as approved by the GVS&DD Board provides for regular status reports on capital expenditures three times per year. This is the year-end report for 2022 which includes the overall capital program for Liquid Waste Services with a multi-year view of capital projects, and the actual capital spending for the 2022 fiscal year to December 31, 2022 in comparison to the annual Capital Cash Flow. As of December 31, the 2022, capital expenditures for Liquid Waste Services are \$400.4 million, compared to an annual Capital Cash Flow of \$780.5 million. This shortfall is primarily due to limited market capacity for projects and construction delays as well as issues on the North Shore Secondary Wastewater Treatment Plant.

Forecasted expenditures for the current Liquid Waste Services capital program generally remain within the annual Capital Cash Flow planned for 2022.

### **PURPOSE**

To report on the status of the Liquid Waste Services’ capital program and financial performance for the 2022 fiscal year to December 31, 2022.

### **BACKGROUND**

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

The series of three reports for 2022 looks at both the overall capital program for Liquid Waste Services with a multi-year view of capital projects and the actual capital spending for the 2022 fiscal year to December 31, 2022 in comparison to the annual Capital Cash Flow.

### **2022 CAPITAL EXPENDITURES**

#### **Capital Program Funding**

The capital spending for Liquid Waste Services is funded through the Liquid Waste Operating Budget by a combination of contribution to capital (pay-as-you-go funding) and debt service costs

(principal and interest payments) which is generated annually from the regional ratepayers. As a result, the annual impact on the ratepayers is significantly less than the level of budgeted capital expenditures.

**Overall Capital Program**

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

It is expected that the capital spending on the Liquid Waste Services capital projects completed in 2022 or ongoing at some point in 2022 will be under the estimated total project cost by approximately \$41.3 million, or 0.2% of total estimated cost. These estimated costs were generally adjusted as part of the 2023 – 2027 Financial Plan and will be further adjusted through BY2024 capital planning process. For the most part, all of the projects include contingencies in their budgets. Often, these amounts are not fully expended, and will result in projects being completed under budget.

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

**2022 Capital Program Progress**

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

Table 1 provides a summary of the 2022 actual capital spending to December 31, 2022 compared to the total annual Capital Cash Flow. As of December 31, 2022, capital expenditures for Liquid Waste Services were \$400.4 million compared to the annual Capital Cash Flow of \$780.5 million. These projects are managed either by the Project Delivery Department or internally by the Liquid Waste Services Department.

**Table 1 – December 2022 Capital Spending Summary**

<b>Liquid Waste Total</b>	<b>2022 Cash Flow</b>	<b>Actual Expenditures to December 31, 2022</b>	<b>% of 2022 Cash Flow</b>
Collections	\$ 187,337,000	\$ 71,476,489	38%
Treatment Plants	593,115,000	328,907,493	55%
	<b>\$ 780,452,000</b>	<b>\$ 400,383,982</b>	<b>51%</b>

The underspend is due to a variety of factors, including delays in tendering works or initiating construction, Covid-19 induced delays, protracted property negotiations and permitting delays. Specifically, the following projects have had expenditures delayed to 2022 or later due to tendering issues, resolving permits and property issues, and delays by outside parties:

- Burnaby Lake North Interceptor – Winston Section
- Gilbert Road Trunk Sewer – South and Central Sections
- Utility Relocations for Pattullo Bridge, Harbour East and West Interceptor, Fraser Surrey Docks and the Broadway Subway
- Northwest Langley WWTP Program
- Iona Island Secondary Upgrade

In addition, the North Shore Wastewater Treatment Plant project was previously forecasted to have a milestone payment in 2022, however the contract has been terminated.

### **Capital Program Impacts from COVID-19**

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

Overall, the impact to the Liquid Waste Service's capital program has largely been schedule related, with few notable impacts to project expenditures confirmed to date. Staff are monitoring impacts on their projects regularly.

### **ALTERNATIVES**

This is an information report. No alternatives are presented.

### **FINANCIAL IMPLICATIONS**

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

### **CONCLUSION**

This is the year-end report on capital expenditures for 2022. Although the 2022 Liquid Waste Services capital expenditures are less than the planned amounts, the variance is generally a result of cash flow timing, with a number of projects having expenditures deferred to future years. Any surplus resulting from a 2022 underspend will be used to directly fund capital in 2023 and avoid future borrowing.

### **Attachments**

- 1A. Capital Project Update – Liquid Waste Services
- 1B. Capital Project Update – Liquid Waste – Project Delivery
2. Liquid Waste Services Capital Project Status Information

