

NO: R045

COUNCIL DATE: March 11, 2019

REGULAR COUNCIL

TO: **Mayor & Council**

DATE: **March 6, 2019**

FROM: **General Manager, Engineering**

FILE: **0450-30**

SUBJECT: **Metro Vancouver Projects Update**

RECOMMENDATION

The Engineering Department recommends that Council receive this report for information.

INTENT

The purpose of this report is to provide Council with an update on all of the water, liquid waste and solid waste projects planned to be constructed by Metro Vancouver in the City over the next five years.

BACKGROUND

Metro Vancouver, through the Greater Vancouver Water District and the Greater Vancouver Sewerage and Drainage District, is responsible for the:

- Collection and treatment of the region's wastewater. In Surrey, all wastewater collected is treated at the Annacis Island Wastewater Treatment Plant;
- Supply of clean, safe drinking water. The water comes from rain and snowmelt from the Capilano, Seymour and Coquitlam Watersheds; and
- Disposal of solid waste (garbage and recycling) generated by residents and businesses.

DISCUSSION

To support Surrey's existing population and to meet future needs, Metro Vancouver is scheduled to complete a number of projects in the City of Surrey and in the Township of Langley. These projects are illustrated in the map attached to this report as Appendix "I" and are described as follows:

Liquid Waste

1. Ocean Park Trunk – Crescent Section

This project includes repair/replacement of approximately 0.4km of pipe in the Ocean Park Sewer between 24 Avenue and Bayview Street. The project also includes construction of an odour control facility at a later date.

The estimated project value is \$5.0 million. Metro Vancouver is funding the whole cost of this project. The project is expected to start construction in 2020 and be completed in 2023.

2. South Surrey Interceptor – Johnston Section

This project includes a 2.2km, 3m diameter plastic-lined concrete pipe, of which 880m is to be tunnelled. To date, approximately 1.5km has been built, with work on the remaining portion to start in March 2019. The project spans from King George Boulevard to 153A Street, running south of and parallel to Highway 10.

The estimated project value is \$66.2 million. Metro Vancouver is funding the whole cost of this project. The project is currently underway and is expected to be completed in 2022.

3. South Surrey Interceptor – King George Section Odour Control Facility and Grit Chamber

This project includes a grit collection chamber near King George Boulevard, and the installation of two odour control facilities along the South Surrey Interceptor: one at the King George grit chamber; and the other at the Highway 91 grit chamber.

The estimated project value is \$19.5 million. Metro Vancouver is funding the whole cost of this project. The project is currently underway and is expected to be completed in Winter 2019.

4. Surrey Corrosion Control Facility

This project includes a new ferrous chloride dosing system to reduce corrosion in Metro Vancouver's system that results from naturally occurring hydrogen sulphide in liquid wastewater. The new system will be located at the Metro Vancouver Cloverdale Pump Station located at 164 Street and Highway 10 and replaces the existing system currently located at the City of Surrey Works Yard.

The estimated project value is \$2.9 million. Metro Vancouver is funding the whole cost of this project. The project is expected to start in Fall 2019 and be completed in 2020.

5. Cloverdale Pump Station Upgrades

This project includes capacity expansion of the pump station at 5580 - 164 Street to support continued growth in Cloverdale, Clayton, the City of Langley and the Township of Langley.

The estimated project value is \$31.0 million. Metro Vancouver is funding the whole cost of this project. The project is expected to start in 2022 and be completed in 2024.

6. North Surrey Interceptor Repair/Replacement

This project includes repair/replacement of two sections totalling approximately 1.2km of pipe in the North Surrey Interceptor near Grace Road and under the Port Mann Bridge.

The estimated project value is \$24.8 million. Metro Vancouver is funding the whole cost of this project. The project is expected to start in 2020 and be completed in 2022.

7. North Surrey Sanitary Sewer Overflow (“SSO”) Tank

This project includes an SSO storage facility at 136A Street and 115 Avenue with a capacity of 11,000 cubic metres.

