



# City of Richmond

## Report to Committee

**To:** Public Works and Transportation Committee      **Date:** March 15, 2023  
**From:** Suzanne Bycraft      **File:** 10-6000-01/2023-Vol  
 Director, Public Works Operations      01  
**Re:** **2023 National Public Works Week - May 21 to 27, 2023: Connecting the World Through Public Works**

### Staff Recommendation

That the 2023 in-person event and virtual campaign plan and theme to recognize National Public Works Week as outlined in the staff report titled "2023 National Public Works Week - May 21 to 27, 2023: Connecting the Works Through Public Works", dated March 15, 2023 from the Director, Public Works Operations, be received for information.

Suzanne Bycraft  
 Director, Public Works Operations  
 (604-233-3338)

Att. 1

<b>REPORT CONCURRENCE</b>	
<b>CONCURRENCE OF GENERAL MANAGER</b>	
<b>SENIOR STAFF REPORT REVIEW</b>	<b>INITIALS:</b>
<b>APPROVED BY CAO</b>	

## Staff Report

### Origin

The Canadian National Public Works Association's annual National Public Works Week is from May 21 to 27, 2023. Previous to the COVID-19 pandemic, the City marked National Public Works Week with in-person events to celebrate Public Works staff and engage the community. During the three years from 2020 to 2022, staff shifted to a virtual campaign to ensure alignment with public health guidelines.

To celebrate 2023 National Public Works Week, the City will return to hosting three in-person events that include school and education events, engineering exhibits and displays of public works and parks equipment.

The City will also continue to promote National Public Works Week with a virtual campaign similar to that developed after the start of the pandemic. The virtual campaign will include social media pieces, community engagement highlights and an interactive map of capital projects throughout the City. Both in-person and virtual campaigns are outlined in this report.

This report supports Council's Strategic Plan 2022-2026 Focus Area #1 Proactive in Stakeholder and Civic Engagement:

*1.3 Increase the reach of communication and engagement efforts to connect with Richmond's diverse community.*

This report supports Council's Strategic Plan 2022-2026 Focus Area #6 A Vibrant, Resilient and Active Community:

*6.3 Foster intercultural harmony, community belonging, and social connections.*

### Analysis

#### Background

Each May, National Public Works Week recognizes the many people dedicated to their communities by working in public works careers. The week is used to energize and educate the public on the importance of public works in their daily lives. The City recognizes National Public Works Week through a proclamation outlining the following areas:

- Public Works services provided in the community are an integral part of Richmond citizens' everyday lives;
- the support of an understanding and informed citizenry is vital to the efficient operation of Public Works systems and programs such as water, sewers, roads, public buildings and solid waste collection;

- the health, safety and comfort of this community greatly depend on these facilities and services;
- the quality and effectiveness of these facilities, as well as their planning, design and construction, is vitally dependent upon the efforts and skills of Public Works officials; and
- the efficiency of qualified and dedicated personnel who staff the Public Works Departments is materially influenced by the people's attitude and understanding of the importance of the work they perform.

### 2023 Campaign Theme and Components

This year's National Public Works Week theme is "Connecting the World Through Public Works". Staff will use this theme to showcase the community connection to Public Works through our preventative work, proactive planning and skilled execution that allows us to be responsive, ready, and resilient in Richmond when required.

The City will recognize National Public Works Week in two phases: by hosting three in-person events that will take place during the week of May 8 and by producing a virtual campaign that will be launched on May 21 and will continue for the duration of National Public Works Week.

### In-Person Events

#### *Project WET*

Project WET, the City's annual water education program developed in partnership with the Richmond School District, will be held on May 9 and 10. The program will be presented to eight elementary school classes, with approximately 240 students and teachers expected to attend. This interactive program teaches intermediate students the importance of water consumption, conservation, quality and supply. Students will also learn about the City's recycling programs, dikes, pump stations, sewerage and drainage operations, and emergency preparedness.