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Project Name	Primary Driver	Project Location	Years					Approved Capital Budget	Current Estimated Total Project Cost	% Complete	Comment
			2022-2026 Capital Plan								
			2022	2023	2024	2025	2026				
<b>Collections</b>											
8th Avenue Interceptor Air Treatment Facilities	Upgrade	Vancouver						500,000	14,200,000	3%	
Albert Street Trunk Sewer	Growth	Port Moody						10,250,000	10,250,000	98%	Project in service
Big Bend Forcemain - Gate Replacement	Maintenance	Richmond						180,000	2,700,000	3%	
Burnaby Lake North Interceptor Cariboo Section	Growth	Burnaby						-	41,000,000	0%	Project deferred to 2024 to suit resourcing and coordinate with other works.
Burnaby Lake North Interceptor Winston Section	Growth	Burnaby						116,950,000	110,000,000	29%	Construction underway, project expected to be completed under budget
Burnaby South Slope Interceptor	Growth	Burnaby						500,000	22,700,000	0%	Project deferred to 2023 to enable better scope definition
Cloverdale Pump Station Capacity Upgrade	Growth	Surrey						700,000	36,400,000	1%	Deferred to better define scope of upgrades
Cloverdale Trunk Sewer Capacity Upgrade	Growth	Surrey						1,200,000	29,000,000	1%	Project deferred to 2023 to enable better scope definition. Procurement initiated for project initiation work
Combined Sewer Overflow Sampling Station Enhancements	Maintenance	Regional						1,900,000	1,600,000	42%	Project expected to be completed under budget
Glen Eagles Pump Stations Phase 2	Maintenance	West Vancouver						-	10,000,000	0%	
Crescent Beach FM - Replacement	Maintenance	Surrey						26,820,000	32,000,000	60%	Additional budget and schedule required to address unforeseen ground conditions.
Eagle Creek (Lower Section) Channel Restoration	Resilience	Burnaby						750,000	750,000	0%	
Lozells Sanitary Trunk Golf Course Section	Growth	Burnaby						-	27,650,000	0%	
Manitoba Street Combined Trunk Sewer Separation	Upgrade	Vancouver						-	93,750,000	0%	
EMQC Chemistry Laboratory and Environmental Field Services	Upgrade	Burnaby						3,500,000	31,000,000	0%	
Fraser Sewerage Area Integrated Resource Recovery (IRR) Study	Opportunity	Regional						1,200,000	1,200,000	13%	
Front Street Pressure Sewer Access Hatches Reinforcement	Maintenance	New Westminister						5,000,000	5,000,000	7%	Construction deferred to 2023 to suit work by others
FSA Flow Metering Program	Maintenance	Regional						3,500,000	3,500,000	54%	
FSA River Crossing Scour Protection Program - Phase 1	Maintenance	Regional						4,200,000	4,200,000	0%	Phase 1 Construction delayed to Jan 2023 due to properties and permitting issues.
FSA Sewer Relocations and Protections	Maintenance	Regional						32,750,000	11,700,000	1%	Construction timing depends on third party actions which are delayed. Work was rescope and costs are expected to be lower than previously anticipated.
FSA Statutory Right of Way Acquisitions Phase 1	Maintenance	Delta/Port Moody						35,100,000	35,100,000	31%	For acquisition of rights-of-way as opportunities arise.
Gilbert/Brighthouse Trunk Pressure Sewer	Maintenance	Richmond						169,601,000	192,850,000	38%	Tenders (2) were delayed, but one is now awarded and the other award is in progress. Rehabilitation of the existing sewer will be considered after current construction is complete. This latter item has been budgetted but is not yet approved.
Glen Eagles Forcemain Replacement	Maintenance	WestVancouver						10,234,000	15,850,000	34%	Construction delayed due to properties and permitting issues
Glen Eagles Pump Stations Phase 1	Maintenance	WestVancouver						22,500,000	33,300,000	9%	Tendering was delayed due to properties, but is now proceeding with award in process.
Glenbrook Combined Trunk Kingsway Sanitary Section	Growth	Burnaby						7,200,000	7,200,000	10%	
Harbour Pump Station Discharge Header Repair and Valve Replacements	Maintenance	Vancouver						2,500,000	2,500,000	8%	Design underway. Construction expected in summer 2024.
Harbour Pump Station Power Distribution Equipment Replacement	Maintenance	Vancouver						1,600,000	3,300,000	10%	
Hastings-Cassiar Intake Connection	Growth	Vancouver						2,350,000	4,200,000	24%	Project budget adjusted for BY2023. Project is now substantially complete.
Highbury Interceptor Diversion Junction Chamber Wall Rehabilitation	Maintenance	Vancouver						500,000	6,000,000	0%	Project delayed to coordinate with other work.
Highbury Interceptor North Arm Crossing - Upgrade of Siphons	Resilience	Vancouver						12,500,000	12,500,000	98%	Project substantially complete
Jervis Pump Station 25kV Voltage Conversion	Maintenance	Vancouver						1,300,000	1,300,000	11%	
Kent Pump Station High Voltage Switchgear Replacement	Maintenance	Vancouver						1,150,000	2,000,000	4%	
Surrey Central Valley Capacity Upgrade	Growth	Surrey						-	60,800,000	0%	
Lake City Access and Parking Improvements	Maintenance	Burnaby						2,850,000	3,750,000	0%	



Project Name	Primary Driver	Project Location	Years					Approved Capital Budget	Current Estimated Total Project Cost	% Complete	Comment	
			2022	2023	2024	2025	2026					
2022-2026 Capital Plan												
			2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
LSA Flow Metering Program	Maintenance	Richmond										
Marshend Pump Station	Growth	Burnaby										
New CSO Management Gates for New Westminster Interceptor	Upgrade	New Westminster										
New West Interceptor - Annacis Section 2	Maintenance	Delta										
New West Interceptor Grit Chamber	Maintenance	New Westminster										
New Westminster Interceptor Repair Columbia St. Section	Maintenance	New Westminster										
New Westminster Interceptor West Branch and Columbia Extension Rehabilitation	Maintenance	New Westminster										
North Road Trunk Sewer	Growth	Coquitlam										
North Road Trunk Sewer Phase 2	Growth	Coquitlam										
North Surrey Interceptor - Port Mann Section - Odour Control	Upgrade	Surrey										
North Surrey Interceptor Annieville Channel Crossing Scour Protection	Maintenance	Regional										
North Surrey Interceptor Roebuck Section Rehabilitation - Phase 1	Maintenance	Surrey										
NSA Flow Metering Program	Maintenance	West Vancouver										
NSA Scour Protection Upgrades	Maintenance	Regional										
NSI 104th Ave Extension	Growth	Surrey										
NSI Flow Management	Upgrade	Surrey										
NSI Rehab or Replacement	Maintenance	Surrey										
Ocean Park Trunk Manholes Lining	Maintenance	Surrey										
Ocean Park Trunk Sewer - Air Management Facility	Upgrade	Surrey										
Port Coquitlam Pump Station Refurbishment	Maintenance	Port Coquitlam										
Port Moody Pump Station Capacity Upgrade	Growth	Port Moody										
Port Moody South Interceptor Capacity Upgrade	Growth	Port Moody										
Port Moody Storm Drain Rehabilitation	Maintenance	Port Moody										
Rosemary Heights Pressure Sewer Capacity Upgrade	Growth	Surrey										
Royal Ave PS Rehabilitation	Maintenance	New Westminster										
Sapperton Pump Station	Growth	New Westminster										
Sapperton Pump Station Emergency Backup Power	Resilience	New Westminster										
Sewer Heat Projects	Opportunity	Regional										
South Surrey Interceptor Johnston Section	Growth	Surrey										
SSI - King George Section - Odor Control Facility (OCF) and Grit C	Growth	Surrey										
SSI Influent Control Chamber Repair and Replace Gates	Maintenance	Delta										
SSI Sulfide Odour and Corrosion Control	Upgrade	Delta										
Stoney Creek Sanitary Trunk	Growth	Burnaby										
Surrey Corrosion Control Facility Replacement	Maintenance	Surrey										
VSA Emergency Backup Power	Resilience	Vancouver										
VSA Flow Metering Program	Maintenance	Regional										
VSA Grit Chamber Access Improvements	Maintenance	UEL - UEL										
VSA Sewer Relocations and Protections	Maintenance	Regional										