The estimated project value is \$42.5 million. Metro Vancouver is funding the whole cost of this project. The project is expected to start in 2020 and be completed in 2022.

8. North Surrey Interceptor – Odour Control Facility

This project includes installation of an odour control facility at the North Surrey Interceptor Port Mann Section around 136A Street and 115 Avenue.

The estimated project value is \$7.4 million. Metro Vancouver is funding the whole cost of this project. The project is expected to start in 2020 and be completed in 2021.

9. Crescent Beach Forcemain

This project includes a 3.0km, 1.05m diameter sanitary forcemain. Phase 1 involves construction of approximately 2.0km of forcemain, complete with two 80m trenchless crossings under Highway 99 and BC Rail. Phase 2 involves a crossing of the Serpentine River, which is tentatively scheduled for 10 or more years in the future.

The estimated project value is \$11.0 million. Metro Vancouver is funding the whole cost of this project. The project is expected to start in 2020 and be completed in 2021.

10. Cloverdale Trunk Sewer Upgrade

This project includes an upgrade to the existing trunk on Highway 10 from 164 Street to 180 Street to increase conveyance capacity.

The estimated project value is \$29.0 million. Metro Vancouver is funding the whole cost of this project. The project is expected to start in 2023 and be completed in 2026.

11. Rosemary Heights Pressure Sewer Upgrade

This project includes an upgrade to the existing pressure sewer on Crescent Road from King George Boulevard to 35A Avenue to increase conveyance capacity.

The estimated project value is \$11.0 million. Metro Vancouver is funding the whole cost of this project. The project is expected to start in 2023 and be completed in 2025.

12. NW Langley Wastewater Treatment Plant

This project includes expansion of the treatment plant at 10301 - 201 Street in the Township of Langley from a capacity of 30,000 to 240,000 people in order to accept liquid waste from Maple Ridge and Pitt Meadows, as opposed to liquid waste being conveyed through North Surrey to the Annacis Island Wastewater Treatment Plant. The project includes a pump station, SSO storage tank, Fraser River crossing, tertiary treatment plant, and outfall.

The estimated project value is \$1.3 billion. Metro Vancouver is funding the whole cost of this project. The project is currently underway and is expected to be completed in 2026.

Water

13. Fleetwood Reservoir

This project includes construction of a new 13.6 megalitre (“ML”) below-ground concrete reservoir located at Meaghan Anne McDougall Park at 9008 Fleetwood Way. The project also includes a valve chamber and 1.1 km water main connector from the Whalley Clayton main.

The estimated project value is \$43.2 million. Metro Vancouver is funding the whole cost of this project. The project is expected to start in Fall/Winter 2019 and be completed in Summer 2021.

14. Sunnyside Reservoir No. 1 Upgrades

This project includes seismic and non-seismic upgrades to the existing Sunnyside Reservoir No. 1 at 2197 - 148 Street. Non-seismic work includes construction of piping, valves, a dechlorination system, a drainage system, and access road. Seismic work entails adding concrete shear walls and thickening of the walls inside the reservoir.

The estimated project value is \$17.1 million. Metro Vancouver is funding the whole cost of this project. The project is expected to start in Spring 2019 and is expected to be completed in Fall 2020.

15. Annacis No. 5 Crossing

This project includes a 2.3km long, 4.5m diameter water supply tunnel from the City of New Westminster to 11477 River Road. This new tunnel will provide a second seismically resistant water supply for the City.

The estimated project value is \$446.0 million. Metro Vancouver is funding the whole cost of this project. The project is expected to start in 2020 and be completed in 2025.

16. Annacis Main No. 5 South

This project includes a 3.0km long, 1.8m diameter steel water main connecting the Annacis No.5 Crossing at 11477 River Road to the Kennedy Reservoir in Kennedy Park at 12171 - 90 Avenue.

The estimated project value is \$48.0 million. Metro Vancouver is funding the whole cost of this project. The project is expected to start in Fall 2023 and be completed in Winter 2025.

17. Kennedy Newton Main

This project includes an 8.0km long, 1.8m diameter steel water main connecting the Kennedy Reservoir to the Newton Reservoir in Newton Reservoir Park at 6275 - 128 Street.