#### *Public Works Open House*

The annual Public Works Open House will take place on Saturday, May 13, from 11:00 a.m. to 3:00 p.m. at the Works Yard. The event was last held in 2019 and had over 8,000 residents in attendance. The free event allows residents to meet City staff; learn about the work they perform and the programs offered; explore the various booths; participate in the interactive displays; eat at one of the local food vendors; and listen to live entertainment.

New this year will be the introduction of the Paint Station; a new booth featuring the Paint Shop and highlighting the important work they do around the City. The Paint Station will offer kids a creative hands-on opportunity to paint a series of murals to beautify our Works Yard. Favourites such as a Lafarge cement building zone, Kidstruction, excavator lessons, crafts, games, play areas, environmental sustainability displays and Richmond Fire and emergency displays will return again this year. The CUPE 394 sponsored car show will be located at Dover Park. To ensure traffic flows

smoothly and minimize interruptions, we will have traffic control personnel working on Lynas Lane from 9:00 a.m. to 4:30 p.m.

### Virtual Campaign

#### *Social Media*

On social media, the public will be invited to celebrate this year's National Public Works Week by visiting the City's channels daily from May 21 to May 27, to view new photos/videos featuring different Public Works' staff and services including an electric vehicle charging station expansion, a sanitary pump station installation project, a watermain replacement project and video footage of a snow plough in action.

#### *Community Connections*

Two community connections pieces were produced to highlight the connection between Public Works and the community and to showcase the exceptional work of staff. They further demonstrate how Council-approved infrastructure based projects materialize into tangible services that provide practical and real benefits to the community.

The video "Community Connections – Petts Road Watermain Replacement" highlights the connection between our Public Works crews and the community. The watermain replacement project was located within walking distance of Maple Lane Elementary School. A Water Services staff member reached out to the school and invited a class to visit the site and see how watermains are installed. After the field trip, students got the chance to participate in a virtual question and answer activity with the crew. The video highlights one of the City's most important corporate values: people. The crew working on the watermain project have a special passion for their work and want to connect and share it with the community.

The article, "Pipe Repair in the Air" (Attachment 1), features a repair that was conducted on a leaking watermain located underneath the Knight Street Bridge deck. The location of the watermain made the repair unique in that various Public Works sections, City departments and external stakeholders had to work together to carefully plan and perform the work, while ensuring the safety of City staff, infrastructure and the community. The article highlights the careful coordination, planning and execution by the team that exemplified all of the City's corporate values.

Going forward, these community connection pieces will be incorporated on the City's website. Staff will continue to produce feature materials which recognize Council's commitment to infrastructure improvements while demonstrating service excellence performed on various capital infrastructure improvement projects. The nature of these key infrastructure services being underground or hidden by other infrastructure means they may be less visual to the community, but nevertheless are of significant importance to daily life for residents and businesses alike.

*Interactive Map*

A link to the “2023 Capital Projects Highlights: Engineering and Public Works” interactive map will be included in the promotion page for National Public Works Week. The map shows planned or ongoing projects for the year and provides information on each project.

**Financial Impact**

None

**Conclusion**

The Canadian National Public Works Association’s annual National Public Works Week is from May 21 to 27, 2023, and the City’s Engineering and Public Works Division plays an active role in celebrating it. Two in-person events and a virtual campaign will be held to recognize and highlight the people who provide, operate and maintain the infrastructure services known as public works. Cities across Canada participate by raising awareness of public works contributions, and encourage community support for these dedicated employees who consistently improve the quality of life for residents.



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DP:dp

Att. 1: “Pipe Repair in the Air” Article

## CONNECTING COMMUNITY:

# Pipe repair in the air

When an air valve broke on a pipe connecting the River Road area of Richmond to Mitchell Island, it triggered a repair process involving multiple organizations, innovative solutions and extensive safety measures.

Why? Because the watermain pipe runs under the Knight Street bridge, more than six storeys (or 26.5 metres) above the Fraser River.