Project Name	Primary Driver	Project Location	Years					Approved Capital Budget	Current Estimated Total Project Cost	% Complete	Comment
			2022	2023	2024	2025	2026				
2022-2026 Capital Plan											
Westridge FM Replacement	Maintenance	Burnaby						3,650,000	7,600,000	27%	Project delayed to focus on higher priority work, but is now in process.
Westridge Pump Stations 1 & 2 Refurbishment	Maintenance	Burnaby						5,790,000	16,250,000	7%	
White Rock Forcemain Rehabilitation	Maintenance	White Rock/Surrey						1,200,000	14,800,000	1%	
Works Yard	Maintenance	Burnaby						32,000,000	32,000,000	83%	
<b>Total Collections</b>								<b>1,028,276,000</b>	<b>1,834,200,000</b>		
Treatment Plants											
AIWWTP Ammonia Removal – Sidestream	Upgrade	Delta						900,000	126,000,000	1%	Continuing with data collection with more analyses to confirm study results. Design currently not scheduled to start until late in the decade - this will likely need to get accelerated so that the pilot plant work is started in 2024 or 2025.
AIWWTP Chemical Lab UPS System Replacement	Maintenance	Delta						600,000	900,000	9%	
AIWWTP Cogen Building Refurbishment	Maintenance	Delta						1,500,000	1,200,000	97%	Only record drawings remain to be completed.
AIWWTP Cogeneration Backup Power	Resilience	Delta						80,503,000	80,500,000	97%	
AIWWTP Electrical Distribution System Protection Control and Monitoring	Upgrade	Delta						2,650,000	2,650,000	48%	
AIWWTP Fibre Optic Infrastructure	Maintenance	Delta						1,500,000	1,500,000	99%	
AIWWTP Hydrothermal Processing Pilot	Opportunity	Delta						19,450,000	28,650,000	14%	Design is planned to be completed in 2023, and construction will not be started until funding is secured.
AIWWTP ICS Replacement Program	Maintenance	Delta						14,350,000	14,350,000	1%	Delayed to give way to Stage V Activities.
AIWWTP Influent System Remediation	Maintenance	Delta						2,400,000	82,500,000	1%	Project definition has been completed.
AIWWTP IPS Gates Replacements	Maintenance	Delta						100,000	100,000	0%	Gates complete under hydraulic gate replacement project, 1 gate remaining in 2023
AIWWTP IPS Pump Building Roof Replacement Phase 2	Maintenance	Delta						-	800,000	0%	
AIWWTP Outfall Repair	Maintenance	Delta						-	1,550,000	0%	Contingency in case repair is required until new outfall and bypass pipe are complete
AIWWTP Replacement of ICS Equipment	Maintenance	Delta						4,445,000	4,445,000	97%	
AIWWTP Replacement of Protective Relays	Maintenance	Delta						3,308,000	3,008,000	95%	
AIWWTP Scheduled 64kV Potential & Current Transformer Replacements	Maintenance	Delta						800,000	800,000	95%	Project at close out stages and will see a surplus.
AIWWTP Scum Pump Replacement	Maintenance	Delta						-	1,350,000	0%	
AIWWTP Secondary Clarifier Corrosion Repair	Maintenance	Delta						58,484,000	36,000,000	99%	Facilities in service and project projected to be completed significantly under budget
AIWWTP Secondary Effluent Discharge Flowmeter Replacement	Maintenance	Delta						400,000	50,000	99%	Project is complete, and will be significantly under budget by coordination with other works.
AIWWTP Spare Trickling Filter Pump & Motor Purchase	Maintenance	Delta						1,950,000	1,950,000	80%	
AIWWTP Station Battery Replacement	Maintenance	Delta						1,207,000	1,207,000	99%	
AIWWTP Trickling Filter Media & Distributor Arms & Ducting Replacement	Maintenance	Delta						90,700,000	80,000,000	70%	three TF's complete. Fourth TF will be completed in 2023 and some additional work on TF1 will be undertaken in 2024. Project is expected to show a significant surplus
AIWWTP UPS Condition Monitoring System	Resilience	Delta						-	550,000	0%	Project on hold pending confirmation of scope.
All WWTPs Power Quality Monitoring & Outage Alarming Network	Upgrade	Regional						2,870,000	2,870,000	95%	
Annacis Influent System Surge Control Refurbishment	Growth	Delta						22,000,000	16,000,000	40%	Construction underway, but delayed to address safe access issues. Project is expected to show a surplus.
Annacis MCC 80 051, 80 070, 80 071 Replacement	Maintenance	Delta						2,850,000	2,850,000	95%	
Ferguson Road Paving Refurbishment	Upgrade	Richmond						1,100,000	600,000	27%	Project delayed to address permitting issues. Project is expected to show a surplus.
IWWTP - Biogas Lines Relocation	Resilience	Richmond						5,780,000	4,800,000	95%	Project will be completed under budget
IWWTP Biosolids Dewatering Facility	Upgrade	Richmond						61,300,000	61,300,000	97%	Commissioning will be completed in September 2023.
IWWTP CEPT Winterization	Maintenance	Vancouver						750,000	1,500,000	0%	construction deferred to 2023 to coordinate with other works. Additional scope added to address aging infrastructure.



