Corporation of the City of
NEW WESTMINSTER

REPORT
Engineering Services

To:	Mayor Johnstone and Members of Council	**Date**:	January 22, 2024
From:	Lisa Leblanc Director, Engineering Services	**File**:	05.1035.10 (Doc#2403197v5)
		Item #:	2024-27

Subject: **Project Update – West End Sewer Separation and Watermain Rehabilitation**

RECOMMENDATION

THAT Council receives this report for information.

PURPOSE

To provide Council with an update, and further insights into the unique works and undertakings of the West End Sewer Separation and Watermain Rehabilitation project.

SUMMARY

This report provides Council with information related to the ongoing work on the West End Sewer Separation and Watermain rehabilitation project and sets the baseline for future updates on cost, schedule and community impacts.

BACKGROUND

New Westminster has some of the oldest infrastructure, including the highest percentage of combined sewers per kilometer of sewers in Western Canada. As of 2022, approximately 50% of the City's combined sewers and approximately 80% of its private laterals have yet to be separated.

Our mandate, regulated by Metro Vancouver, is for zero combined sewer overflows (CSOs) by 2075 through an annual separation of 1.5% of the total combined sewer

system. Metro Vancouver member municipalities are further required under the Regional Integrated Liquid Waste and Resource Management Plan (ILWRMP) to develop and implement Integrated Storm Management Plans (ISMPs) to manage storm water and protect their watersheds.

Legacy combined sewers service the West End neighborhood of New Westminster, which currently generates the greatest proportion of chronic municipal combined sewer overflows in the City. In order to reduce combined sewer overflows into the Fraser River, decrease urban flooding due to climate change and improve the quality of water into the Fraser River from the West End neighborhood, the City will proceed with the next priority phase of the annual sewer separation program by separating combined sewers in the **16th street, 18th street and 20th street catchments**. The project area is bounded by 10th avenue, 14th street, 5th avenue and 20th streets and aligns with the recently approved Sewer Asset Management Plan.

This project was awarded **$10,459,782** of grant funding under the Investing in Canada Infrastructure Program (ICIP) – Green Infrastructure – Environmental Quality stream, and will meet the following outcomes of the program:

- **Increase capacity to treat and/or manage wastewater**

    - The project will significantly reduce the volume of combined sewage effluent that currently overflows into the 16th Street, 18th Street and 20th Street outfalls, and therefore, reduce the volume of effluent and pollutants discharged into the Fraser River;
    - New Westminster's combined sewers currently discharge into the Metro Vancouver regional trunk system, which conveys wastewater to the Annacis Island Wastewater Treatment Plant. Through combined sewer separation and green infrastructure implementation, a reduction of 30% of the volume that currently enters the municipal combined system as rainwater will be immediately achieved by redirecting all street drainage to the new storm water system instead of the existing combined sewer. Subsequently, this will reduce the volume of municipal combined wastewater that enters the regional trunks and increase the excess capacity of the municipal combined sewers and regional trunk sewers. This will enable the regional wastewater treatment plants to efficiently manage and treat more raw and potent sanitary wastewater from other separated City neighborhoods and jurisdictions;
    - The project will accelerate the separation of the combined sewers to meet the Metro Vancouver Integrated Liquid Waste Resource Management Plans (ILWRMPs) target of zero combined sewer overflows by 2075. In addition, flow monitoring stations will be installed to measure the progress of combined sewer separation and the resulting reduction of combined sewer overflows over time.

- **Increase capacity to treat and/or manage stormwater**

    - The project will allow the City to implement the Citywide Integrated Stormwater Management Plan (ISMP) objectives by installing Green Infrastructure (rain gardens) across the West-End neighborhood to reduce runoff and pollutants entering the Fraser River. This will also allow rainwater to return to natural watershed pathways, including infiltration to subsoils and aquifers.

