

ADMINISTRATIVE REPORT

Report Date: December 18, 2018
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Meeting Date: February 13, 2019

TO: Standing Committee on City Finance and Services

FROM: General Manager of Real Estate and Facilities Management in consultation with the General Managers of Engineering Services and the Vancouver Board of Parks and Recreation

SUBJECT: False Creek Water Quality Improvement Initiative: Mobile Pump-out Service and Update

RECOMMENDATION

- A. THAT Council direct the General Manager of Real Estate and Facilities Management to extend the pilot mobile sewage pump-out service in False Creek for the 2019 boating season.
- B. THAT Council support, in principle, the delivery of a mobile sewage pump-out service in False Creek for the 2020 to 2024 boating seasons, inclusive, and that staff report back with details on a recommended funding option to support this five-year service.

REPORT SUMMARY

The purpose of this report is to:

- respond to Council's resolution from February 21, 2018 to report back on the results of the 2018 pilot mobile sewage-out service; and
- seek Council endorsement for the continuation of a mobile sewage pump-out service in False Creek.

This report also provides Council with an update on the suite of key initiatives underway to improve water quality in False Creek.

COUNCIL AUTHORITY/PREVIOUS DECISIONS

On February 21, 2018, Council adopted¹ the following recommendations:

- A. THAT Council direct the General Manager of Real Estate and Facilities Management to extend the pilot mobile sewage pump-out service in False Creek for the 2018 boating season, and report back on the success and findings of the project;
- B. THAT Council support proposed changes to the *Health By-law* to strengthen requirements for the provision and use of sanitary pump-out facilities at marinas, and direct the Director of Legal Services to bring forward for enactment the amendments generally set out in Appendix 1;
- C. THAT Council support proposed changes to the *Ticket Offences By-law* to enable the City to issue tickets for offences under the *Health By-law*, and direct the Director of Legal Services to bring forward for enactment the amendments generally set out in Appendix 2; and
- D. THAT Council support proposed changes to the *License By-law* to remove parallel provisions regarding marina operations, and direct the Director of Legal Services to bring forward for enactment the amendments generally set out in Appendix 3.

CITY MANAGER'S/GENERAL MANAGER'S COMMENTS

The City Manager and General Manager of Real Estate and Facilities Management support the recommendations of this report as they respond to Council direction and will continue to improve Vancouver's marine ecosystem health and water quality for the use and enjoyment of the community.

REPORT

Background/Context

With 'Clean Water' and 'Access to Nature' being key components of Vancouver's *Greenest City Action Plan*, and a related priority² being to restore aquatic and riparian ecology and provide safe, accessible waterfront recreation, Council has provided consistent direction for targeted actions to improve water quality in False Creek.

While water quality in False Creek has improved substantially over the past several decades, one of the key parameters of concern with respect to recreational activities is elevated levels of microbial contamination. A number of potential sources of microbial pollution in False Creek have been identified, including combined sewer overflows³. (CSOs) operated by the City and Metro Vancouver, sewer system cross-connections, storm water carrying land-based pollution, and sewage from boats.

¹ <https://council.vancouver.ca/20180221/documents/pspc2.pdf>

² <https://vancouver.ca/your-government/council-priorities.aspx>

³ <https://vancouver.ca/home-property-development/separating-sewage-from-rainwater.aspx>

The City and Park Board have implemented a suite of initiatives to reduce these sources of pollution and improve environmental quality in False Creek as part of the City's overarching False Creek Water Quality Improvement Initiative. Key updates on the suite of actions being advanced, including recent by-law amendments directed by Council from their February 21, 2018 meeting, are provided in Appendix A.

One relatively recent initiative has been to pilot a seasonal mobile pump-out service. This pilot, first launched in 2017, was extended to cover the 2018 boating season. The pump-out boat is intended to assist boaters in undertaking responsible sewage management and reduce unlawful direct discharge in False Creek by making it easy and convenient for boaters to discharge sewage to the sanitary system. In 2018, the service was provided during peak boating days from June 1, 2019 through to mid-September. A total of 561 boats were serviced during this period, resulting in over 48,000 litres of sewage being discharged into the sanitary system.

The following section provides further service details as well as presenting the basis for recommending that the mobile pump-out service continue for the 2019 boating season.