Project Name	Primary Driver	Project Location	Years					Approved Capital Budget	Current Estimated Total Project Cost	% Complete	Comment					
			2022	2023	2024	2025	2026									
<b>2022-2026 Capital Plan</b>																
			2022	2023	2024	2025	2026	2027	2028	2029	2030	2031				
IWWTP ICS IPS Control Replacement	Maintenance	Richmond											1,750,000	1,750,000	29%	
IWWTP ICS Replacement Program	Maintenance	Richmond											750,000	750,000	1%	
IWWTP Influent Gate Refurbishment	Maintenance	Richmond											1,350,000	1,350,000	41%	
IWWTP IPS Drive Remediation	Maintenance	Richmond											1,400,000	1,400,000	1%	
IWWTP MCC/Power Distribution Assess/Replace - Phase 2	Maintenance	Richmond											1,000,000	800,000	60%	Project at close out stages and will see a surplus.
IWWTP PA-Sed Tank & Gallery Wall Refurbishment	Maintenance	Richmond											750,000	950,000	0%	Work delayed to confirm scope of repair.
IWWTP Replacement of CoGen Control System	Maintenance	Richmond											2,500,000	2,500,000	70%	
IWWTP Siphon Chamber Refurbishment	Maintenance	Richmond											2,150,000	2,150,000	0%	Project delayed to allow improved coordination of other related works and improve safe operating conditions for work site.
IWWTP Sludge Lagoons Dewatering Facility	Upgrade	Richmond											4,000,000	4,000,000	77%	Delayed due to supply chain issues.
IWWTP Solids Handling Refurbishment	Maintenance	Richmond											65,400,000	58,000,000	98%	Project substantially complete and will show a surplus
IWWTP Standby Diesel Generators	Resilience	Richmond											2,000,000	5,000,000	1%	Project on hold to confirm scope
Iona Island Control & Instrumentation Replacement 2011	Maintenance	Richmond											2,750,000	2,750,000	77%	
LIWWTP Admin Dewatering Building Roof Repair	Maintenance	Richmond											100,000	800,000	0%	
LIWWTP Biogas Clean-up Project	Opportunity	Richmond											13,800,000	13,800,000	99%	
LIWWTP CCT Isolation Gates	Maintenance	Richmond											2,050,000	2,050,000	34%	
LIWWTP Effluent Heat Recovery Project	Opportunity	Richmond											10,000,000	10,000,000	1%	
LIWWTP Ground Fault Detection System Replacement	Maintenance	Richmond											1,550,000	1,550,000	1%	
LIWWTP High Efficiency Boiler	Maintenance	Richmond											1,300,000	1,300,000	16%	Rescheduled until after Biogas Cleanup Project is completed and in operation. Project is combined with the Effluent Heat Recovery Project.
LIWWTP ICS Replacement Program	Maintenance	Richmond											6,750,000	6,750,000	19%	
LIWWTP PA-Sed Tank Refurbishment	Maintenance	Richmond											4,115,000	3,500,000	2%	
LIWWTP Pilot Digestion Optimization Facility	Opportunity	Richmond											2,850,000	4,850,000	65%	
LIWWTP Power Reliability	Resilience	Richmond											8,202,000	12,400,000	36%	Project delayed due to procurement and to coordinate design issues.
LIWWTP SCL Refurbishment	Maintenance	Richmond											850,000	34,000,000	0%	Project delayed due to resourcing
LIWWTP Tricking Filter Refurbishment	Maintenance	Richmond											500,000	43,050,000	0%	Project delayed due to resourcing
NLWWTP Screw Pump Replacement	Maintenance	Langley Township											1,550,000	1,300,000	83%	Project complete and will show a surplus
NLWWTP Standby Diesel Generator	Resilience	Langley Township											400,000	1,000,000	0%	Purchase of equipment upon approval
NWL WWTP 25 kV Substation Replacement	Maintenance	Langley Township											10,050,000	9,800,000	93%	Project in closeout phase and will show a surplus
WWTPs Electrical System Studies & Upgrades	Resilience	Regional											750,000	1,900,000	13%	Project was delayed to coordinate with other works but is now underway
<b>Total Treatment Plants</b>													<b>532,514,000</b>	<b>789,430,000</b>		
<b>Grand Total Liquid Waste Services</b>													<b>1,560,790,000</b>	<b>2,623,630,000</b>		