The City of New Westminster further has a Water Asset Management Plan (AMP) that prioritizes the replacement of old cast iron water mains that have reached the end of their life. The City will achieve the goals of the Water AMP, Metro Vancouver ILWRMP and Citywide ISMP by completing the below actions in the West End neighborhood:

1. Installation of 8.4 kilometers of storm sewers;
2. Replacement of 3.3 kilometers of water mains;
3. Installation of 24 infiltration bulges (rain gardens);
4. Installation of 3 permanent flow monitoring stations;
5. Installation of traffic calming bulges (concurrent with infiltration bulges);
6. Temporary and permanent patching of utility trenches in accordance with the recently approved Pavement Restoration Policy

The project is being implemented using a best-practice Project Management Framework with the support of a consultant project manager with experience delivering projects of this scale and complexity. The Project Team comprises staff in the Engineering Department and consultants responsible for the project planning, execution, tracking and close-out. The project is led through a Steering Committee, with the Directors of Engineering and Finance serving as Project Sponsors who provide oversight and direction to the project.

DISCUSSION

The West End Sewer Separation and Watermain Rehabilitation project will meet Council's Asset Management and Infrastructure Strategic priority of resilient infrastructure that meets the community's need today and into the future through the below lenses:

1. Reconciliation – Improving the City's engagement with Indigenous peoples and communities with a focus on relationship, belonging and well-being for all;
2. Public Engagement – Providing community members a voice in the projects that impact their lives and hearing different perspectives and a wide range of feedback from residents while incorporating that input as much as possible.

Reconciliation/Archaeology

The City recognizes that reconciliation can only be successfully achieved after learning and acknowledging the full truth of our colonial history. With the City proclaiming 2023 to

2024 as the year of truth, Staff have made significant efforts to ensure that truth-seeking and First Nation participation was fully embedded at the very onset of the project. Since 2022, the City and Project Team has consulted with First Nation groups that may have potential interest in the proposed project. After initial engagement, First Nation groups provided feedback and comments of their wish to have an archaeological assessment be completed for the project area. Subsequently, the City hired an archaeological consultant to complete the necessary preliminary field reconnaissance (PFR) and Archaeological Overview Assessment (AOA). Upon completion of the AOA, the draft was shared with all Nations for their approval.

Given the historical developments within the project area and that the results of the PFR and AOA show extensive past and recent subsurface disturbance, it was determined that work could proceed as proposed with the exception of the western portions of 6th Avenue (between 20th and 18th Streets), 16th Street (south of 6th Avenue), 14th Street (south of 6th Avenue), and works along 5th Avenue, where an Archaeological Impact Assessment (AIA) would be required.

