



# City of Richmond

## Report to Committee

**To:** Public Works and Transportation Committee      **Date:** October 20, 2017  
**From:** Tom Stewart, AScT.      **File:**  
 Director, Public Works Operations  
**Re:** **Update on 2017/2018 Snow and Ice Response Preparations**

### Staff Recommendation

That the staff report titled "Update on 2017/2018 Snow and Ice Response Preparations", dated October 20, 2017, from the Director, Public Works Operations, be received for information.

Tom Stewart  
 Director, Public Works Operations  
 (604-233-3301)

Att. 2

| REPORT CONCURRENCE   |  |                                       |
|--|--|---------------------------------------|
| <b>ROUTED TO:</b>  | <b>CONCURRENCE</b>   | <b>CONCURRENCE OF GENERAL MANAGER</b> |
| Communications<br>Parks Services                                 | <input checked="" type="checkbox"/><br><input checked="" type="checkbox"/> |                                       |
| <b>REVIEWED BY STAFF REPORT /<br/>AGENDA REVIEW SUBCOMMITTEE</b> | <b>INITIALS:</b><br>CS   | <b>APPROVED BY CAO</b><br>            |

## Staff Report

### Origin

This report provides information about the City's 2017/2018 snow and ice preparations.

### Analysis

Public Works has implemented numerous changes over the past several years to enhance the City's readiness and response efforts. These changes include: policy amendments, equipment review and upgrades, enhancement to public communications/public involvement, record keeping and overall response planning.

### Policy Amendments

Traffic Control and Regulation Bylaw 5870 was amended by Council on April 10, 2017, to require commercial, industrial, multi-family or single family property owners or occupiers to clear snow and ice from sidewalks adjacent to their property. Through a coordinated communications campaign (e.g. social media, news release, website content), staff will educate the public of Bylaw 5870. The Bylaw was amended to improve safety and convenience for pedestrians. Section 6.1 of the amended Bylaw reads:

*The owner or occupier of any parcel of real property which is developed for, or used in whole or in part for, commercial, industrial, multi-family or single family dwelling use shall remove all snow and ice from any sidewalk adjacent to such parcel for a distance that coincides with the property line of his real property, not later than 10:00 a.m. of everyday, including Sunday.*

In response to public concerns about the lack of salting and plowing on residential streets, Council approved an amendment to Bylaw 7013 (Roadways – Ice and Snow Removal) to identify and add third priority routes. These routes include the designated collector roads and roads of local significance in residential subdivisions. This initiative will help improve vehicle access from within subdivisions to the major collector roads. This year, two pieces of equipment have been added to be dedicated for salting these roads. However, it should be noted that third priority routes will only be cleared if first and secondary routes have been fully attended to and resources permit.

### Equipment

The City has six road temperature sensors that are monitored 24 hours a day by the City's Public Works Dispatcher and provide early indications of potential road frost or freezing conditions. Each sensor is strategically located under roadway asphalt throughout the City to provide real time information concerning road conditions. Public viewing of these road temperature sensors is now available through the City's website at [www.richmond.ca/services/rdws/weather/roadtemps.htm](http://www.richmond.ca/services/rdws/weather/roadtemps.htm). Sensor locations are illustrated in Attachment 1.

The global positioning system (GPS) was installed on the City's dump trucks as part of the 2016 pilot program. GPS was used for snow and ice response last year and was an important tool for operations management and planning. Truck locations were available in real time which allowed sanding/salting and plowing activities to be reallocated to the closest vehicle in response to areas

of concern brought forward. The system also provided valuable information in relation to claims made against the City relative to the City's operational response.

Two small insert salters have been purchased for one tonne dump trucks which will allow salting of the designated collector roads and roads of local significance in residential subdivisions (third priority routes) and will allow the tandem salters and plows to attend to first and second priority routes. A complete list of equipment dedicated for snow response is provided in Attachment 2.

### Public Outreach

Public involvement within the community is vital during the winter season. The City participates in the following programs, working jointly with the public and participating community associations:

- **Snow Angels Program:** This program was introduced in 2010 and connects local volunteer organizations with elderly citizens and residents with mobility/health challenges during a snowfall event. Assistance involves shovelling snow from sidewalks and/or walkways. A Snow Angels registry is accessible on the City's website and can also be obtained by calling Parks Programs, Public Works Dispatch, City Hall, or any of the community centres. The program is activated in the event of a significant snow fall (defined as an accumulation of 5+ centimetres of snow) and is dependent on the severity of the storm and volunteer resources. The City plays a role in coordinating and promoting the Snow Angels program, but the volunteers are recruited, screened and managed by each association participating in the registry.
- **Good Neighbour Program:** This program encourages everyone to clear the walkways around their property and help others who may face challenges. This neighbour-helping-neighbour campaign simply encourages residents to watch for people in their neighbourhood that could use help removing snow from their sidewalks and driveways and offer them a helping hand.