In addition to the mobile pump-out service, other key actions for 2019 include:

- advancing a 2019 marina compliance program;
- undertaking further water quality assessment studies;
- continuing development of the False Creek hydraulic and water quality performance model; and,
- developing a City webpage on False Creek water quality to strengthen communication, provide information on City water quality initiatives, and further engage the community on actions they can take to reduce pollution.

Strategic Analysis

Service Results

The mobile pump-out service targeted recreational and live-aboard boaters in False Creek over two seasons. The second year of the pilot provided an opportunity to refine service delivery and gain further data to assess overall service value. A key improvement was the use of a purpose-built pump-out boat with a larger holding tank capacity. This improvement allowed the service to reach more boats per hour and helped reduce the cost per litre of sewage pumped by almost 50%. During 2018, it was also possible to initiate the service at the beginning of peak boating season.

The boat performed an average of 7.1 pump-outs per day in 2018 (up from 4.6/day last year), serving up to 18 vessels per day (up from 11 last year). Total use of the service increased from 169 pump-outs in 2017 to 561 pump-outs in the 2018 season. As noted, the service pumped approximately 48,000 litres of wastewater from boats in 2018 which was substantially higher than the 20,000 litres pumped in 2017. While it is difficult to predict the fate of this sewage in the absence of the service, user feedback suggests that the pump-out boat may have prevented between one third and one half of the volume pumped in each year from being discharged into local waters. Further details on the service metrics for both years are provided in Appendix B.

A survey of users of the service was conducted in 2017 and 2018. In both years, a full 100% of respondents indicated they were satisfied with the service and would recommend it to other boaters. Many boaters provided feedback that the service was

“very important” as it provided a practical option, particularly for those who have challenges using existing stationary pump-out facilities as a result of vessel size, unfamiliarity with pump-out equipment, or other factors. Boaters also noted that the presence of the pump-out boat on the water served to increase general awareness of marine water quality issues and the importance of proper vessel sewage management. Feedback received from boaters who used the mobile pump-out service is provided in Appendix C.

A survey conducted in 2017 found that the mobile pump-out service also received strong support from marina operators in False Creek, with 12 out of 13 surveyed marinas responding in favour of the service continuing (with one small marina saying that they were unsure).

Recommendation

Based on the success of the 2018 pilot mobile pump-out service, staff recommend that the City extend the pilot for one additional year and then commit to providing an ongoing service for the next five years. This recommendation is based on the following rationale:

- an extension of the pilot would enable the City to make additional service refinements prior to issuing a multi-year service request;
- an extension of the pilot would provide time to establish a funding source to fund a multi-year service that covers a longer season; and,
- the five-year period would provide an adequate period to foster behaviour change in the boating community and then re-assess ongoing merit based on realized service benefits and water quality priorities at that time.

The cost for the pilot extension would remain at \$75,000 and be funded through existing budgets. The service would again be made available from the beginning of June to mid-September.

It is recommended that the five-year service be made available from April 1 through to the end of September to capture more boating activity in False Creek and attempt to reduce early microbial loadings which can naturally populate as temperatures increase. With the extended service period, the annual budget for the five-year service period is estimated to be \$90,000. Service hours would be customized throughout the period to optimize usage, with reduced hours being provided during the spring and fall shoulder seasons.

It is proposed that the annual cost for the five-year service be funded through utility user fees applied to marinas in False Creek. This funding model would be consistent with a user-pay approach in that it would apply only to boaters that are able to use the pump-out service in False Creek. Staff will report back with details of the recommended funding option to support the five-year service.

Prior to the end of the fifth year of service, staff would bring back a report to Council with overall service results and a recommendation on whether the service should be continued given service outcomes and City priorities at that time.

Public/Civic Agency Input

The proposal to extend the pilot mobile pump-out service was considered and supported by the False Creek Water Quality Working Group (FCWQWG). Users of the mobile service (99%) strongly supported its continuation, as did the majority (92%) of marina owners/operators in False Creek surveyed in 2017.

Implications/Related Issues/Risk

Financial

The cost to extend the pilot mobile pump-out service for the 2019 boating season is \$75,000. The financial resources required will be funded from the REFM 2019 capital budget for Environmental Services.

