



COUNCIL REPORT

Report Date: April 1, 2025
Contact: Armin Amrolia
Contact No.: 604.873.7627
RTS No.: 17867
VanRIMS No.: 08-2000-20
Meeting Date: April 15, 2025
[Submit comments to Council](#)

TO: Vancouver City Council

FROM: Armin Amrolia, Deputy City Manager

SUBJECT: Mobile Pump-out Service Provision and Aquatic Environments Action Plan Progress Update

Recommendations

- A. THAT a mobile sewage pump-out service be delivered in False Creek for the 2025 to 2027 boating seasons, inclusive as described in this report.
- B. THAT any future service beyond the 2027 boating season be considered as a part of Phase 3 of the Healthy Waters Plan and subject to future Operating Budgets.

Purpose and Executive Summary

This report seeks Council endorsement to continue the seasonal mobile pump-out service in False Creek for the 2025 to 2027 boating seasons. Since 2019, the City has been providing this service as a tangible pollution reduction measure to support improvements to water quality in False Creek. Council has approved the service for specific periods of time, with the most recent approval extending through the 2024 boating season.

This report recommends continuing the service at an annual cost of \$65,000 funded from the sewer utility for an additional three boating seasons. Following this period, this report recommends that any further service be evaluated as part of the broader review of the City's pollution source control programs for sewage and rainwater management being conducted as part of Phase 3 of the Healthy Waters Plan.

By assessing the mobile pump-out service alongside these other pollution control initiatives, the City can consider its relative effectiveness and be in a better position to ensure its resources are being directed toward the most impactful and cost-effective solutions for reducing pollution to False Creek.

In addition to providing information on the pump-out service, this report also provides a progress update on the suite of initiatives being advanced to improve water quality in False Creek over the past two years, in addition to actions taken to address other aquatic environments in Vancouver. Regular reports have been provided to Council on the actions being taken since Council's adoption of the Aquatic Environments Action Plan in 2020.

Council Authority/Previous Decisions

On February 12, 2020, Council adopted¹ the following recommendations:

- A. THAT a mobile sewage pump-out service be delivered in False Creek for the 2020 to 2024 boating seasons, inclusive as described in the Report dated January 14, 2020, entitled "Aquatic Environments: Mobile Pump-out Service Delivery".

- B. THAT staff provide annual updates to Council on service performance as part of the City's False Creek Water Quality Improvement Initiative, as well as additional options for full cost recovery beyond those articulated in the Report dated January 14, 2020, entitled "Aquatic Environments: Mobile Pump-out Service Delivery", including but not limited to senior government funding.

City Manager's Comments

The City Manager concurs with the foregoing recommendations.

Context and Background

Aquatic Environments Action Plan

As a waterfront city, Vancouver's aquatic ecosystems—including streams, lakes, the Fraser River, False Creek, and other coastal waters—are vital to the city's identity and provide a wide range of community benefits. However, as Vancouver has grown, its aquatic environments have faced various challenges. Development has led to the infilling of streams and coastal areas, shoreline hardening, loss of riparian zones, changes to water flow patterns, and the introduction of pollutants, along with impacts from activities occurring on the water. A key area of concern has been the impact on water quality.

Improving water quality and restoring urban aquatic environments is a complex, long-term undertaking, especially in densely populated areas. To provide a strategic approach for addressing this challenge, Council adopted the Aquatic Environments Action Plan. Adopted in February 2020, this plan set a two-pronged approach combining strategic planning with immediate, tangible actions. This "action while planning" approach allows for both concrete short-term improvements and the development of broader, systemic changes needed for significant, long-term revitalization.

Regular updates on progress being made are provided to Council, with the last update provided on February 24, 2023. A description of the progress made since is provided in the Aquatic

¹ <https://council.vancouver.ca/20200212/documents/pspc20200212min.pdf>

Environments Action Plan – 2023 to 2024 Progress Report, included as Appendix A. Similar to previous years, a suite of on-the-ground tactical as well as strategic actions were advanced across City departments and the Park Board to support water quality improvements in False Creek and improve ecological conditions in aquatic environments.

