

MEMORANDUM

January 20, 2017

TO: Mayor and Council

CC: Sadhu Johnston, City Manager
Paul Mochrie, Deputy City Manager
Janice MacKenzie, City Clerk
Lynda Graves, Manager, Administration Services, City Manager's Office
Rena Kendall-Craden, Director, Communications
Kevin Quinlan, Chief of Staff, Mayor's Office
Katie Robb, Director, Communications, Mayor's Office
Naveen Girn, Director of Community Relations, Mayor's Office

FROM: Jerry Dobrovolny, General Manager of Engineering Services

SUBJECT: Snow Fight 2016/17

The City takes snow removal seriously and has a comprehensive snow response plan in place. When snow hits, Engineering crews make consistent, coordinated efforts to keep main roadways clear – including bus routes, bridges and arterials, and especially access routes to emergency and critical health facilities.

Each fall, the City prepares its crews, equipment and City residents for the potential of serious weather events, which could include snow, ice, windstorms and flooding. During the winter season (typically beginning in November), Engineering staff continually monitor weather forecasts to ensure an appropriate response. The annual budget to prepare City equipment and crews for winter response is \$750,000. The actual winter response budget for the year is dependent upon the weather and the additional costs are charged to a contingency fund.

The City fleet includes more than 40 trucks, as well as additional specialty equipment for clearing sidewalks and priority bike lanes. The City's response is scalable, meaning that the number of equipment and crews on the roads can be quickly scaled up or down according to road conditions. When significant snowfall occurs, the full City fleet is deployed, except for any equipment that may be in for servicing.

The City's response to snowy or icy roads depends on the weather conditions and is a 24/7 operation:

- When streets are dry, trucks spray brine which helps to melt any snow that may fall or frost that forms;
- When snow accumulates and streets are wet, salt is spread to melt the snow. In lower sub-zero temperatures, sand may also be used for traction;
- All brine and salt trucks are equipped with a plow blade, and if there is 5 cm or more of snowfall, plowing takes place immediately.

The Engineering Department Operational Center (DOC) is activated when specific weather-related events require fast and seamless response across all Engineering Divisions. It includes a decision-making framework for major events similar to that employed by the City's Emergency Operations Centre. The Engineering DOC was activated from December 2, 2016 to January 10, 2017 and staffed 24 hours a day when required due to either forecasted or actual weather events.

The 2016/2017 winter season so far has been one of the coldest and snowiest in recent memory. In addition, snow and rain followed by freezing temperatures caused a "rain/freeze/thaw cycle". This resulted in the City facing unusually challenging street conditions, including significant buildup of ice, especially in parts of Vancouver with higher elevations.

Due to accumulation of ice on side streets and back alleys, Sanitation crews faced challenging conditions this winter with respect to green bin and garbage pickup. These issues were even more difficult for Multi-Material BC's (MMBC) recycling collection contractor Smithrite because recycling trucks are lighter than garbage trucks and have more difficulty navigating icy streets and lanes.

Each year, the City advises residents, through advertising and other means, of the bylaw requiring residents to clear any snow on the sidewalk in front of their property by 10:00 a.m. the day after a snowfall. City inspectors issue warnings for non-compliance and there is an escalated process with multiple warnings, which may result in a fine.

The City's Response

In addition to the regular operational deployment of crews and equipment using a scalable approach as described above, the City put a number of additional measures in place in response to the unusual winter weather conditions.

Salt Supply

At no time did the City run out of sand and salt supply. This winter, the City expanded its list of potential salt suppliers to three in order to diversify our sources of salt and ensure an adequate supply. The City had a guaranteed supply contract with Lafarge to provide 3,000 tonnes of salt. So far they have supplied us with 5,000 tonnes. Two additional contracts were initiated in December to provide another 12,000 tonnes of salt if required including one local company and one out of province. For context, during a typical winter the City would use approximately 1,000 tonnes of salt. This winter we have used more than 10,000 tonnes, and there is 4,500 tonnes in stock currently with the potential to acquire another 7,000 tonnes if needed.

As is regular practice, City staff contacted salt suppliers across the region and the US as well as other local municipalities to get supplier contacts. City staff was also contacted by other

municipalities with requests for salt and supplier information and had discussions on effective weather response approaches.

Free Salt for Residents

With the prolonged colder than usual temperatures and ice buildup on streets and sidewalks, combined with a shortage of road salt and other melting agents *in retail outlets*, the City made the decision to provide free sand and salt mix to residents at 10 sites and there was an overwhelming response.

A total of approximately 260 tonnes of salt and sand was delivered to these 10 sites. In response to a request from the Strathcona Residents Association, one additional delivery of two tonnes was made at a central location within the Strathcona neighbourhood. Free salt/sand distribution ended as of January 15th.

On the first day of distribution, some of the locations saw chaotic behaviour from a small number of residents. Overall, the distribution at the 10 sites over a period of 11 days was very orderly and greatly appreciated by the residents. Staff received tremendous positive feedback which is why we extended the distribution to 11 days.