Project Name	Primary Driver	Project Location	Years										Approved Capital Budget	Current Estimated Total Project Cost	% Complete	Comment	
			2022-2026 Capital Plan					2027-2031									
			2022	2023	2024	2025	2026	2027	2028	2029	2030	2031					
<b>Treatment Plants</b>																	
AIWWTP Digester No. 5	Growth	Delta												-	330,650,000	0%	Delayed due to staff availability.
AIWWTP Stage 5 Expansion & Outfall System	Growth	Delta												1,191,500,000	944,100,000	60%	Detailed design of Phase 2 works delayed. Outfall construction is approximately 80% complete.
Biosolids Dryer	Opportunity	Delta												22,700,000	337,700,000	3%	Delayed due to staff availability.
IIWWTP Outfall Refurbishment	Maintenance	Vancouver												20,000,000	325,000,000	1%	
Iona Secondary Wastewater Treatment - Phase 1	Upgrade	Richmond												1,060,000,000	9,940,000,000	1%	Baseline budget and schedule has been established as part of final Project Definition Report and Stage Gate 1 approval in March 2022. Schedule is 5-years beyond regulatory deadline.
North Shore WWTP Secondary Upgrade, Conveyance and Decommissioning	Upgrade	Dist of North Van												1,057,867,000	1,057,900,000	54%	Construction of treatment plant 37% complete. Design Build Finance contract terminated. New Designer and Contractor engaged for detailed design and construction execution planning. Update expected Q3 2023.
Northwest Langley Wastewater Treatment Program	Growth	Langley Township												1,629,700,000	2,280,650,000	14%	Program delayed due to unexpected archeological findings on the WWTP site. Budget has been updated in the 2023 capital plan.
<b>Total Treatment Plants</b>														<b>4,981,767,000</b>	<b>15,216,000,000</b>		
<b>Grand Total Liquid Waste - Project Delivery</b>														<b>4,981,767,000</b>	<b>15,216,000,000</b>		

\* Progress status for each project will be presented in a future report.

## Capital Project Status Information December 31, 2022

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### GREATER VANCOUVER SEWERAGE & DRAINAGE DISTRICT (Liquid Waste Services)

The majority of projects under the GVS&DD Capital Program are delivered by the Liquid Waste Services Department. The following narrative provides details and status updates on the more significant of these projects. Seven projects (as identified in Attachment 2B), are being delivered by the Project Delivery Department. As those projects provide separate updates to the Liquid Waste Committee and GVS&DD Board, no additional information on them is provided here.

#### Infrastructure Growth Program

- **FSA – Burnaby Lake North Interceptor – Winston Street Section** – Phase 1 of the work was completed in 2021. In 2022, GVS&DD awarded Pomerleau Bessac Infrastructure (PBI) a contract for Phase 2 of the project, which involves 2.9 km of 2134 mm diameter plastic-lined concrete pipe, to be installed via trenchless methods. The trenchless section follows Winston Street, starting 140m south of Greenwood Street, extending east up to approximately 500m west of the junction with Brighton Avenue. Construction began in May 2022. Currently, there is a schedule delay of about 4 months due to tunneling issues. Projected completion date is Q4 2024.
- **FSA - Annacis Island WWTP Outfall – Surge Control** - This project involves the replacement of four hydraulic gates in the Influent Control Chamber and ancillary equipment to mitigate the risk of transient surges (water hammer) to upstream infrastructure. The GVS&DD awarded the construction contract to Maple Reinders Construction Limited in March 2021. Long lead equipment submittals have been approved for fabrication, and construction is approximately 45% complete. The project is delayed by 1 year to allow safe access during the low flow summer period. Substantial completion is expected in late Q3 2024.
- **FSA - North Road Trunk Sewer No. 2** – Construction of Phase 1A covering the sections between Brunette River and Lougheed Highway was completed in 2020. Construction of Phase 1B involving a railway crossing is pending for resolution of property issue with Burlington Northern Santa Fe Railway. Phase 2, involving replacement of the existing 250mm/300mm diameter sewer with 1.3 km of new 450mm and 600mm diameter sewer between Lougheed Highway and Clarke Road, was tendered in the Q4 2022 and is now seeking construction award approval by the GVS&DD Board in March 2023. Construction of Phase 2 will begin in the summer of 2023, and is expected to take 60 weeks until substantial completion.

#### Infrastructure Maintenance Program

- **LSA – Gilbert Trunk Sewer Twinning** - Construction of the 5.3 km long Phase 1 and 2 is complete. The remaining 2 Phases have a total length of 4.7 km consisting of 1.8 m diameter sewers. Phase 4, from Steveston Highway to the Lulu Island WWTP, was tendered in 2020 but due to contractual issues, the procurement process was collapsed and restarted. It was re-tendered and the contract was awarded to

Jacob Brothers in July 2022. Construction commenced in February 2023 and is expected to be complete in fall 2025. Phase 3, which extends from Blundell Road south to Steveston Highway, was awarded to BD Hall in October 2022. Construction is expected to commence in April 2023 and is expected to be complete in fall 2025.

- **NSSA – Gleneagles Pump Station Improvements** – This project involves upgrading or replacing five existing wastewater pump stations located in West Vancouver in order to replace aging equipment, expand system capacity, and meet seismic standards. A \$14M contract was awarded to Industria Construction in December 2022 for major upgrades to both Gleneagles 4 and 5. Construction will begin at Gleneagles 5 in mid-2023 with completion in 2024, followed by construction at Gleneagles 4 in 2024-2025. Gleneagles 3 began the conceptual design phase in December 2022, which is expected to conclude in 2023. Gleneagles 1 and 2 are in the preliminary design phase and staff are working closely with the District of West Vancouver in order to optimize design and construction. Preliminary design for Gleneagles 1 and 2 is scheduled to be complete in 2023.
- **FSA – River Scour Protection Program – Scour Protection at Maple Ridge Forcemain, Fraser River Crossing**  
The Maple Ridge Forcemain under the Fraser River was constructed in 1981 and consists of twin 762 mm diameter steel pipe. The crossing is about 400 m downstream of Barnston Island where the river is about 600 m wide. The river channel has recently experienced scour, which posed a risk to the forcemain. This project involves adding additional rip rap to the existing scour protection apron. The work was tendered in Q4 2022 and JJM Construction began construction on January 3<sup>rd</sup> 2023 and was substantially completed on February 8<sup>th</sup> 2023. Additional scour protection projects will be completed in 2023 and 2024 at other crossings.
- **FSA - North Surrey Interceptor (NSI) Rehab or Replacement** - This project involves two components. The first is rehabilitating approximately 220m of the existing NSI near the Port Mann Bridge, plus relocating and upgrading the City of Surrey connection to the NSI. PW Trenchless successfully completed the construction in June 2022.