The estimated project value is \$142.0 million. Metro Vancouver is funding the whole cost of this project. The project is expected to start in Fall 2029 and be completed in Winter 2024.

18. Newton Pump Station Improvements

To meet growing water demands in the South Surrey area, Metro Vancouver has identified the need to increase water supply capacity from the Newton Reservoir to the Sunnyside Reservoir. The scope of this project is to construct a new Newton Pump Station No. 2 to replace Metro Vancouver's aging and seismically vulnerable pump station.

The estimated project value is \$28.0 million. Metro Vancouver is funding the whole cost of this project. The project is expected to start in Fall 2020 and be completed in Winter 2024.

19. Grandview Pump Station Improvements

This project includes adding a fourth pump to improve reliability and redundancy of the pump station at 2499 - 184 Street and to improve the HVAC system of the pump station.

The estimated project value is \$2.2 million. Metro Vancouver is funding the whole cost of this project. The project is expected to start in Fall 2020 and be completed in Winter 2021.

20. Whalley Main

This project includes a 2.0km, 1.5m diameter steel water main along 148 Street from the Whalley Reservoir at Whalley Reservoir Park located at 14620 - 105A Avenue.

The estimated project value is \$33.0 million. Metro Vancouver is funding the whole cost of this project. The project is expected to start in Summer 2019 and be completed in Fall 2020.

21. Port Mann Main No. 2 (South)

This project includes a 2.7km, 1.5m diameter steel water main along Wallace Drive at 148 Street to the Whalley Reservoir.

The estimated project value is \$43.0 million. Metro Vancouver is funding the whole cost of this project. The project is currently underway and is expected to be completed in Fall 2021.

22. Jericho Reservoir

This project includes a 20.6ML above-ground concrete reservoir located at 20400 - 73 Avenue in the Township of Langley. The project also includes a valve chamber and a series of tie-ins from the Jericho-Clayton main. This project is a key component of Metro Vancouver's Langley-Surrey Water Supply System. The site is situated adjacent to Willoughby Pump Station, which is owned by the Township of Langley.

The estimated project value is \$38.0 million. At its Regular Meeting on July 9, 2018, Council received Corporate Report No. R151; 2018 Amendments to the 1989 Cost Sharing Agreement with the Greater Vancouver Water District, a copy of which is attached as Appendix "II". The purpose of R151; 2018 was to seek Council's approval for an Amending Agreement to the Water Supply Agreement that the City of Surrey and the Greater Vancouver Water District established in 1989. As a result of the amendments to the Water Supply Agreement, the City's financial contribution to this phase of the project is \$10.2 million, which is payable in annual installments over six years. To date, the City has paid one installment.

The project has recently started and is expected to be completed in Fall 2020.

Solid Waste

23. Residential Drop-off Facility

In the 1990's, Metro Vancouver had committed, via its Regional Solid Waste Plan, to develop a residential drop-off ("RDO") facility in Surrey that would serve residents and small businesses. In 2001, as a condition of the rezoning of the Surrey Transfer Station site, Metro Vancouver reconfirmed its commitment to deliver the RDO facility in Surrey. This commitment was again reflected in the region's current Integrated Solid Waste and Resource Management Plan ("ISWRMP").

The addition of an RDO facility in Surrey will provide a one-stop drop-off location for residents and small business owners, which will assist the City to increase its waste diversion and reduce illegal dumping. Drop-offs at these facilities can include recyclables, compostables, reusable items, and garbage. The main emphasis of such facilities is waste diversion, which is consistent with both the region's ISWRMP and the City's Sustainability Charter 2.0 goal of maximizing waste diversion.

In 2017, City staff identified the property at 6711 - 154 Street for the Surrey Waste and Recycling Drop-off Facility. This property was a vacant City-owned 4.3 acre parcel. The rezoning and sale of the land to Metro Vancouver was completed in 2017. Metro Vancouver is now in the construction phase of the RDO, with estimated completion in 2020.