Staffing Over the Holiday Season

While the City Hall building closes between Christmas and New Year's, Engineering and other Operational staff continue working to ensure continuation of services for residents. Staffing levels over the 2016/2017 holiday season were the same as earlier in December and were aligned with our continuous monitoring of the weather forecast and street conditions. Some Streets, Sanitation and Water staff were denied vacation time requests or pulled in on vacation days to ensure appropriate staffing levels.

At peak snow response times throughout the holidays, there were approximately 125 City crew working at a time.

Re-deployment of City Staff

In early January, the City shut down non-essential construction projects and re-deployed more than 350 workers to assist with clearing of priority side streets and garbage collection. Engineering Services also reached out to the Vancouver School Board to determine any additional side streets requiring salt/sand treatment which were subsequently addressed.

Weather Response Approach

To improve and prioritize deployment of vehicles and staff, heat maps produced from the tracking of 3-1-1 requests were used to triage the City's response. Additional information used to prioritize equipment and staffing included:

- Past experience of hot spots for icing (i.e. priority hills) on maps;
- Input from our partner agencies such as emergency services and the Vancouver School Board; we were in constant contact with Coast Mountain Bus Company re: trouble spots affecting transit and issues were responded to quickly by our city crews;
- Feedback from social media.

Sanitation Pickups Impacted by Icy Roads and Lanes

In areas where there were steep, narrow and icy streets and laneways, City trucks could not safely drive in to collect garbage and green bin containers. These conditions did not occur on all City streets and lanes but were focused in select areas. The successive nature of the storms resulted in approximately 2,000 households out of a total of 110,000 single family and

duplex households in the City (just under 2%) being without garbage collection for four weeks. Another 10,000-12,000 households, or roughly 10%, missed one garbage collection.

More than 110 City staff worked to clear the backlog of missed garbage and green bin pick up. This included, in some cases, manually wheeling and emptying the bins into backhoe buckets for transfer into a dump truck. In order to provide sufficient resources for garbage collection, some green bin collection was delayed as in many cases they were not full and material was frozen into the bins. Staff were fully caught up on garbage as of January 6th and green bin as of January 13th.

MMBC's contractor for curbside recycling services - Smithrite - faced similar challenges. At one point, MMBC office staff were even "swamping" i.e., using smaller four-wheel drive vehicles to collect recycling from lanes and bringing it to the main streets for collection.

Because of the difficulties in servicing some of the households in the city, free drop off of garbage was made available to all residents. This provided some benefit to those who were able to bring their garbage to the transfer station, and this free service was maintained until January 8th. We also allowed additional bags to be left curbside for pickup free of charge. All garbage was eventually collected and staff does not intend to issue any refunds of the \$1.96 weekly equivalent that the City charges for garbage collection.

Enforcement of Sidewalk Clearing By-Law

So far this winter more than 9,000 warnings have been issued with between 200 and 300 tickets and prosecutions combined; however, inspectors are reporting high compliance at those locations where warnings were previously issued.

Snow Angel Program

The City's Snow Angel program was also activated through print advertising and social media, both to recruit volunteers and to encourage residents to request assistance. The program now has over 120 volunteers registered and saw more than 450 requests for service to help clean sidewalks and driveways for those in need e.g., seniors and others with mobility issues.

Mayor and Council Information Sharing

Prior to the first major snowfall on December 2, 2016, the City issued an Information Bulletin to media about snow response preparations. All Council members are included on this distribution list. In addition, the City Manager provided frequent operational email updates to Mayor and Council.

The annual snow preparation media event was held on December 7, 2016 at National Yard, and was well attended by a variety of news media.

Three additional Information Bulletins on snow response (including tips for residents) were issued in December 2016 and to-date in January the City has held two media briefings, issued one Information Bulletin and one News Release on the snow response, as well as an update on Sanitation services.

Annual Review of Snow Response

Each year, Engineering conducts a routine operational review of its snow response and makes recommendations for the following year.

After the major storms of 2008 and 2012, the City performed a more comprehensive review and reported back to Council on the City's response. All recommendations were implemented and followed annually including:

- Issuing by-law tickets for lack of clearing snow and ice on sidewalks;
- Introduction of brine application prior to snowfall to reduce ice;
- Increased coordination and communication with external agencies (Translink, Ministry of Transportation, VSB, VCH, BCAS, ICBC, and key agencies in the City - VPD and VFRS);
- Increased knowledge and communications with other jurisdictions regarding their snow and ice practices;
- Additional priority routes for schools, transit routes and emergency responders based on input;
- Installation of GPS units in snow fight trucks; an update and larger roll out into all operational vehicles is currently underway;
- Activating emergency management procedures which resulted in the Engineering Department Operations Center (DOC) being activated;
- Addition of snow and ice removal routes to the City's website to increase proactive public communication.

A number of improvements have already been identified from this year's response. For example, additional salt spreaders have been purchased for some of the smaller City trucks and some specialty attachments have also been purchased.

I am very proud of the extraordinary effort made by city staff through the holidays to keep the City of Vancouver functioning throughout this extreme weather period. Please contact me directly if you have any additional questions or would like further information.

Thank you.



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