When City of Richmond staff were made aware of a leak under the bridge, they went to the area immediately and found water pouring out into the river. Water is chlorinated to keep it safe for drinking, but it is not permitted in natural water sources like the river. To stop the chlorinated water from running into the river, a Water Services crew quickly throttled down the water pressure to minimize the flow of water going through the damaged pipe. The City continued to provide a reliable water supply to Mitchell Island using a secondary pipe, as the City has two pipes in place to ensure there is backup in place for a secure water supply.

“We acted quickly to mitigate the environmental concerns from the chlorinated water leaking into the river as an interim measure,” says Bryan Shepherd, Manager, Water Services, Engineering & Public Works for the City of Richmond. “But we also knew that the complexity of the work under the bridge would take time to plan and complete due to a variety of challenges present. This also meant it would require a team effort.”

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Right from the planning stages, the pipe repair in the air project exemplified the City's core values by focusing on the power of teams who share a common goal. Everyone involved demonstrated concern for each other while building on their individual and collective knowledge.

## OBTAINING ACCESS AND SAFETY PLANNING

The first challenge was how to gain access to damaged pipe. TransLink owns the Knight Street Bridge, so the City required permission from TransLink to perform any repairs. In addition, the pipe needing repair was only accessible through a vertical ladder on one of the piers and a series of suspended catwalk systems under the bridge. These areas required up-to-date safety certifications.

Making repairs up in the air also required extensive safety measures. The City's Occupational Health and Safety (OHS) team members, Anastasia Riabkova and David Richards, coordinated with TransLink to confirm that the required annual inspections of the ladder and catwalk lifelines certifications were up to date. Next, they developed a plan for a safe working procedure. The inspections and safety plan were required prior to start of work to ensure the equipment would protect workers from a fatal fall and keep everyone safe on the job site.

The safe work procedure was also a key step for the City to obtain an Indemnity Inspection Agreement with TransLink, which allowed the City to access the horizontal and vertical lifelines and perform necessary maintenance and repair work.

The Indemnity Inspection Agreement also required the City to provide a High Angle Rescue Agreement. Kevin Gray, Deputy Fire Chief, Richmond Fire Rescue worked together with Riabkova and Richards to create the High Angle Rescue Agreement. The City's legal team then reviewed and finalized the Indemnity Inspection Agreement.

"Chief Gray and his team went above and beyond to support this repair project," says Shepherd. "They offered to provide the Public Works crew with a pre-entry inspection, on-site rescue support, and a means to transport materials from the ground to the catwalk using ropes. Richmond Fire Rescue crews also leveraged this repair project to practice their high angle training."

## APPLYING INNOVATION AND TRAINING

While City staff worked together to complete the agreement with TransLink and establish safety measures, the Water Services crew wanted a better look at the damage to assess what caused the leak and what would be needed for repairs. Fortunately, the City has staff who are trained to fly drones so they could apply innovative technology to make their task easier. After getting approval from the Vancouver Port Authority, a pilot flew a drone to assess the damaged area and confirmed that a broken air valve was the source of the leak.

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With the source of the leak confirmed, the Water Services crew could start planning the repair. Not surprisingly, the first big challenge that needed to be addressed was the height and ensuring the safety of the crew who would be under the bridge.

The Occupational Health and Safety team, Richmond Water Services and Richmond Fire Rescue worked together to ensure that workers performing this task had all the necessary fall protection training, fall protection equipment and a fall plan.

Murray Barstow, Water Services Supervisor for the City, organized a team that was trained in fall protection, ticketed with utility repair and comfortable with working 26.5 metres up in the air. As well, certified firefighters would work with the repair crew, both up on the bridge and on the ground.