Metro Vancouver will be responsible for the costs associated with handling garbage and other fee-for-service materials, such as green waste, clean wood, gypsum, and mattresses. The City will be responsible for costs associated with handling recyclables covered by Provincial Extended Producer Responsibility programs, such as packaging, electronics, paint, and other similar materials. In accordance with Metro Vancouver's approach to funding dedicated recycling areas at their existing transfer stations, communities served by these transfer stations have agreed to fund costs associated with the recycling area of their respective facilities. The same approach will be applied for the Surrey RDO Facility, which includes:

- Land Use Contribution: A contribution for land costs based on the size of the recycling area;
- Capital: A contribution to capital costs in an amount equal to the value of construction activities is required to develop the recycling area; and
- Operations: A contribution to the annual cost of operation of the facility through an allocation similar to the annual cost of operation allocation used for the North Shore Transfer Station and Coquitlam Transfer Station.

The annual cost of operating the transfer station will be determined through a competitive process. The estimated base operating cost for the transfer station, excluding capital, land, waste transport, and disposal along with material processing, is expected to be in the range of \$700,000 per year. Operating costs will be offset by tipping fees for waste and recyclables, such as yard trimmings, clean wood, gypsum, and mattresses. The overall estimated cost for the City to operate the recycling area is approximately \$309,000 per year, with total costs around \$3 million.

City Bylaws

As with all City projects, Metro Vancouver projects must adhere to City Bylaws, including *Surrey Noise Control Bylaw, 1982, No. 7044*, *Surrey Tree Protection Bylaw, 2006, No. 16100*, and *Erosion and Sediment Control By-law, 2006, No. 16138*.

Next Steps

Staff will provide Council additional information on these projects, and any expected impacts, as this information becomes available.

SUSTAINABILITY CONSIDERATIONS

The above-mentioned works by Metro Vancouver support the objectives of the City's Sustainability Charter 2.0. In particular, these projects relate to the Sustainability Charter 2.0 theme of Infrastructure. Specifically, Metro Vancouver's work supports the following Desired Outcomes ("DO"):

- All Infrastructure DO1: City facilities and infrastructure systems are well managed, adaptable and long lasting, and are effectively integrated into regional systems;
- All Infrastructure DO2: Infrastructure systems provide safe, reliable and affordable services; and
- All Infrastructure DO3: Infrastructure systems are designed to protect human health, preserve environmental integrity, and be adaptable to climate change impacts.

