

REPORT

Engineering Services and Fire and Rescue Services

To: Mayor Johnstone and Members of Council
Date: November 6, 2023

From: Lisa Leblanc
Director, Engineering Services
File: 05.1035.10
(Doc# 2363884v4)

Erin Williams
Fire Chief, Fire & Rescue Services
Item #: 2023-716

Subject: **Motion Response: Increasing Access to Fresh Drinking Water for Local Residents and Their Pets**

RECOMMENDATION

THAT Council receives this report as a response to the motion to report back to Council regarding the cost and operational requirements of installing temporary water fountains connected to a fire hydrant in time for summer 2024;

THAT Council direct staff to undertake a fresh drinking water study in 2024 and report back to Council on the implications of implementing additional permanent drinking water stations across the City.

PURPOSE

The purpose of this report is to respond to the September 11th, 2023 council motion on "Increasing access to fresh drinking water for local residents and their pets". This report provides information and implications associated with temporary fire hydrant adaptations and recommends a path forward for assessing the need for improved access to drinking water in the public realm.

BACKGROUND

On September 11th, 2023, the following motion was adopted by Council:

WHEREAS it is important for New Westminster citizens and their pets to have access to fresh drinking water in outdoor spaces during the warm summer months; and

WHEREAS the technology currently exists and has been proven to work in other cities throughout Metro Vancouver to install temporary water fountains using existing fire hydrants; therefore

BE IT RESOLVED THAT staff report back to Council regarding the cost and operational requirements of installing temporary water fountains connected to a fire hydrant in time for summer 2024; and

BE IT FURTHER RESOLVED THAT staff reach out to the City of Vancouver who have successfully implemented fire hydrant water fountains to determine if there are learnings that can be applied in New Westminster.

As per the terms of Council Procedure Bylaw No. 6910, any motion arising out of a notice of motion must not take effect unless the following conditions are met:

- a) The Chief Administrative Officer, in consultation with senior staff, has submitted a report within three Council meetings on the feasibility of that motion considering any budget and work plan implications including but not limited to staff capacity, financial, policy, administration, feasibility, operational, legal, etc.;
- b) Council has considered the budget and work plan implications of the motion in light of any strategic plan adopted by Council; and
- c) Council has passed a motion authorizing the budget and work plan set out in the Chief Administrative Officer's report.

SUMMARY

On September 11th, 2023, Council passed a motion for staff to report on the cost and feasibility of installing temporary drinking stations on fire hydrants in time for summer 2024. Currently, there are 52 permanent drinking stations and 15 seasonal misting stations strategically distributed throughout the City of New Westminster. Staff have interviewed neighboring municipalities to draw insights from their experiences. Furthermore, staff have engaged in interdepartmental discussions to identify reasonable next steps to address council's concerns regarding the availability of drinking water in public places.

In discussions with the City of Vancouver, temporary drinking stations fabricated in-house by City staff were deployed across Vancouver in 2023 as a trial program. This, however, is not an option for the City of New Westminster given the lack of suitable equipment, shop space, and specialized labor. In light of this, staff have obtained 4 quotes for drinking stations from local vendors. Such installations would be temporary in nature (i.e. only in

place during summer) and would cost approximately \$6,500 per unit for the equipment. In addition, approximately \$750 per unit would be required for seasonal installation and commissioning and \$500 per unit for decommissioning and removal. These costs are exclusive of any potential maintenance or repair charges that may be required.

The City of Vancouver has indicated that their trial is complete and that they intend to move away from temporary drinking stations towards permanent infrastructure solutions. City of New Westminster staff also recommend permanent infrastructure over temporary ones. The Parks Department has historically used 'HAWS3202G' drinking stations which have a successful track record in the City. The cost for this type of permanent infrastructure is approximately \$3,900 per unit in addition to an average installation cost of \$2,500 per unit. The installation cost varies depending on proximity to a water main tie-in. The permanent drinking stations would need flushing at the beginning of the season and winterization in the fall. While drinking stations with freeze-resistant technology are available, these options come at a considerably higher cost, both for the asset and the installation process, and to date it has been determined that seasonal operation (i.e. decommissioning in the winter) meets the City's needs.

ANALYSIS

City of Vancouver Discussion

At the inception of their 'Access to Water Program', the City of Vancouver engaged a UBC Greenest City Scholar to conduct research and analyze various options for drinking stations. The analysis included assessing access to drinking water throughout the City to identify areas with insufficient access. Utilizing this data, the City formulated an "Access to Water Plan" that strategically identified the locations where temporary drinking stations were most needed to ensure a targeted and effective approach to improving water access within their community.