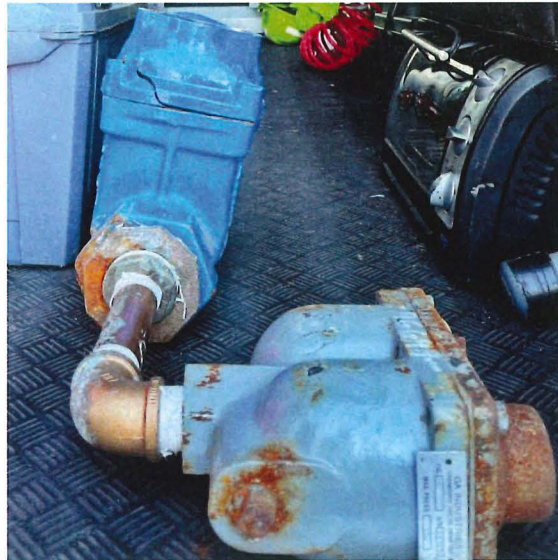
“We needed to use Water Services staff as they are trained and ticketed for our utility, but we also asked for volunteers. They would be working close to 100 feet in the air, so you can’t just assign a task like this,” says Shepherd. “The two people who volunteered were already trained and certified in fall arrest, they already had harnesses that were fit to them, and they were not afraid of heights.”

### SHARING THE SPACE WITH THE LOCAL WILDLIFE

Another challenge that the City encountered was the presence of peregrine falcons in the area.

“When we were assessing the damage, a falcon was dive-bombing the drone so we knew the birds were in the area, and it was close to nesting season when we would be doing the work,” says Shepherd. “There were also concerns that the falcons may attack our crews, so we needed to bring on someone with expertise in this area.”

An environmental consultant was brought onto the project to ensure the safety of both the birds and the workers.



### REPAIRS IN THE AIR

After two months of planning, getting required approvals, ensuring all safety measures were in place and taking steps to protect the falcons, the repairs could finally proceed safely and in compliance with all provincial and federal regulations.

Water Services staff, Colin Hutchinson and Ken Labocaune, performed the repair work on the bridge while two Fire Rescue staff stayed on the catwalk on standby in case rescue was needed. They replaced the air valve, which is about the size of a basketball, installed a shut-off valve and replaced about four feet of pipe where the air valve was located. This took about four hours to complete.

Eight Fire Rescue staff remained on the ground to assist further in the event of an emergency and helped raise and lower equipment using a rope pulley system.

The environmental consultant used binoculars to observe the behaviour of the birds. During the repair work, the falcons began to fly around and make noise to indicate they were concerned and unhappy with the presence of workers.

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Work was halted for 30 minutes to allow for the falcons to calm down and prevent provoking an attack on the workers. The environmental consultant assessed whether the falcons were being adversely impacted and if the job site needed to be shut down. Fortunately, after the 30 minutes had passed, the falcons were calm and perched on a nearby tree.

“It’s exciting work. It’s challenging. It’s scary. And after completion it’s rewarding,” says Shepherd, who, having done work under the bridge in the past, would know. “I think there’s a lot of adrenaline. When everyone gets back down safely, it’s a huge sense of accomplishment.”

While the aerial adventure portion of the work was completed, additional work was still needed before the water could be turned back on. The Water Services crew injected about 40 litres of high concentration chlorine into the water running through the 450 mm pipe and let it sit for 24 hours to disinfect the pipe before water could be turned back on.

“We take continuous measurements until its dark purple on the litmus paper to show a high concentration of the chlorine, and then we let it sit so it can eat up any bacteria, dirt or other contaminants that may have entered the pipe,” says Shepherd.

When the chlorine was released from the pipe, the crew ran it through vitamin C pucks, which dissipates the chlorine so it could safely be released into a gravel lot. Next, they did water quality testing. After about three days, the results were in, and the water quality test came back clear, so they turned the water back on.

The City takes over 2,000 samples each year to test the water to ensure the water quality is good.

“Our job is to supply water to Richmond residents, regardless of the height or how hard the work is,” notes Shepherd. “Our crews enjoy their work, and are thrilled to provide the Richmond community with clean water.”

Thanks to collaboration, training, and innovation, the repairs to the watermain were completed safely and the pipe connecting two communities in Richmond is again secure and fully operational.

“I’m proud of the crew’s accomplishment and the collaboration of the different parties involved,” adds Shepherd. “It seemed like they had fun. I went to school with Darren Rowley, a Company Officer and Lieutenant with Fire Rescue, and I know he was very proud of his team too. Overall, it was a really good repair, and this is one we’ll talk about for years.”