### Communications Strategy

A comprehensive communication strategy has proven to be valuable in delivering accurate, timely and relevant information to the public. The City's various departments with the guidance of Corporate Communications have established communications protocols and key messaging which will reinforce the snow response communications program. Participating departments include Public Works, Parks, Corporate Communications and Marketing, Customer Service, Bylaws, Emergency Programs and Richmond Fire-Rescue.

By using a cross-functional approach, each division's important messages are delivered in a coordinated fashion over a variety of pre-determined mediums in both a proactive, planned manner as well as reactive when extreme weather occurs and circumstances require it. The communications strategy includes, but is not limited to, using the following mediums:

- Social media (the City's Twitter, Facebook, YouTube; tweeting, retweeting, sharing information from credible sources, i.e., weather warnings)
  - Media relations (news releases, media interviews, local newspaper ads)
  - City's website (dedicated web pages, news pages)
  - City's intranet for employees
- Social Media: Social media is a large part of the overall communication strategy. Staff utilize the City's primary Facebook (@CityofRichmondBC) and Twitter (@Richmond\_BC) accounts to provide ongoing tips and timely updates during snow and ice events. This includes use of the @RichmondBCAlert Twitter account which is used only to provide emergency-related messages to residents (which include snow or other weather events). These updates include weather forecasts, what preparations are underway for current and upcoming events, current conditions and the status of any road closures due to debris, etc. This 2017/2018 season staff will again incorporate the use of photos and videos through its social media channels.
  - News Releases: News releases have been prepared to address common extreme weather/snow and ice topics and will be released to the media as events occur. Some examples include clearing leaves from storm drains, personal winter preparedness, and how the City is preparing for extreme weather events.
  - Website: The City's website provides considerable information about snow response including news releases, snow response route map and frequently asked questions. This information can be found at [www.richmond.ca/services/rdws/weather/cityprepares.htm](http://www.richmond.ca/services/rdws/weather/cityprepares.htm).

### 2017/2018 Weather Forecast

Richmond's geography often results in specific and variable weather patterns that differ considerably from other Metro Vancouver cities. Richmond-specific weather information and long range forecasts are received and monitored daily. According to NorthWest WeatherNet, the 2017/2018 winter forecast is as follows:

*October 13, 2017 - The late development of a weak La Niña in the equatorial Pacific means temperatures should average below normal this winter with higher than normal rainfall and snowfall. Two or three arctic outbreaks should be expected. If one such outbreak occurs in early December, the chance of more outbreaks increases. Expect winter weather possibly right until the end of March.*

### Operational Preparations

Operational preparations are underway which include equipment overhauls, meetings to coordinate efforts amongst departments, and training for staff. Training is crucial for preparation and is always an integral part of the groundwork for each winter season. This training is to ensure a sufficient number of personnel are available to respond to inclement weather events.

The City of Richmond's salt supplies have been secured for the upcoming winter season. There are currently 1,050 metric tonnes available under contract and an additional 2,200 metric tonnes on reserve. In addition to the Public Works Yard, a second location (Sidaway site) will be stocked

with salt for the reloading of trucks during snow events. This secondary location will reduce travel times and increase efficiencies for equipment working on the east side of Richmond.

Through a centralized control centre, staff closely monitor and record equipment locations, route start and completion times, and salt distribution. The addition of GPS monitoring to City vehicles involved in response operations will enable improved tracking and operations management. Overall, this will allow staff to respond accurately to enquiries and to better track expenditures that can be used to forecast costs for future events.

### 2016/2017 Winter Season Summary

During the past winter season we experienced nine snow events and 41 ice/frost events of varying duration and severity that accumulated 69 cm of snow at YVR. The City plowed and salted 14,069 lane kilometers and pre-treated and/or de-iced 38,105 lane kilometres of first, second and third priority roads.

### **Financial Impact**

Funds are available through Council-approved operating budgets.