The City of Vancouver manufactured the units in-house while allowing for a high degree of customization. The units were equipped with various options including hand washing stations, drinking fountains, and bottle fillers in order to cater to diverse community needs. Furthermore, their close collaboration with the fire department played a pivotal role in minimizing response time delays during potential fire-fighting emergencies. This involved specialized training sessions with firefighters.

The City of Vancouver embarked on the deployment of temporary hydrant-adapted drinking stations in 2023 with a well-thought-out location plan and the support of the fire department. However, the program's outcomes have been mixed with challenges outweighing the benefits in a number of instances. While certain local neighborhoods had no incidents or issues with their temporary drinking stations, others faced persistent acts of vandalism and misuse, leading to the removal of some stations.

One notable observation from Vancouver's experience is the commitment of a dedicated full-time staff member to manage daily water quality testing requirements and maintenance of the drinking stations. This dedicated staff conducts daily rounds, collects water samples at each drinking station connected to a hydrant, sanitizes the units, and ensures that they operate as designed. This approach highlights one example of the rigorous effort required to maintain the integrity and safety of these installations within the community.

At the conclusion of the 2023 season, the City of Vancouver conducted a review of their program which prompted a strategic shift towards scaling back on hydrant-adapted drinking stations in favor of permanent infrastructure solutions that are less susceptible to damage and have reduced maintenance and testing requirements. In their 2024 program, Vancouver anticipates exploring the adoption of permanent drinking stations equipped with freeze-resistant technology to ensure the year-round availability of drinking stations.

DISCUSSION

Following discussions with the City of Vancouver, staff initiated internal consultations with various city departments. These consultations involved engaging with the departments responsible for planning, installation, and ongoing operations related to the hydrant adaptations. An essential focus was ensuring effective coordination with the Fire Department, recognizing their role in successfully integrating these fire-hydrant adaptations with their operations.

When considering the installation and operation of the hydrant-adapted drinking stations, Fire Department staff emphasized the below:

- Consistency in setup to ensure that the fittings are always attached to the same connection point on the hydrant;
- Keeping hoses neat and slack to ensure there are no impediments to firefighters in the event of an emergency;
- Selecting hydrants in close proximity to secondary or alternate hydrants in order to maintain a seamless emergency response;
- Potential risks associated with vandalism, particularly the severe implications if one of the fountain connector hoses were cut on a live hydrant. Such an act could result in uncontrolled high-pressure water flow posing risks to public safety and underscoring the need for careful consideration and mitigation measures in the deployment of hydrant adaptations.

The Engineering Operations division would be responsible for installation, commissioning, maintenance, water testing, and decommissioning of these adaptations. The Operations division has expressed concerns primarily related to vandalism and potential risks to public safety. If the drinking stations' hardware (especially the brass hardware) is tampered with or the hose is cut, operations would need to respond to this hydrant, thus reducing their availability for other day-to-day work. Depending on the

extent of the damage, the hydrant would potentially be taken out of service until repaired, subsequently creating a fire-fighting risk.

With respect to water quality, routine testing of the drinking stations would be required to ensure water quality regulatory requirements are met due to low water circulation within the larger fire hydrant lead. This routine testing is labor intensive and cannot be neglected during the high-use and warmer summer months. Water testing would require collaboration with external consultants and laboratories resulting in additional costs. New Westminster staff do not conduct in-house water quality testing; typically, Metro Vancouver conducts water quality testing for the City. A further important consideration is the age of the hydrants used for drinking station adaptations. Vancouver reported that some of their older hydrants returned unsatisfactory results when tested, prompting them to use only newer hydrants. This would be difficult in New Westminster because the majority of the system is older. It should be noted that a failed test result could result in a boil water advisory from Fraser Health which could potentially affect the entire neighborhood/water zone.

The Parks and Recreation Department's recommendation for permanent drinking stations is based on their practical experience and research gained from the deployment of misting stations in 2023. In addition, they have successfully deployed the HAWS3202G style drinking stations in various locations including parks, greenways, and open spaces. The receptiveness to these drinking stations as evidenced by their active use for drinking and refilling water bottles suggests they are valued by the community. A simplified bottle filler is a standard amenity in the City's permanent dog off-leash areas, including a tethered stainless bowl with drain holes. Bottle fillers in other locations across the City may be retrofitted with drinking bowls to cater to pets.

Based on the discussions that staff have had in response to Council's motion, temporary hydrant adaptations are not recommended. Investing in permanent drinking stations is the preferred solution. These permanent solutions align with the City's long-term goals and better address the concerns of access to fresh drinking water, low-maintenance assets and upholding public safety. However, temporary hydrant-retrofitted drinking stations could serve as a suitable option during certain special events. New Westminster hosts numerous community events throughout the summer. Some of these events span multiple days and include a variety of activities. In such scenarios, setting up temporary drinking stations equipped with handwashing facilities and pet bowls could work well. These stations could be deployed during event setup and removed at the conclusion of the event, providing access to drinking water and also addressing sanitation concerns. The hydrant-retrofitted stations could be reused and systems could be developed to manage risk of vandalism and associated public safety concerns.