The second part of this project is twinning and rehabilitation of approximately 760m of the existing NSI-Manson Road section. Currently in preliminary design for twinning by microtunneling is underway, with construction expected to commence in mid-2024. Rehabilitation of the existing line will be scheduled post-twinning, in order to reduce costs and risks associated with work in a live sewer.

- **FSA - Crescent Beach FM Replacement** – This project involves the design and construction of approximately 2 km of 1.2 m diameter sanitary force main to replace the existing 500 mm diameter FRP (fiber reinforced plastic) pipe which is aging and in poor condition. The GVS&DD awarded the construction contract to JJM Construction in July 2021. Construction started in the fall of 2021, and unforeseen ground conditions and property challenges has delayed the project. The project is now planned to be complete by the end of 2023.
- **FSA - New Westminster Interceptor Repair – Columbia Street Section** – This project involves the rehabilitation of 1.6 km of the 1.5 m diameter New Westminster Interceptor from Front St. to McBride Blvd in New Westminster. The GVS&DD awarded the contract to Southland Holdings. Construction started in July 2021. Phase 1, which involves the first 400 m of sliplining, was completed in November 2022. Phase 2, which also involves 400m of sliplining, was completed in January 2023. Phases 3 and 4 are in construction and are scheduled to be complete in May 2023. Phases 5 and 6 have been removed from the scope of work due to schedule and access issues with the Patullo Bridge Replacement Project.

- **FSA – Annacis Island WWTP Secondary Clarifier Corrosion Repair** – This project involves replacing 12 secondary clarifier mechanisms that have been damaged by corrosion and are at the end of their service life. This project is combined with the Secondary Clarifier Flow Control project, which involves the addition of 12 new influent flow balancing gates and the replacement of 12 effluent launders and weirs. The work has been phased over several years to address priority areas and to coordinate equipment shut downs with other work. The final construction contract, awarded to NAC Constructors Ltd. in March 2019, consists of the replacement of the 5 remaining mechanism units, the addition of 9 flow balancing gates and the replacement of the 12 existing effluent launders and weirs. Construction started in May 2020 and was substantially completed in June 2022.
- **FSA – Annacis Island WWTP Trickling Filter Media, Distributor and FOA Duct Replacement** – This project replaces the rotary distributors, plastic media and foul air ducting for the four Trickling Filters (TF) at the AIWWTP. These components have been in service for over 20 years and are reaching the end of their service life. The distributors and ducting have experienced significant corrosion, resulting in equipment failures that required emergency maintenance. The construction is being completed under two contracts. The first contract was awarded to Maple Reinders Construction Ltd., in 2019 for the rehabilitation of TF 1 and 3. It is complete. The work for TF 2 and 4 was awarded to Pomerleau in 2021. They completed TF 4 in 2022 and will complete TF 2 in 2023.

#### Infrastructure Resilience Program

- **VSA – Emergency Backup Power** - This project involves design, supply and installation of standby emergency backup generators at the Chilco, Columbia, Harbour, Hudson, Jervis, Kent and Willingdon pump stations to allow the stations to remain operational during power failure events and reduce the risk of a spill. Three separate tenders for the Columbia, Harbour, Hudson, Kent and Willingdon upgrades were issued in Q4 2019. The construction at Harbour, Hudson, Kent and Willingdon pump stations were completed earlier in 2021 and the generators were commissioned. The Columbia PS generator was completed and commissioned in Q4 of 2021. The Vancouver Parks Board approved the Jervis PS generator concept in the fall of 2019, the detailed design and RFP are completed and permitting of the Jervis facility is advancing. Construction has been rescheduled until late 2023, due to unresolved property issues. The Chilco facility concept is currently being reviewed with the Vancouver Parks Board, prior to starting the detailed design. To prevent future spills during power outages, MV is actively working on design and installation of temporary generators at both Chilco and Jervis PS in 2023.

#### Infrastructure Upgrade Program

- **VSA – Iona Island WWTP Biosolids Dewatering Facility** – This project involves the construction of a mechanical dewatering facility to dewater on-going plant production of biosolids so that they can be transported for beneficial reuse or disposal. This facility will permit the decommissioning of the four existing digested sludge lagoons and the sludge drying area to make space for the construction of the new tertiary treatment plant. The \$52 million design-build contract was awarded to NAC Constructors in April 2019. The design phase was completed in 2020 and construction phase is complete as of December 2022. Deficiencies on the hopper screw conveyors were discovered during testing and commissioning, which are currently being addressed by the contractor. The dewatering facility is targeted for final acceptance by MV in Q3 2023 with 30 days of Owner Commissioning commencing in Q2 2023.

## Opportunity Program

- **FSA – Annacis Island WWTP Hydrothermal Liquefaction** – This work involves the design and construction of a demonstration scale plant to convert wastewater biomass to biocrude as a low carbon fuel. The objective of the demonstration scale is to assess the technology performance and the feasibility of full-scale implementation at an existing or future WWTP. Six separate contracts are anticipated as part of this project including a qualitative risk analysis of the HTL system and an operations-maintenance contract independent of the AIWWTP facility operations. A contract for the progressive design-build of the mechanical facility was issued in January 2022, and design of the facility is currently underway, and final pricing is expected in Q3 2023. Design of the ancillary systems and connections to the WWTP are under way, and will be finalized after completion of the design of the mechanical systems. The entire HTL demonstration plant is scheduled to be completed in 2025 and put in operation from 2025 to 2027.
- **LSA – LIWWTP Pilot Digestion Optimization Facility (PDOF)** - The PDOF is a facility to evaluate sludge digestion optimization techniques without risking full-scale operations. Lessons learnt at the pilot scale could be incorporated in existing and future plants leading to the deferral of significant investments such as building new digesters as well as improved performance and reduction in greenhouse gases. The PDOF is designed to be adaptable and transportable (being built in modules) to other WWTP sites (such as AIWWTP or ARC) for further research and testing purposes. Staff from O&M and PPA, in cooperation with UBC Okanagan research staff will be able to undertake experimentation, data collection and trend analyses.