### **Conclusion**

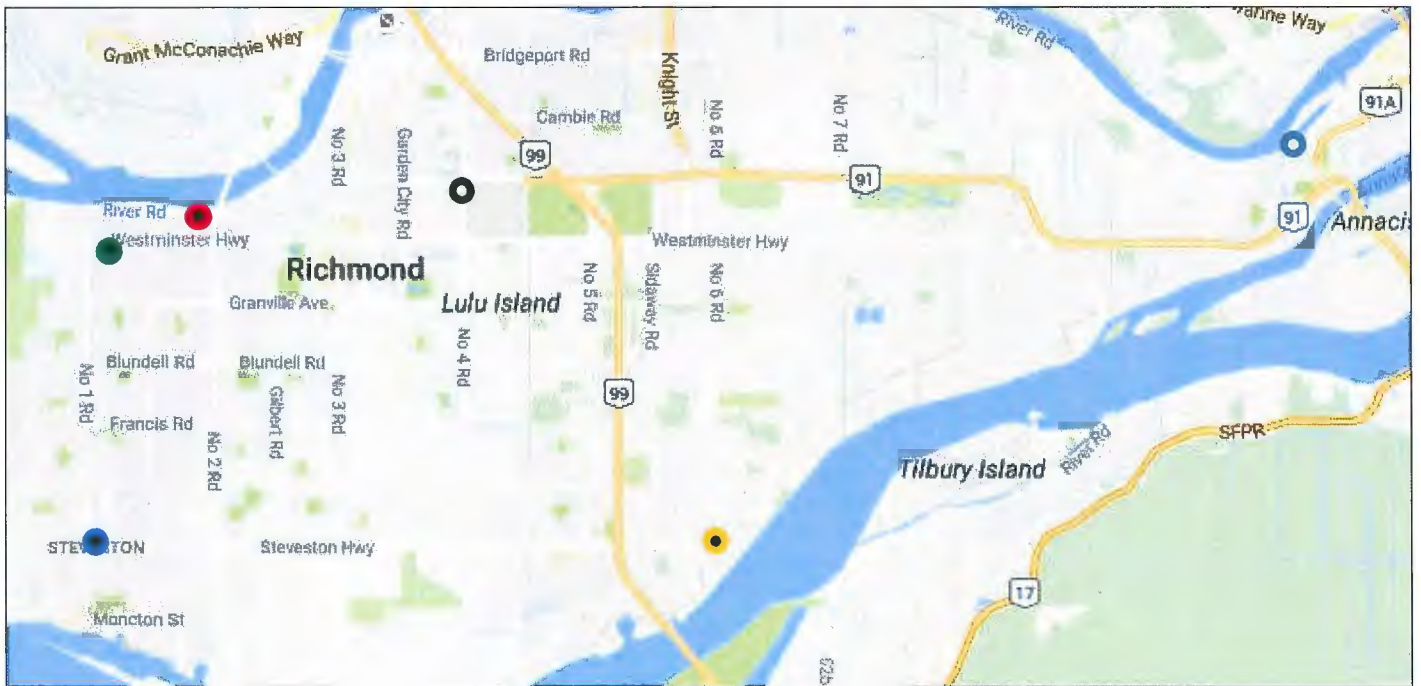
Preparations for the 2017/2018 snow and ice season by all required departments are well underway and will be completed in time for the upcoming winter.



Larry Ford  
Manager, Roads & Construction Services  
(604-244-1209)

- Att. 1: City of Richmond – Road Temperature Sensor Locations
- Att. 2: City of Richmond – Snow Response Equipment

City of Richmond – Road Temperature Sensor Locations



Road Temperature Sensors:

- Armoury
- No. 6 Road South
- Oval
- Queensborough
- Steveston
- Forsyth

## City of Richmond – Snow Response Equipment

| Number of Units | Description   |
|-----------------|---|
| 4               | Single-axle dump trucks with flinks and belly plows   |
| 1               | 1-tonne flat deck truck with insert/brine tank        |
| 7               | Tandem dump trucks with insert and plough attachments |
| 2               | 1-tonne dump trucks with insert                       |
| 1               | Crane truck with insert                               |
| 6               | F550S with snow plows                                 |
| 1               | Flusher truck (brine)                                 |
| 4               | Mobile snow blowers                                   |
| 4               | Backhoes  |
| 2               | Front-end wheel loader                                |
| 2               | Bobcat skid steers                                    |
| 3               | Hydro excavators                                      |
| 2               | John Deere Ride-ons with plows                        |
| 1               | Grader  |
| 1               | Kabota with plow                                      |
| 1               | Brine production and handling system                  |
| 2               | Brine applicator inserts                              |
| 1050 tonnes     | Salt  |