False Creek Water Quality Improvement Initiative

As part of the City's Aquatic Environments Action Plan, efforts to protect and restore Vancouver's waterways have included a focus on actions to improve water quality in False Creek. A wide range of actions have been advanced across City departments and the Park Board for some time. To ensure a coordinated and comprehensive approach, the City launched the False Creek Water Quality Improvement Initiative, an ongoing interdepartmental program since 2018. Actions advanced under the False Creek Water Quality Improvement Initiative over the past two years are included in the progress update provided in Appendix A.

Mobile Pump-out Service

The City's mobile pump-out service is one action being advanced under the False Creek Improvement Initiative. First launched as a pilot program in 2017, the City's mobile sewage pump-out service provides recreational and live-aboard boaters with an easy and convenient method to dispose of the sewage contents of their vessels and prevent such waste from being directly discharged into the environment. The service is offered seasonally, during the boating season. Following the success of the mobile pump-out pilot program, Council approved extending the pump-out service for another five-year term from 2020 to 2024.

The service has been provided at an annual cost of approximately \$65,000, funded from the sewer utility. Over the years, service improvements have been made, resulting in extended service periods for the same budget, reductions in costs per volume of sewage pumped, increased use of the service, and higher volumes of sewage being directed to the sanitary sewer system.

Since first introduced in 2017, the mobile pump-out service has resulted in the diversion of approximately 485,000 L of sewage from vessels in False Creek. Boater use of the system has increased from 169 pump-outs in 2017 to a peak of usage of 1009 pump-outs in 2023. Many boaters have indicated that the service provides a practical option for those who have challenges using existing stationary pump-out facilities due to vessel size or weather conditions when a pump-out is necessary. A summary of the pump-out metrics is provided in Appendix B.

Discussion

False Creek experiences high levels of boating activity, and despite existing regulations, preventing illegal sewage discharge remains a significant challenge. While Transport Canada is responsible for on-water enforcement, effective enforcement is difficult due to the challenges of detecting real-time discharges and identifying the specific vessels responsible.

The City's mobile pump-out service provides an opportunity to reduce pollution to False Creek in the immediate term by providing an easy and convenient option to support responsible sewage management. The boating community has identified that the no-cost and convenient nature of the mobile pump-out service have been key to its use and in this respect, critical to its success in meeting its pollution reduction objectives.

By providing this mobile pump-out service, the City can take concrete steps to enhance water quality in False Creek by facilitating responsible sewage disposal from recreational and liveaboard vessels. This service not only promotes compliance with sewage disposal regulations but also supports broader water quality improvement initiatives outlined in the Aquatic Environments Action Plan and the False Creek Water Quality Improvement Initiative.

The City has sought funding from Transport Canada to support the program but has not been successful. No other grants or funding opportunities have been identified. If endorsed to continue for another term, staff will continue to explore external sources and partnerships. The service would also be evaluated as part of the suite of source pollution prevention measures that the City is doing or could be doing as part of the review being done through the Healthy Waters Plan. By evaluating the mobile pump-out service in conjunction with other pollution control measures, the City will be in a better position to evaluate its effectiveness relative to other initiatives, allowing for strategic allocation of resources toward the most impactful and cost-efficient solutions.

Financial Implications

The cost to extend the mobile pump-out services from 2025 to 2027 boating seasons is proposed to be continued at \$65,000 per year, funded by the sewer utility budget.

Legal Implications

The Vancouver Charter authorizes Council to provide the pump-out service and regulate in relation to sewage discharges.

* * * * *

Appendix A: Aquatic Environments Action Plan

Progress Report 2023 to 2024



Introduction



Water is considered to be the “Life Giver” by the xʷməθkʷəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and səlilwətał (Tseil-Waututh) peoples. Since time immemorial, Indigenous communities have been the stewards of local waterbodies and relied on them in many ways to support their communities, including hunting, fishing, collecting other resources, and cultural practices. Vancouver’s history of colonization and industrialization has significantly impacted its aquatic environments in many ways, including leading to degraded water quality in the surrounding marine waters and the near elimination of freshwater streams. False Creek was once five times its present size and included a large tidal mud flat that was blanketed with thick eelgrass, plentiful clams, and countless birds. Over time, False Creek and most freshwater streams were filled in. Today, only nine kilometres of Vancouver’s estimated 105 km of streams remain today.