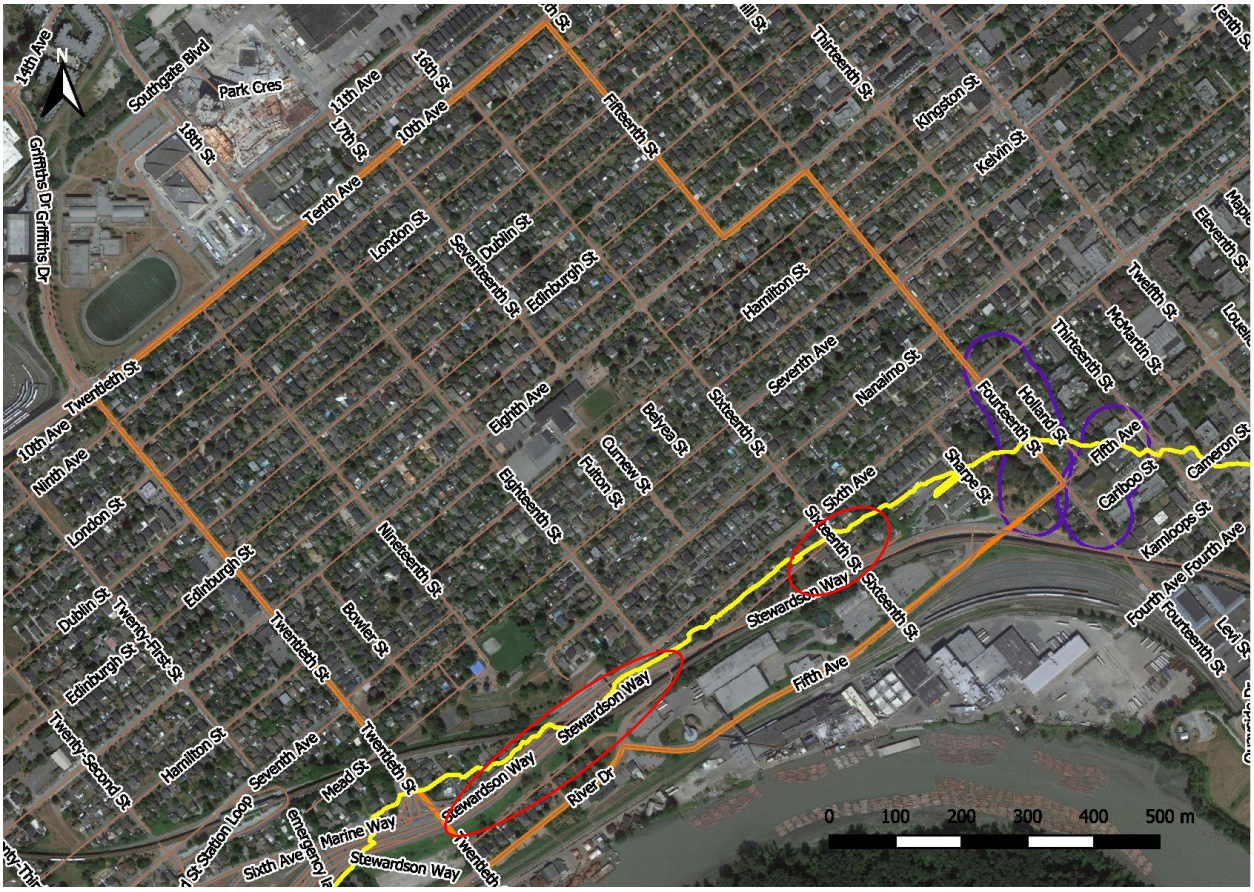
Staff initially altered the proposed construction sequence to accommodate the AIA requirement without impacting the overall schedule. Two First Nations then requested additional archaeological monitoring be conducted for the entire duration of construction, requiring a Heritage Inspection Permit to be conducted, which would severely extend the project's duration. After further engagement and discussions with the Nations, it was determined that given the existing project area topography and conditions, it would be sufficient to document all exposed sediment (exposed due to project excavations) above the 30-metre elevation contour. The documentation is to be completed through:

- Implementing a system where the contractor takes photographs of all sediment exposed within the project area and uploads them to a shared site that all involved parties can easily access. The archaeological consultant would use these photographs for analysis and reporting purposes;
- Implementing regularly scheduled archaeological field spot checks (4 hours/week) of the excavated areas (while open) throughout construction.

The engagement and consultation undertaken by the City and the First Nations was a huge achievement as it allowed the project to proceed without significant delay while still addressing the concerns and objectives of all the Nations during construction work. This result emphasizes the need for early and collaborative discussions with First Nations in order to achieve satisfactory and mutual objectives for all parties.

The main project impact areas are illustrated in red below; however, the Archaeological Impact Assessment requirement covers the entire area south of the yellow line. Staff are committed to continuing our learning and building relationships with the people whose lands we are on.

Figure 1: Project Impact Areas - Archaeology



Public Engagement/Community Impact

The Project Team is acutely aware of the significant disruptions that this project, Metro Vancouver's Annacis Water Main North (2023 – 2028) and Central Park Main No. 2 (2025-2027) projects, will have on the West End neighborhood over the next four years. To minimize the impacts on residents and businesses in the community, the West End Project Team has worked with the communications and public engagement teams at the City of New Westminster to develop a Communication and Stakeholder Management Plan that will implemented throughout the project. The plan lists all internal and external project stakeholders, including the means and frequency of communicating project goals and milestones and obtaining feedback.