CONCLUSION

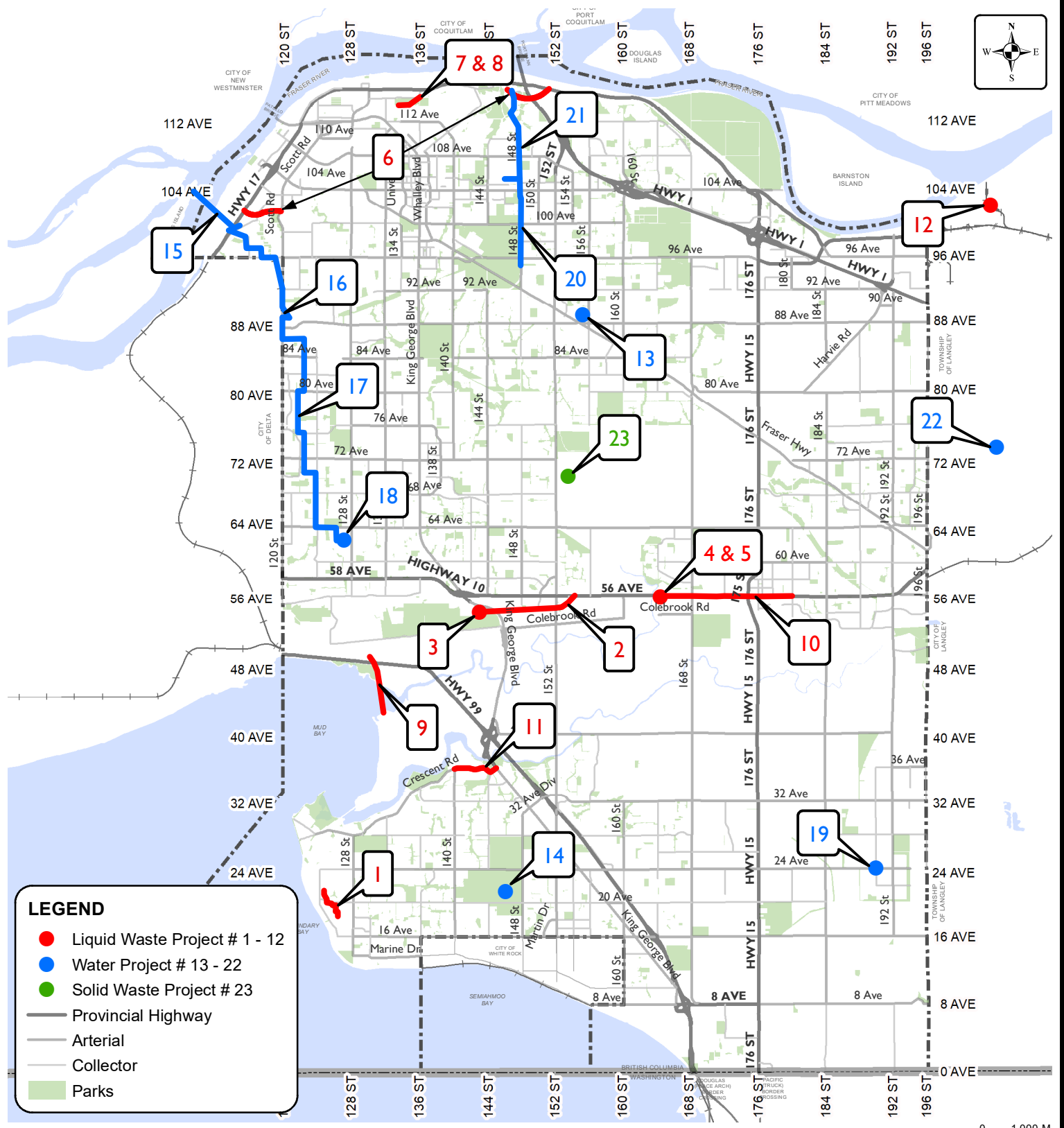
Metro Vancouver, through the Greater Vancouver Water District and the Greater Vancouver Sewerage and Drainage District, has a number of water, liquid waste and solid waste projects planned over the coming years to support current and future residents.

Fraser Smith, P.Eng., MBA
General Manager, Engineering

JA/cc

Appendix "I" - Map of Metro Vancouver Project Locations

Appendix "II" - Corporate Report No. R151; 2018 Amendments to the 1989 Cost Sharing Agreement
with the Greater Vancouver Water District



Produced by GIS Section: 06-Mar-2019, P205934

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Metro Vancouver Planned Projects

ENGINEERING DEPARTMENT

The data provided is compiled from various sources and IS NOT warranted as to its accuracy or sufficiency by the City of Surrey. This information is provided for information and convenience purposes only. Lot sizes, Legal descriptions and encumbrances must be confirmed at the Land Title Office.

NO: R151

COUNCIL DATE: July 9, 2018

REGULAR COUNCIL

TO: Mayor & Council DATE: July 5, 2018
FROM: General Manager, Engineering FILE: 5600-10 (Jericho)
SUBJECT: Amendments to the 1989 Cost Sharing Agreement with the Greater Vancouver Water District

RECOMMENDATION

The Engineering Department recommends that Council:

1. Authorize the Mayor to execute the Amending Agreement with the Greater Vancouver Water District attached as Appendix "I" to this report; and
2. Authorize staff to add the Phase 2 of the Jericho Reservoir to the next edition of the City of Surrey's 10-Year Servicing Plan as a non-growth cost.

INTENT

The purpose of this report is to seek Council's approval for an Amending Agreement to the Water Supply Agreement that the City of Surrey and the Greater Vancouver Water District ("GVWD") established in 1989.