Ecological restoration is a key priority of the City and its residents and one of the priority policy areas identified in the Vancouver Plan. The Aquatic Environments Plan sets a strategic pathway for improving water quality and ecological health of the City’s aquatic environments. Actions taken by the City and the Park Board are summarized and reported to Council on a regular basis. This report summarizes the progress made in 2023 and 2024.

Freshwater Ecosystems

There are only about 9 km of flowing streams remaining in Vancouver which include Musqueam Creek, Vivian Creek, Still Creek, Spanish Bank Creek, and Beaver Creek. About 53 ha of freshwater environments remain in the City with the largest areas being Lost Lagoon, Beaver Lake, Trout Lake, the Jericho Ponds, and Sanctuary Pond in Hastings Park. The City and Park Board have been working to restore and improve freshwater environments for some time. A key milestone was achieved in 2024, with the completion of the Tatlow Creek restoration project.

Tatlow Creek

In 2024, the Park Board completed the construction of the Tatlow Creek restoration work. The project has restored habitat for birds, pollinators and aquatic species, and includes pollutant-tolerant plants to manage water quality in the creek and English Bay. The project was supported financially by the City, the Government of Canada's Natural Infrastructure Fund, and the Riley Foundation.



Above: Completed restoration works at Tatlow Creek.

Beaver Lake

Works were completed in Spring 2024 to trial an invasive vegetation control method to remove ornamental lilies at Beaver Lake in Stanley Park. These invasive species deplete water quality and reduce the total water volume available. There may be continued work in 2025 to remove invasive plants, improving habitat and water quality.

Trout Lake

The floating habitat feature in Trout Lake has been growing and thriving since it was installed in 2022. Native wetland plants including sedges and rushes create habitat for life above and below the surface. The submerged roots of these plants help to purify water by supporting microorganisms that consume algae, carbon, and excess nutrients



Above: Floating habitat in Trout Lake in July 2024.

Canyon Creek

Construction works is nearing completion on a project to daylight a historic stream at Spanish Banks West Extension Park. This Park Board project will restore habitat for birds, fish and amphibians, and improve connectivity between Canyon Creek's headwaters in Pacific Spirit and its outlet at Burrard Inlet. Technical assessments were completed and detailed designs developed throughout 2023 and 2024. The design includes green infrastructure features to clean stormwater from the nearby parking lots and maintain good water quality in the creek.

Musqueam Creek

Since 2021, the City has been participating in a multi-agency working group led by Musqueam Indian Band staff to improve water quality in Musqueam Creek. The City has been conducting pollution investigations to identify sources of pollution from City infrastructure and this work continued in 2023 and 2024. In 2024, the City also began exploring stormwater treatment options with UBC to address non-point source pollution in the Creek. The City also began assisting the Musqueam Indian Band with identifying errant sanitary sewer cross-connections.

False Creek Water Quality

The City and Park Board have been pursuing efforts to improve water quality in False Creek for some time, advancing both short-term and long-term initiatives. In accordance with Council's adopted Aquatic Environments Action Plan, the focus of the work has been on reducing microbial impacts to water quality, but many of the initiatives contribute to overall improvements in other ways.

Given the complexity of the urban ecosystems surrounding False Creek, improving water quality necessitates a long-term approach involving multiple stakeholders and jurisdictions, and is dependent upon systematic effort across a suite of prioritized action areas. The City categorizes the actions that it and the Park Board have taken to improve water quality in five priority areas:

1. Source Control
2. Research and Assessment
3. Ecosystem Health Improvement
4. Strategic Planning
5. Engagement, Partnerships and Inter-agency Coordination

The following sections provide updates on progress and actions taken in each of these priority areas in the False Creek watershed in 2023 and 2024.