The cost to run the mobile pump-out service for the 2020 to 2024 boating seasons is proposed to be \$90,000 per year. A proposed financial strategy to fund the five-year program based on user fees applied to marinas will be reported back to Council.

Human Resources/Labour Relations

There are no anticipated implications for human resources or labour relations.

Environmental

The recommendations of this report are directed towards improving marine water quality and environmental health, as well as the waterway use experiences of the community.

Legal

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

Other

The proposed recommendations are intended to support responsible sewage management by boaters for the improved health of recreational users, the broader community, and the marine environment.

CONCLUSION

Improving water quality in False Creek is a long-term endeavour requiring systematic effort by various stakeholders and jurisdictions to address multiple pollution sources. One key area is improving sewage management by boaters. To continue to advance progress in this important area, this report recommends that the City continue to provide a seasonal mobile pump-out service through to the 2024 boating season.

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False Creek Water Quality Improvement Initiative

Progress Report 2018

Introduction

False Creek is an inlet off of English Bay, separating the downtown peninsula from the rest of Vancouver to the south. The waterway once provided valuable fishing, harvesting and hunting resources for the Musqueam, Squamish and Tsleil-Waututh Nations, and remains an important part of the First Nations cultural and ecological landscape. Once extending as far east as what is now Clark Drive, much of False Creek was infilled during the early 1900s to support railway expansion projects and create additional land for marshalling yards and terminals. Through to the 1950s, False Creek served as the industrial heartland of Vancouver with sawmills, ship building, small port operations, and other industries joining the railway terminals. With a vision to transform the area into a vibrant mixed-used community, efforts to redevelop the area began in the late 1960s.

While much improvement has been made to date, work continues to be needed to remediate the damage from past activities as well as address impacts from current activities. One key area of focus is improving the water quality in False Creek, both to support the wide range of community uses as well as to improve ecological health. The purpose of this report is to provide an annual update on those actions taken by the City and Park Board in 2018 to contribute to improving False Creek water quality.

Background

A primary pollutant of concern affecting water quality in False Creek is microbial contamination, which is assessed through measurements of indicator bacteria such as *E. coli*. With the many potential sources of microbial pollution that exist at any given time – some of which, like boats, are mobile – as well as changing conditions with respect to water currents and other fluid dynamics, determining exact sources of pollution can be challenging. There is also high variability in how long microbes survive in the environment, some of which is related to dynamic conditions such as rainfall, temperature, and tidal movement. Water quality testing is also limited as it solely provides information from a relatively small sample volume for a specific moment in time.

Given the complexity of the False Creek system, improving water quality necessitates a long-term approach involving multiple stakeholders and jurisdictions, and dependent upon systematic effort across a suite of key action areas. The City's False Creek Water Quality Improvement Initiative (FCWQII) captures and tracks in one place the suite of actions being advanced by the City and Park Board across five priority areas:

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



Source Control

Reducing Land-based Discharges

Sewage discharges from land are one source of microbial contamination in False Creek. As the vast majority of these discharges occur during the fall and winter rainy seasons, it is not yet clear how significant these discharges are in impacting conditions during the summer period when recreational use is highest. Regardless, reducing land-based sewage discharges is important for reducing overall loadings, as well as improving the ecological health of False Creek.

Reducing Combined Sewer Overflows (CSOs)

The original sewer system in Vancouver combined stormwater with sanitary sewage in what is known as a combined sewer system. These systems were built to handle sanitary flows but only a portion of the stormwater runoff. During precipitation events, pipe capacity can be exceeded and combined sewage overflows 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. Catchment areas that flow into False Creek have largely been separated. Three City of Vancouver CSO outfalls and one Metro Vancouver CSO remain in False Creek. The annual capital sewer renewal program identifies projects across the city with a focus on improving water quality of our receiving bodies.

Addressing Cross-Connections

Cross-connections occur when sanitary systems are accidentally or illegally connected to stormwater systems. They are a common problem in many urban areas. The City conducts ongoing inspections throughout the sewer system to identify and address any cross-connections where sanitary wastewater is connected to stormwater that discharges to False Creek or other water bodies. In 2018, nine sewer cross-connections were investigated and resolved in response to concerns identified in False Creek.