The Project Team has completed the following communication activities to date:

1. Participated in the public funding announcement in June 2023 with Mayor Patrick Johnstone, BC Minister of Municipal Affairs Anne Kang and Federal Cabinet Minister Harjit Sajjan:

   a. This included a jointly written project summary with both the Federal and Provincial Governments prior to the announcement;
   b. Press Release including an on-camera announcement.
2. Reached out to the affected West End and surrounding community:
   a. Announced the upcoming West End Sewer Separation Project in advance of any major construction work through mail-outs to affected residents (sent in August 2023);
      i. Additional mail-outs and notifications will be sent out to the community when construction of the respective blocks is imminent;
   b. Reached out to the West End Neighborhood Association with the goal of scheduling a town hall meeting regarding this project to answer any of the community concerns or questions;
      i. The Project Team plans to schedule a town hall meeting in early 2024
   c. Funding partnership signboards have been erected in two locations bordering the project Area.
      i. 20th Street and 6th Avenue, North-East Corner
      ii. 16th Street and 10th Avenue, South-West Corner.
3. Developed a project webpage on the City's website. The Project Team continues to maintain project information on the City's website, including regular website updates to the project schedule, milestones and scheduled night work;
4. Ongoing open communications with Metro Vancouver's Project Teams to ensure we provide two-way dialogue and conversations on upcoming projects that overlap in the neighborhood.

As the project progresses, the Project Team will continue to adhere to the Communication and Stakeholder Management plan and provide necessary information to the relevant stakeholders on detours, road & sidewalk closures and affected bus routes and emergency response routes.

Procurement Strategy

The Project Team (in consultation with the procurement team) has elected to use a request for proposal (RFP) for the construction services of all three catchments rather than a call for tenders for each catchment. This unique methodology, using the recently approved multi-year budgets, allows for greater flexibility in project delivery and allows the team to establish a long-term partnership with a contractor. This will aid in successfully delivering and mitigating risks throughout the multi-year schedule of this project.

Other benefits of the proposed procurement mechanism include:

- Schedule recovery by reducing the procurement process from three tenders to one RFP;

- Efficiencies in costs through greater transparency between the contractor and City and based on the scale of the project;
- Fewer anticipated change requests as a result of the long-term relationship building between the contractor, consultant, and the City.

The Project Team has developed a master service agreement (MSA) that will govern the long-term business relationship between the City and contractor. A MMCD construction contract will be issued for each catchment area per our standard procurement protocol. A key principle in this procurement model is that unit rates will be negotiated with the contractor through an open-book process (transparent) for each phase of construction. This mechanism will provide the City with the flexibility to work with a contractor over a multi-year period, and the added safety net of being able to change contractors should performance be unsatisfactory. Performance measures will include meeting the requirements of the scope, schedule, and cost management plans while minimizing construction impacts on the community.

Project Schedule

The high-level project schedule is provided below. The project start date has been delayed by approximately 10 months to allow for the collaborative engagement with the First Nation groups to be undertaken. The team aims to recover this time through the new procurement model that establishes a long-term partnership with one contractor and provides flexibility and incentive to the contractor to potentially fast-track the project by working in different catchments concurrently while minimizing overall community impacts. This will enable the City to meet the Federal and Provincial government's hard deadline of March 31st, 2027.

Table 1: Project Milestones

Project Milestone	Start	End
Design		
16th Street Catchment	October 2023	November 2023
18th Street Catchment	November 2023	February 2024
20th Street Catchment	January 2024	March 2024
Construction		
16th Street Catchment	March 2024	December 2025
18th Street Catchment	August 2024	April 2026
20th Street Catchment	February 2026	March 2027

NEXT STEPS

Staff are currently in the process of securing a contractor that will work on this multi-year construction project. The procurement process is anticipated to be completed by early February 2024, with construction starting in March 2024.

Staff will continue to work with the First Nation partners on providing photo documentation during construction and completing an Archaeological Impact Assessment. Staff will regularly update the provincial and federal governments on budget forecasting and project progress as the Cost Sharing Agreement requires.

Minimizing the impact of construction on the community and providing early and advanced notification will be a key focus for this major project. Staff will schedule a town hall meeting with the West End community in early 2024 to provide further information on construction work and obtain ongoing feedback to improve project outcomes. Project information and construction updates will be available to the community through the City's Projects-On-the-Go page.