Source Control- Reducing Land-based Discharges to False Creek

Sewage discharges from land are one source of microbial pollution to False Creek. These discharges include combined sewer overflows which discharge during periods of higher rainfall as well as illegal cross-connections where sewer pipes are illegally connected to the City's storm sewer system. Polluted rainwater runoff can also be a significant contributor of microbial pollution, particularly in areas with high levels of impervious surfaces such as roads, sidewalks, and rooftops. Unlike natural landscapes that absorb and filter rainwater, impervious surfaces prevent infiltration, allowing runoff to gather pollutants.

Reducing Combined Sewer Overflows (CSOs)

The original sewer system in Vancouver combined stormwater/rainwater with sanitary sewage in what is known as a combined sewer system. These systems were built with sufficient capacity to handle sanitary flows but only a portion of stormwater runoff. During some high-precipitation events, pipe capacity can be exceeded and combined sewage and stormwater overflow into local water bodies, including False Creek. These occurrences are called combined sewer overflows (CSOs).

The City has been replacing combined sewers with a separated sanitary and stormwater sewer system for many decades. Three City of Vancouver outfalls and one Metro Vancouver outfall that receive periodic CSOs remain in False Creek. In 2024, a sewer separation project was completed that redirected stormwater flow from 18,000 m² of area from the Crowe St CSO catchment. This work is anticipated to help reduce the volume and frequency of combined sewer overflow events in False Creek.



Green Rainwater Infrastructure Program

The City's Green Rainwater Infrastructure (GRI) initiatives provide a range of benefits for managing rainwater and urban runoff, including enhancing rainwater absorption, replenishing groundwater, improving urban runoff water quality, and reducing drainage demands. Additionally, GRI initiatives help decrease the frequency and duration of Combined Sewer Overflows (CSOs) by limiting the volume of rainwater entering the piped sewer system.

In March 2023, the City, Park Board, and Government of Canada (Natural Infrastructure Fund) announced a joint investment of more than \$36.2 million toward green rainwater infrastructure. This funding was used in 2024 to advance the planning and design for several projects in the False Creek catchment such as the Broadway Subway GRI features, plazas incorporating GRI, and Terminal Ave street trees.

The project at St. George Rainway reflects a community vision to remember the historic waterway that existed in the neighbourhood before urban development. Portions of the St. George Rainway between E 5th and E 7th Ave were completed in 2024, and the remaining span from E 7th to Broadway is scheduled to conclude by Spring 2026, with the planning and design advanced in 2023/24. The project will help to reduce combined sewer overflows into False Creek.

Annual routine maintenance of GRI bioretention assets in the False Creek basin and the City overall is prioritized by the City to ensure they function well to receive and treat road runoff.