The GVS&DD awarded the contract for the PDOF fabrication and installation to Trittech in Q1 2021. Onsite construction is at 86% complete. Early in 2023 the system is to be pre-commissioned/tested with an expected completion date of Q2 2023.

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To: Liquid Waste Committee

From: Gary Soo, Director, Wastewater Treatment & Residuals Management, Liquid Waste Services  
George Kavouras, Director, Procurement, Procurement and Real Estate Services

Date: March 30, 2023 Meeting Date: April 12, 2023

Subject: **Award of Contract Resulting from Request for Proposal No. 22-318 Supply and Delivery of Dry Polymer to Wastewater Treatment Plants**

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### RECOMMENDATION

That the GVS&DD Board:

- a) approve the award of a contract in the amount of up to \$7,956,000 (exclusive of taxes) to Solenis LLC for supply and delivery of Dry Polymer to Wastewater Treatment Plants, resulting from Request for Proposal No. 22-318; and
  - b) authorize the Commissioner and the Corporate Officer to execute the required documentation once the Commissioner is satisfied that the award should proceed.
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### EXECUTIVE SUMMARY

It is recommended that GVS&DD approve the award of a contract to Solenis LCC (Solenis) for supply and delivery of Dry Polymer to Wastewater Treatment Plants. Solenis has been identified as offering the best value based on highest overall score and lowest cost. Dry polymer is used to meet regulatory requirements at Annacis Island, Lions Gate and Lulu Island Wastewater Treatment Plants for digester operating parameters, biosolids disposal and biosolids quality. It is used by the Wastewater Treatment Division in centrifuge dewatering of biosolids and dissolved air flotation thickening processes.

Request for Proposal (RFP) No. 22-318 Supply and Delivery of Dry Polymer to Wastewater Treatment Plants resulted in two proposals. The evaluation of the proposals, and the results of full scale testing recommended a contract to be awarded to Solenis. The term of the agreement is 3 years, with fixed pricing for year 1 and annual cost adjustments for years 2 and 3, provided costs fluctuate by +/- 2% and as determined by the price adjustment formula. The three-year term has an estimated contract value of \$7,956,000 (excluding taxes). The agreement will commence on June 1, 2023.

### PURPOSE

This report is to advise the GVS&DD Board of the results of RFP 22-318: Supply and Delivery of Dry Polymer to Wastewater Treatment Plants and to recommend award of a 3-year contract in an amount of up to \$7,956,000 (exclusive of taxes) to Solenis LLC.

## **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 that 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 authorize award of a contract for Supply and Delivery of Dry Polymer.

## **CONTRACT DESCRIPTION**

The contract is for the supply and delivery of dry polymer to Annacis Island, Lions Gate and Lulu Island Wastewater Treatment Plants for ongoing use in centrifuge dewatering of biosolids and dissolved air flotation thickening (DAFT) processes for a three-year term.

Request for Qualifications No 22-240 were received from four firms for evaluation: Brenntag Canada Inc. (Brenntag), SLS Chemical Inc., SNF and Solenis. Of these four proponents, three were shortlisted which resulted in the invitation of Brenntag, SNF, and Solenis to provide proposals for RFP No. 22-318. SLS Chemical Inc. did not qualify due to their inability to provide bulk volumes of dry polymer, and a lack of local presence in the lower mainland.

The RFP closed on November 10, 2022 and only two proponents, Brenntag and Solenis, responded. The third proponent, SNF, was unable to meet the submission deadline and was disqualified. Full-scale testing of trial polymers submitted by proponents concluded on March 2, 2023.

This contract will be awarded as a three-year contract with fixed costs for 6 months from contract award, then annual cost adjustments for years 2 and 3, as determined by the price adjustment formula specified in the RFP. The contract term provides price certainty for the first year of the contract for wastewater treatment plants and mitigates risk of significant cost escalation of chemical components and diesel fuel for suppliers in years 2 and 3.

Evaluation of the proposals was based on the selection criteria identified in the RFP. The technical component of the proposals (45% weighting) was evaluated by staff from Liquid Waste Services and the financial component (55% weighting) was evaluated by staff from Procurement and Real Estate Services. Brenntag and Solenis selected and supplied polymers for testing in each of the five plant processes; each process and product has different properties among the three treatment plants. The testing determined which polymer performed the best for each plant process. Results of product testing and the technical evaluations were very close, as both proponents are able to provide good quality polymer. In summary, the Solenis proposal was the highest ranking and lowest price proposal.

Based on the projected consumption at the three wastewater treatment plants and the cost escalation formulae provided in the contract for years 2 and 3, the contract values are estimated as per Table 1 below:

**Table 1: Estimated Polymer Contract Expenditures (by Supplier)**

<b>1. Solenis</b>	<b>\$7,956,000</b>
<b>2. Brenntag</b>	<b>\$8,614,000</b>

**ALTERNATIVES**

1. That the GVS&DD Board:
  - a) approve the award of a contract in the amount of up to \$7,956,000 (exclusive of taxes) to Solenis LLC for supply and delivery of Dry Polymer to Wastewater Treatment Plants, resulting from Request for Proposal No. 22-318; 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 Board terminate RFP 22-318: Supply and Delivery of Dry Polymer to Wastewater Treatment Plants and direct staff to report 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 Solenis in the amount of up to \$7,956,000 (exclusive of taxes). There is sufficient approved budget based on the projected contract values. The proposal from Solenis was identified as offering best overall value.

The GVS&DD Board has the choice not to proceed with Alternative 1 but staff will need further direction in relation to the procurement process. Continuous uninterrupted supply of dry polymers is critical for treatment of the dewatering of biosolids and DAFT processes, and meeting regulatory requirements.