BACKGROUND

Beginning in the late 1980's, with the inclusion of the Township of Langley to the GVWD, the City of Surrey, the City of Langley, the Township of Langley and the GVWD completed a series of studies to establish how the GVWD could best service each community for the foreseeable future.

With a strategy established, the GVWD entered into supply agreements with each member municipality. The City of Surrey entered into a Water Supply Agreement (the "1989 Water Supply Agreement") with the GVWD on August 14, 1989; a copy of this agreement is attached as Appendix "II".

As part of the 1989 Water Supply Agreement, the GVWD agreed to commence construction on various infrastructure projects in the City of Surrey. These works included a reservoir in Grandview Heights, a water main between the Grandview Reservoir and the existing Sunnyside Reservoir, the 192 Street joint water main from Clayton to South Surrey and expansion of the Sunnyside Reservoir. The GVWD has completed the construction of all of these improvements.

As part of the 1989 Water Supply Agreement, the City of Surrey agreed to transfer a number of pieces of infrastructure to the GVWD as they would become part of the regional water distribution system. The City of Surrey has completed the transfer of these pieces of infrastructure to the GVWD.

As part of the 1989 Water Supply Agreement, the City of Surrey also agreed to fund 28.8% of the cost for the GVWD to construct the Jericho Reservoir, which was to be constructed to service the City of Surrey, the City of Langley and the Township of Langley. The Jericho Reservoir is to be located on lands within the Township of Langley, as illustrated in the map attached as Appendix "III".

In the late 1990's, City of Surrey staff and GVWD staff agreed that the City of Surrey's share of funding for the Jericho Reservoir needed to be revised to 33.72% as the City of Langley elected to construct its own reservoir at its own expense, thereby removing the need for them to fund a portion of the Jericho Reservoir.

As of today, the Jericho Reservoir has yet to be constructed by the GVWD.

DISCUSSION

As previously noted, City of Surrey staff and GVWD staff agreed that the City of Surrey's share of funding for the Jericho Reservoir needed to increase from 28.8% to 33.72% to reflect that the City of Langley elected to construct its own reservoir at its own expense, but the 1989 Water Supply Agreement was not revised to reflect this understanding. To address this oversight, City of Surrey staff and GVWD staff have worked to develop an Amending Agreement, a copy of which is attached as Appendix "I". Section 1 of the proposed Amending Agreement seeks to revise the City of Surrey's share of cost for the Jericho Reservoir from 28.8% to 33.72%.

In 1997, the estimated cost to construct the 39.95ML Jericho Reservoir to service the City of Surrey and the Township of Langley was \$7,570,000.00.

The estimated cost to construct the Jericho Reservoir has increased substantially since this project was originally envisioned, due to significant construction cost escalation, and increasing design construction standards/requirements (i.e., seismic).

While the cost to construct the project has substantially increased, the timing for when the reservoir is required to support growth in the City of Surrey and the Township of Langley has been deferred by almost 20 years, in large part due to decreasing water demands in each community.

At this time, GVWD staff plan to construct a portion of the Jericho Reservoir in the coming years, and the remainder of the reservoir in the future as growth in the City of Surrey and the Township of Langley materializes. The estimated cost to construct Phase 1, which is 20.61ML, is \$30,400,000.00. The estimated cost to construct Phase 2, which is 18.43ML, is \$13,300,000.00.

The City of Surrey's estimated funding requirement for Phase 1 is \$10,200,000. The funding requirements related to the City of Surrey's Phase 1 obligation is currently included in the City of Surrey's 10-Year Servicing Plan and related water development cost charge program.