Source Control - Supporting Responsible Boat Sewage Management in False Creek

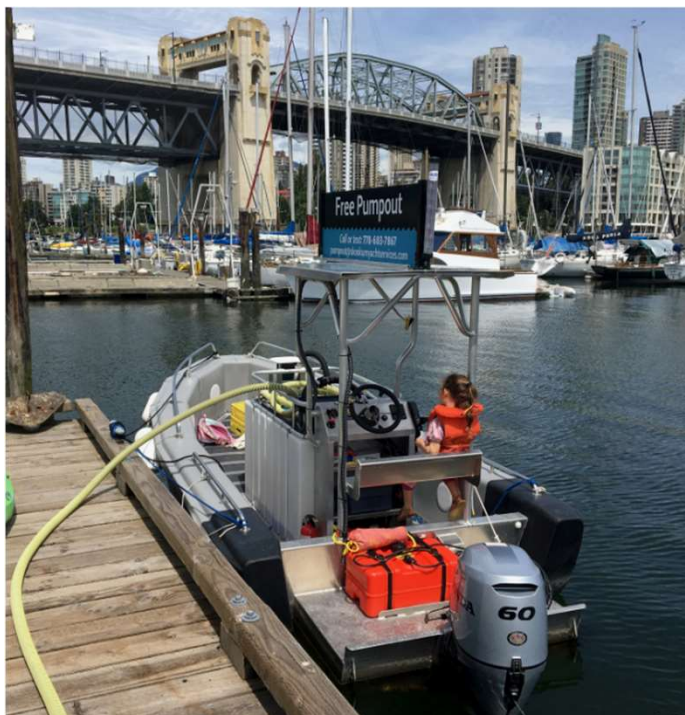
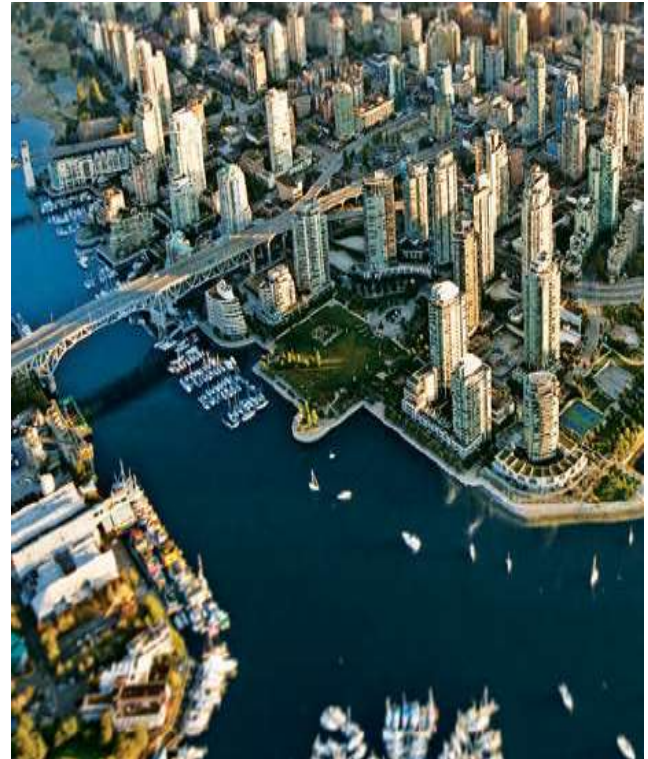
While regulating and enforcing marine vessel sewage disposal is a federal responsibility, the City and Park Board are working to support responsible sewage management by boaters through use of available local government tools. Past efforts have included education and engagement as well as establishing requirements for the provision of pump-out facilities and services at marinas. In 2023 and 2024, efforts continued to support making pump-out service convenient and easy, and ensuring marinas remain in compliance with City requirements.

Marina Compliance Promotion

Initiated in 2018, the City's Marina Compliance Promotion program continued to be implemented through 2023 and 2024. This program seeks to ensure compliance with the City's *Health By-law* which:

- prohibits boaters from discharging any polluting substance,
- prohibits marina operators from allowing boaters to discharge polluting substances in their marinas, and
- requires all marinas to have an operational pump-out facility.

In 2023 and 2024, no significant compliance issues were identified.



Pump-out Services for Boaters

In 2023 and 2024, the Park Board has continued to provide free stationary sewage pump-out services at the two civic marinas in False Creek.

Since 2017, the City has also been providing a mobile pump-out service to assist those where access to the stationary pump-outs is difficult and provides a convenient option for all boaters. In 2023 and 2024, the boat conducted 1,964 pump-outs which resulted in the collection of approximately 152,000 L of sewage. Since the program launched in 2017, roughly 484,000 L of sewage has been pumped out of boats in False Creek and diverted to the sewage system with annual volumes generally increasing each year.

Research and Assessment - Investigating Pollutant Sources and Strengthening Understanding of False Creek

The complexity of False Creek, combined with limitations in conventional water quality testing, makes it challenging to identify pollution sources and evaluate impacts. Enhancing understanding of system conditions including discharge flows will help the City and Park Board prioritize investments in the most critical areas.

Monitoring Sewer Flow

The City started monitoring combined sewer overflows into False Creek in 2019, installing ten sensors at potential overflow locations. In addition, In 2023 and 2024, the City improved and expanded its combined sewer overflow (CSO) flow monitoring system.

Specifically, monitoring was enhanced at Granville, Laurel, and Crowe St. overflow stations to improve event recognition and volume estimates. In 2024, monitoring in the Terminal catchment was upgraded to improve performance and improve volume estimates. An additional site was also added in Terminal catchment. Presently, there are 11 monitoring stations with respect to False Creek CSOs.

Adding these flow monitoring stations has given the City a much better understanding of CSO volumes and rainfall events that trigger CSOs.