**CONCLUSION**

Request for Proposal No. 22-318 was issued for the Supply and Delivery of Dry Polymer for three Wastewater Treatment Plants at Annacis Island, Lions Gate and Lulu Island. Solenis was identified as the highest ranked proponent with the lowest pricing. Based on the evaluation of the proposals, it is recommended that the GVS&DD Board authorize the Commissioner and Corporate Officer to award and execute a 3-year contract with Solenis for the unit rates provided in their proposal for an estimated contract value of \$7,956,000 (excluding taxes).

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To: Liquid Waste Committee

From: Peter Navratil, General Manager, Liquid Waste Services

Date: April 4, 2023 Meeting Date: April 12, 2023

Subject: **Manager's Report**

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## **RECOMMENDATION**

That the Liquid Waste Committee receive for information the report dated April 4, 2023 titled "Manager's Report".

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### **1. North Shore Wastewater Treatment Plant Project Update**

Metro Vancouver continues to work with PCL and AECOM to finish developing an execution plan to complete the project. We are targeting presenting this plan, along with an updated cost estimate and schedule, to the Liquid Waste Committee for consideration in mid-2023.

From late February to late March, PCL (the construction manager) progressed early works at the treatment plant site by completing three pours for the Influent Pumping Station and one for the Power Distribution Building, totaling approximately 840 cubic metres of new concrete. Crews are completing formwork and other preparations for concrete pours for the Operations and Maintenance Building and roof of the North Digester, and are continuing to repair concrete deficiencies in existing structures. With the GVD&DD Board's approval of an amendment of \$85,000,000 in late March to allow PCL to continue early works while an execution plan is completed, PCL is now preparing to increase construction activity at the site over the coming months, focusing on structures on the critical path.

AECOM (the project's design consultant) is supporting early works by preparing "Issued for Construction" drawings and providing field reviews. They are advancing the detailed design of the treatment plant, following a building-by-building approach, and have recently completed 90% design packages for three of fourteen buildings and are now working on the next six buildings in their work plan. Further, they are supporting the procurement of equipment and materials by confirming the technical specifications required for each contract.

### **2. Liquid Waste Committee Wastewater Treatment Plant Tours**

We have had some requests to invite the Committee to tour the North Shore Wastewater Treatment Plant construction project. We had tentatively planned to host the Committee at our Lulu Island Wastewater Treatment Plant on June 28, 2023. Given the focus related to the North Shore plant, we propose to change the venue for the same date. You will be receiving an adjusted invitation shortly.

We will also plan to invite the Committee for a tour each year, to see one of our facilities. The Iona Island, Lulu Island and Annacis Wastewater Treatment Plants all have extensive investments underway and would make for interesting and informative visits.

**3. Liquid Waste Committee 2023 Work Plan**

The updated 2023 Work Plan (Attachment) shows the status of the Committee's key priorities for the year.

**Attachment**

Liquid Waste Committee 2023 Work Plan

## ATTACHMENT

### Liquid Waste Committee 2023 Work Plan

Report Date: April 12, 2023

<b>Priorities</b>	
<b>1st Quarter</b>	<b>Status</b>
2023 Liquid Waste Capital Projects	Complete
2022 Wipe It, Green Bin It Campaign Results	Complete
2022 Microfibres Reduction Campaign Results	Complete
North Shore Wastewater Treatment Plant Project Update	Complete
Wet Weather Pricing - Proposed Amendments to GVS&DD Cost Apportionment Bylaw	Complete
2023 Liquid Waste Sustainability Innovation Fund Applications	Complete
Municipal Requests for Sewerage Area Boundary Amendments (as applicable)	Complete
Utility Policies (as applicable)	Complete
Contract Approvals as per <i>Procurement and Real Property Contracting Authority Policy</i>	Complete
<b>2<sup>nd</sup> Quarter</b>	
Annacis Island Wastewater Treatment Plant Project Update	In Progress
Northwest Langley Wastewater Treatment Plant Project Update	In Progress
North Shore Wastewater Treatment Plant Project Update	In Progress
Liquid Waste Services Capital Expenditure Summary Update as at December 31, 2022	In Progress
GVS&DD Sewer Use Bylaw and Fees Update	In Progress
2023 Update on Liquid Waste Sustainability Innovation Fund Projects	In Progress
Reclaimed Water Policy	In Progress
Municipal Requests for Sewerage Area Boundary Amendments (as applicable)	In Progress
Utility Policies (as applicable)	In Progress
Contract Approvals as per <i>Procurement and Real Property Contracting Authority Policy</i>	In Progress
<b>3rd Quarter</b>	
GVS&DD Food Sector Grease Interceptor Bylaw Amendment	In Progress
2023 Unflushables Campaign Results	In Progress
2022 GVS&DD Environmental Management and Quality Control Annual Report	In Progress
Liquid Waste Services Capital Expenditure Summary Update as at April 30, 2023	In Progress
Municipal Requests for Sewerage Area Boundary Amendments (as applicable)	In Progress
Utility Policies (as applicable)	In Progress
Contract Approvals as per <i>Procurement and Real Property Contracting Authority Policy</i>	In Progress
<b>4th Quarter</b>	
2024 Annual Budget & 5 Year Financial Plan - Liquid Waste	Pending
Environmental Management System Update	Pending
LWMP Review and Update, Report on Phase 2	Pending
Lower Mainland Estuary Management Program	Pending
Liquid Waste Services Capital Expenditure Summary Update as at August 31, 2023	Pending
Drainage Areas Policy	Pending
Sewage Catchment Area (Rawn) Amendment - Langley Servicing Plan	Pending
Municipal Requests for Sewerage Area Boundary Amendments (as applicable)	Pending
Utility Policies (as applicable)	Pending
Contract Approvals as per <i>Procurement and Real Property Contracting Authority Policy</i>	Pending