Installing Green Infrastructure

Traditionally, rainwater is captured and discharged through a sewer system. The City's Green Infrastructure (GI) program serves to manage rainwater more naturally, providing space for rainwater to infiltrate and replenish the groundwater. In addition to reducing flooding, GI initiatives contribute to improving water quality. In particular, GI initiatives reduce the frequency and intensity of CSO occurrences. They can also decrease the amount of pollution that enters receiving waters such as False Creek by trapping sediments that cause pollution directly and that can also carry other contaminants such as heavy metals.

In 2018, 11 GI assets were installed on City lands within the catchment areas that drain to False Creek. These include bioswales installed at Quebec and 1st Avenue. Collectively, the 11 assets installed in 2018 service a catchment area of approximately 5,100 m².



Providing Pump-out Services for Boaters

Since 2015, the Park Board has made the pump-out facilities at the two civic marinas in False Creek available year-round (and at no cost) to all boaters.

In 2017, a seasonal, no-charge mobile pump-out service was piloted by the City's Environmental Services team. It was expanded in 2018 with additional hours and a new boat. This service provides a convenient option for boaters, and also assists those where access to the stationary pump-outs is difficult. Over the course of two summers, the boat provided 730 pump-outs, collecting approximately 68,000 L of sewage.



False Creek's new pump-out boat on the water in 2018

Source Control

Supporting Responsible Sewage Management by Boaters

While regulating and enforcing vessel sewage disposal is a federal responsibility, the City and Park Board are working to support responsible sewage management by boaters through available local government tools. Focus areas to date include education and engagement, provision of pump-out facilities and services, strengthening by-law requirements, and facilitating compliance at marinas.

Strengthening City Regulations

In 2018, Council amended the *Health By-law* to:

- prohibit boaters from discharging any polluting substance,
- prohibit marina operators from allowing boaters to discharge polluting substances in their marinas, and,
- require all marinas to have an operational pump-out facility by January 1, 2019.

The *Ticket Offences By-law* was also amended to enable the City to issue tickets for certain offences.

Undertaking Marina Compliance Promotion

During the course of the 2018 boating season, 85 visits were conducted by City staff to support marinas in meeting *Health By-law* requirements. One objective was to ensure that all marinas were aware of the upcoming requirements to have a pump-out facility by January, 2019.

The visits were also aimed at ensuring that marinas met existing City by-law provisions, including requirements that marinas post adequate signage to advise boaters that the discharge of any polluting substance is prohibited. At the request of marinas, the City developed signage guidelines to provide greater clarity on how to meet the by-law provisions. As result of the 2018 efforts, 100% of False Creek marinas are now in compliance with the City's signage requirements.

Research and Assessment

Investigating Pollutant Sources and Strengthening Understanding of False Creek

The complex nature of False Creek makes it difficult to pinpoint pollution sources. Developing a better understanding of system conditions, including basin flow and the distribution and fate of pollutants, will enable the City and Park Board to identify and direct investments towards priority areas.

Undertaking Water Quality Assessment Studies

Each year, Metro Vancouver conducts water quality sampling at specific locations in False Creek from April to September as part of its regional sampling program. In general, results have found that water quality deteriorates significantly moving eastward from Burrard Bridge towards Science World. A key factor likely influencing this pattern is the reduced tidal flushing in the eastern basin.

In 2018, the City launched an expanded water quality assessment program to start to develop a greater understanding of water quality conditions throughout the basin. Together with Metro Vancouver and Vancouver Coastal Health, the City also supported a research initiative led by the BC Centre for Disease to develop improved methods for determining microbial contamination sources.

Developing a Hydraulic and Water Quality Performance Model

The City is currently developing a hydraulic model to better understand the complex nature of False Creek and opportunities for water quality improvement. The primary objectives of the model are:

General System Understanding - by describing circulation in False Creek including the distribution and fate of *E. coli* from key sources;

Communication and Engagement - by creating a visual tool that demonstrates the system's behaviour; and

Scenario/Intervention Assessment - by providing a decision-making tool that assists with the evaluation of alternative actions.

In 2018, the City completed a best practices review and is currently developing a Request for Proposal to develop model design.