Undertaking Water Quality Assessment Studies

Annual water quality testing by Metro Vancouver as part of the beach water quality program provide seasonal information on microbial conditions in False Creek.

Since 2018, the City has also been conducting targeted pollution studies. Results to date continue to find that water quality within marinas generally meets water quality objectives, indicating that boats in marinas are unlikely to be a significant source of pollution.

Targeted Sediment Investigation & Remedial Options Analysis

Legacy sediment contamination has been identified in sediment throughout False Creek due to the historical infilling and heavy industrial activity along the shoreline, which included a railyard, sawmills, a coal gasification plant, a wood creosote facility, and many other industries.

In 2024, the City undertook a targeted sediment investigation to assess sediment quality in the east end of False Creek in support for the planned deconstruction of the Expo Deck. This work contributed to a sediment remediation options analysis to plan for the remediation of the sediment in the City owned water lot.

The goal is to prepare for the necessary sediment remediation to support the future intertidal and shoreline restoration as part of the planned park developments in East Park and North East False Creek Park.



Ecosystem Health Improvements in False Creek

Enhancing overall ecosystem health can further support efforts to improve water quality in False Creek. For example, restoring natural shorelines helps regulate water temperature, cycle nutrients, remove sediments, and filter pollutants, while also creating habitat and food sources for wildlife. When these ecological processes function effectively, they contribute to natural improvements in water quality.

East Park

In November 2024, the Park Board approved a concept plan for Phase 1 of a new park (known for now as “East Park”) along the False Creek shoreline near Olympic Village. The concept plan for Phase 1 includes key features which will improve False Creek, such as green rainwater infrastructure to improve water quality in False Creek, biodiversity and tree canopy improvements, and opportunities for permanent cultural expression.

Detailed design work will be conducted throughout 2025-26, with construction anticipated to begin in late 2026.



False Creek Pacific Herring

Throughout 2023 and 2024, the City continued its partnership with UBC to support research on herring in False Creek. Pacific herring are a native forage fish and keystone species that has been important to the culture and livelihoods of Coast Salish peoples for generations.

Students in the 2023-24 cohort demonstrated how the herring spawn matters for biodiversity in False Creek, as they observed several other species congregating near herring nets including pipefish, nudibranch, sea stars, and seals. Notably, a nudibranch egg sac was observed on the herring nets, suggesting that habitat improvements for herring are also supporting other organisms.

In 2023-24, student researchers observed a later spawn event than previous years, which they suspected happened because of a cold snap. The 2024-25 cohort did not observe any spawning which may similarly have happened because of especially cold temperatures through January and February this year.



Strategic Planning – Integrating False Creek Water Quality Considerations

The City is striving to take a comprehensive approach to improving water quality in False Creek. While immediate actions such as the mobile pump-out service tend to be more visible, the City is also focused on driving long-term change by incorporating water quality considerations into its broader strategic and community plans. These plans look at how upland community development impacts water quality, recognizing that it's not just what happens on the water that matters, but also what occurs on the surrounding land.

Healthy Waters Plan

The Healthy Waters Plan is the City's long-range sewage and rainwater management plan currently under development. In 2024, draft key directions were developed, which were to:

1. enhance sewer separation in a more strategic way,
2. expand the implementation of green rainwater infrastructure and natural areas, and,
3. optimize rainwater management policies for redevelopment.

These directions were approved by Council on February 4, 2025, along with direction to incorporate the Key Directions in future capital planning. The Key Directions aim to deliver on a broad range of objectives, including improving water quality in False Creek.



Vancouver Plan Implementation – Ecology Directions

Throughout 2023 and 2024, the City undertook action to implement the ecological directions set out in the Vancouver Plan. Work included mapping to identify ecological areas and efforts to advance implementation of the 100-year Ecological Vision.

The results of this work are now being used to inform the City's Official Development Plan (ODP), currently under development.