NEXT STEPS

Staff recommend that the next step is to undertake a study to identify areas in the community where additional access to fresh drinking water is required. Collaborative efforts among all relevant departments will be pivotal in determining the most suitable

locations that prioritize equitable access, public convenience, installation feasibility, and community-wide accessibility and align with the City's sustainability goals and community needs.

This study would allow staff to understand the number of fresh drinking water stations required across the City, enabling a fulsome understanding of the financial implications. A study of this nature is estimated to cost \$50,000 and take 4 months to undertake. Staff can accommodate this study into the 2024 Engineering work plan and budget using existing resources and funding within the Engineering water utility. It is unlikely that the study will be completed in time to enable the procurement and installation of additional drinking water stations prior to summer 2024.

SUSTAINABILITY IMPLICATIONS

By providing readily available and convenient access to clean drinking water, the City promotes the use of reusable water containers, subsequently reducing the consumption of single-use plastic bottles. This, in turn, diminishes plastic waste and its associated environmental impacts. Moreover, enhanced access to water encourages hydration, potentially reducing the consumption of sugary beverages, which can improve public health outcomes. Sustainable water infrastructure investments such as water fountains with bottle-filling capabilities underscore the City’s commitment to responsible resource management and conservation.

FINANCIAL IMPLICATIONS

Table 1 below describes the costs related to a temporary adaptation vs a permanent drinking water station.

Table1: Cost Comparison

| | Temporary hydrant adaptation/unit | Permanent drinking station/unit |
|--|---|---------------------------------|
| Unit Purchase | \$ 6,500.00 | \$ 3,900.00 |
| Install and removal | \$ 1,250.00 per year | \$ 2,500.00 |
| Water testing and ongoing maintenance | Part time staff position or third-party contractor required for the program | - |
| Total | \$ 7,750.00 /unit | \$ 6,400.00/unit |
| | Plus 1 Part time staff or third party contractor | |

The cost analysis indicates that installing additional permanent drinking water stations would be more efficient. Permanent drinking stations require a lower initial investment and offer a more sustainable and cost-effective long-term solution. With reduced

maintenance and repair expenses and potential savings on water consumption compared to the temporary hydrant adaptations, the permanent installations prove to be a financially prudent choice in enhancing access to clean drinking water for the community while ensuring responsible resource management.

Ongoing maintenance and water testing are critical components that require careful consideration. Engineering Operations has limited capacity to take on the maintenance and water testing required for temporary hydrant adaptations. As a result, a part-time staff or a third-party contractor would be required. Moreover, temporary hydrant drinking stations are more vulnerable to damage and vandalism, which would result in additional costs for Engineering operations.

A fresh drinking water study estimated to cost approximately \$50,000 will be required. The study would be funded by the water utility capital budget in the current 5 year Financial Plan.

INTERDEPARTMENTAL LIAISON

The preparation of this report has been a collaborative effort involving multiple city departments and divisions including Finance, Parks, Engineering Operations, Transportation and Fire.

OPTIONS

The following options are presented for Council's consideration:

1. THAT Council receives this report as a response to the motion to report back to Council regarding the cost and operational requirements of installing temporary water fountains connected to a fire hydrant in time for summer 2024;
2. THAT Council direct staff to undertake a fresh drinking water study in 2024 and report back to Council on the implications of implementing additional permanent drinking water stations across the City;
3. THAT Council provides staff with alternate directions.

Staff recommends Option 1 and 2.

CONCLUSION

Retrofitting fire hydrants with temporary drinking stations is not recommended due to concerns about potential delays in emergency response times and impacts on water operations. The City of Vancouver has indicated that they will be moving away from temporary installations to permanent installations in 2024. Staff recommends permanent infrastructure over temporary installations. Permanent drinking stations have proven

successful and well-received within various park settings and are a versatile solution for enhancing drinking water access in the community.

APPROVALS

This report was prepared by:
Erika Pollmuller, Engineering Technologist

This report was reviewed by:
Kwaku Agyare-Manu, Senior Manager Engineering Services
George Otieno, Acting Manager of Infrastructure Planning
Brad Davie, Deputy Fire Chief
Gabriel Beliveau, Manager Engineering Operations
Wes Halliday, Superintendent Water & Wastewater Engineering Operations
Manny Jakhar, Superintendent Streets Engineering Operations
Erika Mashig, Manager Parks and Open Space Planning, Design and Construction
Laura Principe, Superintendent Parks Operations

This report was approved by:
Lisa Leblanc, Director of Engineering
Lisa Spitale, Chief Administrative Officer