Ecosystem Health Improvements

Efforts to address water quality in False Creek can be further advanced by improving overall ecosystem health. For example, restoring natural shorelines (such as those found on Habitat Island) supports ecological processes including temperature regulation, nutrient cycling, sediment trapping, and water filtration, while also providing habitat and food for wildlife. When these processes are functioning, water quality can be improved naturally. Other possible initiatives include wrapping marina pilings with a non-toxic material to encourage herring spawning, and using bivalves such as mussels to filter the water.

Conducting Intertidal Studies of False Creek Shoreline

In 2018, staff worked with UBC Earth and Ocean Sciences students to conduct two intertidal studies in Northeast False Creek to better understand ecological processes.

The first study assessed the common seaweed, *F. gardneri* (also known as rockweed). This seaweed is the predominant marine plant species in False Creek and a key indicator of overall health. The purpose of the study was to gain understanding of its habitat preferences. The results of the study will help shape shoreline design guidelines and other enhancement works that can support healthy intertidal zones.

A second study was conducted to better understand how marine birds use False Creek. In particular, the study sought to learn where birds forage, nest, and rest. This information will help the City better protect birds and avoid potential impacts from City infrastructure works and broader community development. Birds are also an important indicator of overall ecological health. In this respect, bird surveys conducted over multiple years can provide information on overall ecological conditions and trends, of which water quality is a key determinant.



Developing Northeast False Creek Area Plan

In 2018, the Northeast False Creek (NEFC) Plan was approved by Council. The Plan serves as a framework for guiding new growth, development and public investment in the last major undeveloped neighborhood in downtown Vancouver over the next 20 years.

Among many other important benefits, the Plan contains a number of guiding policies that will also support water quality improvement in False Creek. Highlights include a commitment to create significant new areas of high quality shoreline, including upland, intertidal and subtidal habitat areas. There is also a direction to incorporate green infrastructure as a key part of the proposed street network and development sites.

Strategic Planning ***Integrating Water Quality Considerations***

While the City's most visible efforts are its tangible actions such as the mobile pump-out service, it is also working to advance longer-term systemic change by integrating water quality considerations into strategic plans and initiatives. These strategic initiatives provide an opportunity to manage land, foreshore, and on-water uses, which are important factors that affect the quality of a surface-water body such as False Creek.

Developing VanPlay Master Plan and 'On Water' Recreation Strategy

The Park Board is currently developing a park and recreation services master plan entitled VanPlay. This is the first city-wide review of Vancouver parks and recreation services since 1992 and is intended to shape services for the next 25 years. In July 2018, the Park Board approved ten guiding goals of the Master Plan. One of these goals is to restore Vancouver's wild spaces and biodiversity, including re-establishing the tree canopy and rehabilitating shorelines.

The Park Board is also developing an *On Water* strategy to enhance public use and access to non-motorized watercraft opportunities in False Creek and other water bodies surrounding Vancouver. Out of six desired outcomes evaluated during the public engagement process, "Protect and enhance the environment" was the most supported, with "improving water quality" being a top theme. Based on this and other feedback received from stakeholders, draft strategies and actions were developed in 2018.



Engagement, Partnerships, and Inter-agency Coordination

While the City has a key role to play, improving water quality in False Creek is ultimately dependent upon a community-wide effort, including action by boaters, recreational users, as well as other government agencies. To encourage a broad-based approach, the City delivers targeted education and awareness campaigns as well as fosters inter-agency coordination.

Outreach Campaigns

Various campaigns have been advanced over the years to engage the community in reducing pollution.

In 2018, the City and the Park Board collaborated to deliver the “Pump, Don’t Dump” campaign to encourage responsible sewage management by boaters. As part of this effort, social media posts, a news release, signage and newsletters at marinas, and a website presence all promoted the no-charge mobile service and pump-out stations at both civic marinas.