Engagement, Partnerships & Inter-Agency Coordination

While the City has a key role to play, improving water quality in False Creek is dependent upon community-wide efforts and action being taken across multiple agencies and organizations. Realizing improved conditions in False Creek will require collective action, from strengthening pollution reduction efforts, addressing legacy contamination and enhancing ecological restoration efforts. Long-term success will depend on sustained collaboration, innovation solutions, and ongoing stewardship to ensure a healthier and more resilient False Creek.

Burrard Inlet Roundtable

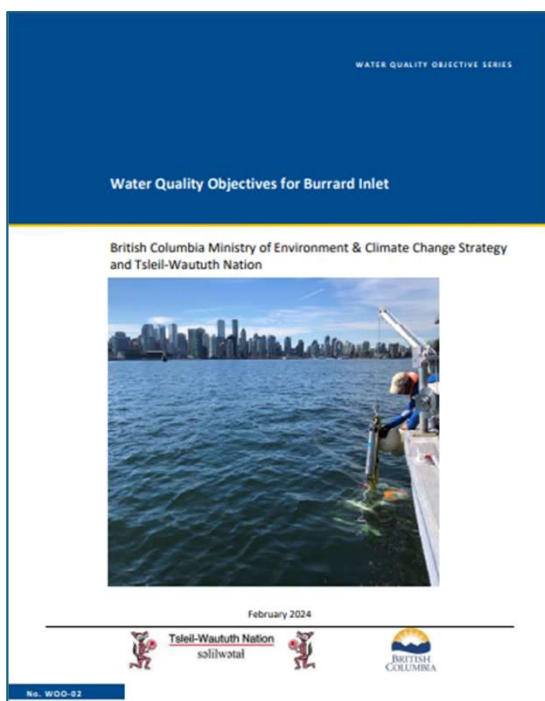
The City continued its participation in the Burrard Inlet Roundtable and Technical Working Group, a multi-stakeholder partnership initiative led by the səlilwətał (Tseil-Waututh) Nation in partnership with the BC Ministry of Environment and Parks. A key focus of the participation has been to support the update of the Burrard Inlet Water Quality Objectives (WQOs). WQOs represent safe level of substances in B.C. waterbodies.

In 2024, updated Burrard Inlet WQOs were co-signed by the B.C. government and the səlilwətał (Tseil-Waututh) Nation. Once approved, they must be considered in all Ministry of Environment and Climate Change Strategy decisions. The WQOs may also be used to inform resource management or other decisions by other agencies.

Microbial Source Tracking Working Group

The Microbial Source Tracking Working Group is a multi-agency group convened in 2024 by the City of Vancouver and comprised of representatives from the City, Metro Vancouver, Vancouver Coastal Health, BC Centre for Disease Control, McMaster University and the Raincoast Conservation Foundation.

The purpose of this group is to share research and project results and identify areas for collaboration in the field of microbial contamination source tracking. The overall goal is to improve inter-agency cooperation and collaboration to improve water quality impacted by pathogens.



Conclusion



In 2023 and 2024, the City and Park Board made continued progress on a series of initiatives aimed at enhancing water quality and improving overall health of aquatic environments. Efforts focused on addressing specific pollution sources while supporting ecological restoration and other improvements.

During this reporting period, the City also advanced longer-term strategic initiatives designed to foster broader systemic changes. Notably, the City began implementing the ecological directions outlined in the Vancouver Plan and progressed the development of the Healthy Waters plan, which among other objectives, aims to reduce pollution from the City's sewer and rainwater management systems to aquatic environments.

Recognizing the numerous community benefits of healthy aquatic environments, work continues to improve water quality and ecological health. As Vancouver continues to grow, these efforts will remain crucial to ensure that aquatic ecosystems improve and are healthy for future generations.

APPENDIX B
Mobile Pump-out Service Summary

	2017	2018	2019	2020	2021	2022	2023	2024
Operating Days	37	79	78	76	84	82	96	96
Total Number of Pump-outs	169	562	931	820	921	851	1009	955
Daily Average Users	4.6	7.1	11.9	10.8	11.0	10.4	10.5	9.9
Daily Max Users	11	18	29	20	25	37	29	29
Total Volume (L)	19,790	47,890	66,755	55,135	63,875	78,705	76,435	75,720
Average Pump-out Volume (L)	117	85	72	67	69	92	76	79