As the amount owing to the GVWD is significant, a payment plan has been established in the proposed Amending Agreement. The proposed payment plan, which allows for no interest costs, is as follows:

• On or before December 31, 2018	\$ 2,400,000.00
• On or before December 31, 2019	\$ 2,000,000.00
• On or before December 31, 2020	\$ 2,000,000.00
• On or before December 31, 2021	\$ 2,000,000.00
• On or before December 31, 2022	\$ 1,800,000.00
TOTAL	\$10,200,000.00

Upon completion of Phase 1 and final determination by GVWD of the actual costs incurred by GVWD in constructing and installing Phase 1, GVWD will promptly refund the City of Surrey or the City of Surrey will pay GVWD, as the case may be, the difference between 33.72% of such actual costs and the total of the amount already paid by the City of Surrey pursuant to Section 3, such that the final amount paid by the City of Surrey in respect of Phase 1 equals 33.72% of the actual costs incurred by GVWD.

The City of Surrey's estimated funding requirement for Phase 2 is \$6,244,773.00. At present, the GVWD has yet to establish the exact timing for the construction of this phase. In an effort to address the potential for continued construction cost increases, City of Surrey staff and GVWD staff have established a payment plan in the proposed Amending Agreement. The proposed payment plan is as follows:

• On or before December 23, 2023	\$2,081,591.00
• On or before December 23, 2024	\$2,081,591.00
• On or before December 23, 2025	\$2,081,591.00
TOTAL	\$6,244,773.00

In the event that Phase 2 exceeds the current estimated cost, the GVWD will solely fund the difference. In the event that the project costs less than the estimated cost and funding provided by the City of Surrey, the GVWD will not reimburse the difference. Staff are of the opinion that the proposed payment plan establishes an equal amount of risk by both the City of Surrey and GVWD.

At present, the funding requirements related to the City of Surrey's Phase 2 obligation is not currently included in the City of Surrey's 10-Year Servicing Plan. It is recommended that the funding requirements related to the City of Surrey's Phase 2 obligation be added as a long range cost to a future edition of the City of Surrey's 10-Year Servicing Plan. With this approach, the City of Surrey would use either DCCs or utility funds to cover the costs of the prepayment in 2023, 2024 and 2025.

It is also recommended that once the actual timing and actual costs for Phase 2 become known, staff work with Local Government Infrastructure and Finance staff at the Ministry of Municipal Affairs and Housing to explore opportunities to potentially recover the costs associated with this prepayment from the development community such as through the use of development cost charges.

Agreement Fulfillment

With the execution of the Amending Agreement, the completion of the Jericho Reservoir by the GVWD, funding of 33.72% of the actual costs of Phase 1 of the Jericho Reservoir and funding of 33.72% of the estimated costs of Phase 2 by the City of Surrey, all of the obligations in the 1989 Water Supply Agreement and the Amending Agreement will be fulfilled by the City of Surrey and the GVWD.

Legal Services Review

Legal Services has reviewed this report and the Amending Agreement and have no concerns.

Finance Department Review

The Finance Department has reviewed this report and the Amending Agreement and have no concerns.

Next Steps

Following consideration of this report and the execution of the Amending Agreement by the City of Surrey, the Amending Agreement will be provided to Metro Vancouver's Utilities Committee and the GVWD Board to seek approval for the Commissioner of the GVWD to execute the Agreement.

SUSTAINABILITY CONSIDERATIONS

The 1989 Water Supply Agreement and the proposed Amending Agreement supports the objectives of the City of Surrey's Sustainability Charter 2.0. In particular, the Sustainability Charter 2.0 theme of Infrastructure. Specifically, the Amending Agreement supports the following Desired Outcomes ("DO"):

- All Infrastructure DO2: Infrastructure systems provide safe, reliable and affordable services; and
- Water DO16: Surrey's water is clean, abundant and safe for drinking.

CONCLUSION

The Engineering Department recommends that Council:

1. Authorize the Mayor to execute the Amending Agreement with the Greater Vancouver Water District attached as Appendix "I" to this report; and
2. Authorize staff to add the Phase 2 of the Jericho Reservoir to the next edition of the City of Surrey's 10-Year Servicing Plan as a non-growth cost.



Fraser Smith, P.Eng., MBA
General Manager, Engineering

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Appendix "I": Amending Agreement

Appendix "II": 1989 Water Supply Agreement

Appendix "III": Regional Water Distribution Network Map

Note: Appendices available upon request