UBC Ocean Leaders Partnership

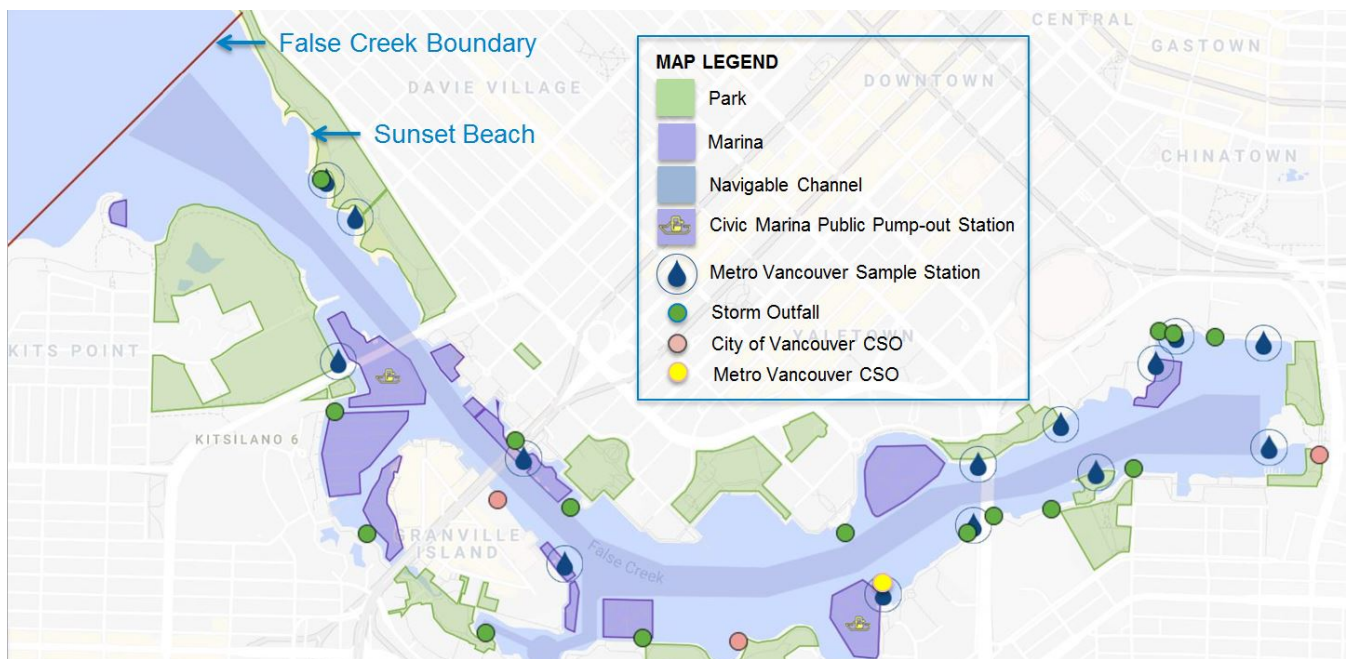
In 2018, the City partnered with UBC Ocean Leaders. This new program is aimed at preparing the next generation of interdisciplinary marine researchers with the ability to translate technical knowledge into policy and management action.

While the students gained further understanding of the connection between local government and marine science, a key deliverable for the City was the development of a customized map of False Creek showing major features related to water quality.

False Creek Water Quality Working Group

The False Creek Water Quality Working Group (FCWQWG) is a multi-agency group convened in 2015 by the City of Vancouver and comprised of representatives from the City, Park Board, Vancouver Coastal Health, Metro Vancouver, and Transport Canada. The purpose of the group is to foster a strategic and coordinated approach to water quality improvement and enforcement in False Creek through inter-agency collaboration and partnership.

In 2018, FCWQWG members provided input on water quality assessment programs, and reviewed and recommended continuance of the City’s mobile pump-out service. The group also shared research and information about agency initiatives, including public outreach efforts by Transport Canada regarding vessel sewage regulations.



Map of False Creek Showing Major Features Related to Water Quality

Conclusion

This 2018 Progress Report highlights the actions taken by the City and Park Board this past year to improve water quality in False Creek. These include actions to address known pollution sources such as sewer system discharges and boats, research and assessment to better understand the False Creek system, and outreach and partnerships to foster coordination and support broader community-wide action. Efforts have also included action to improve overall ecosystem health, as well as to integrate water quality considerations into key strategic community plans.

As a result of these and previous initiatives, improvements have been made to False Creek and herring and other fish, seals, birds, and other wildlife are returning to the waterway. However, given the decades of past impacts to False Creek, further action will be necessary for some time. Moving forward, as a greater understanding of False Creek is developed, the City will be able to continue to fine tune its action investments and direct resources in an even more targeted manner.