SUSTAINABILITY IMPLICATIONS

The West End Sewer Separation and Watermain Rehabilitation project has significant implications for public health, safety and quality of life, the local economy, and the environment. Environmental, social and economic impacts are highlighted below:

Environmental – A properly functioning sewer and drainage system protects the environment by reducing the risk of pollution. The City is addressing concerns related to projected increases in precipitation, associated flooding, and combined sewer overflow (CSO) risks through the West End sewer separation program. Furthermore, the City's Integrated Storm-water Management Plan (ISMP) proposes Green Infrastructure to reduce CSO risks, recharge groundwater aquifers and allow for reserve capacity in the sewer & drainage system for climate change resiliency. The proposed raingardens in the West End will meet the objectives of the ISMP.

Social – A properly functioning sewer and drainage system positively impacts public health by preventing the spread of diseases and reducing the risk of accidents and injuries caused by flooding and sewage backups while improving quality of life by reducing the risk of property damage and unpleasant odors. A properly functioning watermain system will prevent watermain breaks that may cause disruptions, property damage and contamination of the drinking water supply.

Economic – Significant capital costs are required to implement the West End Sewer Separation and Watermain Rehabilitation project; secured senior government funding will aid in meeting project objectives. Furthermore, sewer operating costs will be reduced through the installation of green infrastructure that captures and treats rainfall thus reducing the overall loading on sewers.

FINANCIAL IMPLICATIONS

The overall budget for the project is $38,000,000, of which $10,459,782 is grant-funded and will be provided by the Federal and Provincial governments through the Investing in Canada Infrastructure Program (ICIP) – Green Infrastructure – Environmental Quality Stream.

Table 2 illustrates a high-level budget breakdown for each scope item and catchment.

Table 2: High Level Breakdown of Project Budget

Scope	Task	Budget ($)	Committed ($)	Spend to Date($)
Sewer Separation	Design	$1,588,200.00	$671,333.00	$10,670.00
	Construction	$18,868,803.00	$1,338,923.00	$436,708.49
	Indirects (PM, Archaeology, etc.)	$1,335,000.00	$261,185.00	$222,206
Watermain Rehabilitation	Design	$1,856,667.00	$187,942.00	$16,767.50
	Construction	$7,408,000.00	$187,687.00	$1,025,825.54
	Indirects (PM, Archaeology, etc.)	$1,319,200.00	$383,743.00	$91,502.00
Contingency		$5,746,133.00	-	-
Total		**$38,122,003.00**	**$3,030,813.00**	**$1,803,679.53**

This project will be funded through the 2024-2028 5 year Financial Plan – Utility Funds, specifically the West End Sewer Separation business unit in the sewer capital plan and the West End Water Rehabilitation business unit in the water capital plan.

INTERDEPARTMENTAL LIAISON

This report has been collaboratively prepared by Staff from the Engineering and Finance departments.

OPTIONS

The following options are presented for Council's consideration:

1. THAT Council receives this report for information
2. THAT Council provides other direction to Staff.

Staff recommends Option 1.

CONCLUSION

This report provides Council with information related to the ongoing work on the West End Sewer Separation and Watermain rehabilitation project and sets the baseline for future project schedule, cost and community impact updates. Through the archaeological assessments and ongoing work, we continue to learn and commit to meaningful reconciliation and building relationships with the local First Nations, the urban indigenous community and the people whose lands we are on.

The Project Team looks forward to sharing further updates with Council as major milestones and activities are undertaken.

APPROVALS

This report was prepared by:
Sara Mokhtari, Project Coordinator, RAM Consulting
Brittany Tom, Integrated Storm Water Engineer
Amir Aminpour, Engineering Projects Manager

This report was reviewed by:
George Otieno, Acting Manager, Infrastructure Planning
Heather Hansen, Project Manager, RAM Consulting
Ronald Au, Sr. Financial Services Analyst, Finance
Gary So, Sr. Manager, Finance

This report was approved by:
Kwaku Agyare-Manu, Acting Director of Engineering Services
Lisa Leblanc, Acting Chief Administrative Officer