Mobile Pump-out Service in False Creek

Service Provision	2017	2018
Operating Period	August 11 – October 14	June 1 – September 17
Operating Days	Fri, Sat, Mon, Tues	Thurs, Fri, Sat, Sun, Mon
Number of Days in Service	37 days	79 days
Scheduling	Pre-booking or on-demand via phone, text, email or in-person; boat owner choice if they would like to be present	Pre-booking or on-demand via phone, text, email or in-person; boat owner choice if they would like to be present
Budget	\$75,000	\$75,000
User Cost	No cost	No cost
Communications and Outreach to Promote the Service	Social media, email notifications, meetings with marina operators, pump-out boat signage, word-of-mouth, media event	Social media, email notifications, meetings with marina operators, pump-out boat signage, word-of-mouth, posters at marinas
Service Utilization	2017	2018
Total Number of Pump-outs Performed	169 boats (of which 112 were unique vessels)	561 boats (of which 261 were unique vessels)
Average Daily Usage	4.6 boats	7.1 boats
Average Number of Pump-outs/hour	0.62 boats	1.64 boats
Peak Daily Usage	11 boats	18 boats
Approx. Total Volume of Sewage Pumped	20,000 litres	48,000 litres
Approx. Average Volume Pumped/day	535 litres	617 litres
Cost Per Litre of Sewage Pumped	\$2.53	\$1.34
Service Quality	2017	2018
Top Service Attributes Cited by Users	Convenience, ease of booking, and no cost	No cost, ease of booking, and getting a pump-out without moving boat
% of Surveyed Users Reporting They Were “Satisfied” or “Very Satisfied” With Service	100%	100%
% of Surveyed Users Reporting It’s Important to Continue the Service the Following Year	100%	99%

2018 Pilot Mobile Pump-out Service User Survey Results

In September 2018, 101 boaters representing 43% of total users of the pilot mobile pump-out service completed an online survey to provide feedback on the service. A summary of findings and boater comments is provided below.

Mobile Pump-out Service Pilot

- 100% of users reported that they were satisfied with the service.
- 100% of users would recommend the service to other boaters
- 98% felt it was “very important” that the service be provided again in 2019
- 98% are concerned about pollution in Vancouver’s marine waters.
- 48% found out about the service by seeing the boat on the water, 36% saw a poster at a marina, 31% heard about it through word of mouth, and 17% through an email from their marina (Note: more than one selection was permitted).
- No cost, ease of booking, and not having to move their boat were cited as the top attributes boaters liked about the service. Comments included:
 - *“Staff were professional, friendly and efficient”*
 - *“We really loved the ‘don’t-need-to-be-there’ service”*
 - *“I think it’s important for visitors to have easy [pump-out] options”*
 - *“This service is busy. Makes you wonder where [all the sewage] was going. There seems to be lots of boats that never move but have people using them as a home”*
 - *“The whole process was terrific, proud you’re caring for the harbour so well”*
 - *“I applaud the City of Vancouver for its leadership efforts in this endeavour”*
 - *“Thanks for offering this free service. I hope it continues in 2019”*
- Suggestions for improving the service included:
 - *“Extend the hours available to... 7 days a week”*
 - *“Extend the time period both earlier in the spring and later in the Fall”*
 - *“The service should be offered on a year-round basis”*
 - *“Have it available the last weekend of every month in the off season”*
 - *“Your system will work the best once you get the word out on its availability”*
 - *“Have marinas in the area create more awareness about the service”*

Suggestions for Improving False Creek Water Quality

- As well as providing additional pump-out options and more boater outreach to increase their use, suggestions for other actions to improve water quality included:
 - *“Out of the 13 marinas we phoned, only 4 [had pump-outs] available to us. This should be looked into”*
 - *“Offer fuel credits or other incentives [for boaters to use pump-outs]”*
 - *“Having the mobile pump out is fantastic, but you need a holding tank to use it. We need a program with inspections that ensures all boaters [have] tanks”*
 - *“Reduce the anchor time and number of boats in False Creek”*
 - *“Currently there is zero enforcement of no-discharge regulations — that needs to change with hefty fines for those who discharge into False Creek”*
 - *“Clams and mussels were used to clean up the pollution in Howe Sound”*
 - *“The biggest contributor to pollution in False Creek is the city’s outflow pipes”*
 - *“Annual boat tax. If you live here be it water or land you have to contribute”*