



Department Source: Public Works

To: City Council

From: City Manager & Staff

Council Meeting Date: December 4, 2017

Re: Winter Weather Response for 2017/2018 Winter Season

Executive Summary

Staff has prepared for Council consideration a report concerning snow priority routes for winter 2017/2018, with a recommendation that no additional lane miles of new priority routes be added to the priority system list. Staff plans to implement a pilot optimization approach on specific routes throughout the city, not classified as first or second priority routes, but provide a connecting loop to other neighborhood streets.

Discussion

The efficiency of snow removal operations in Columbia has greatly improved since Council passed an ordinance in 2012 prohibiting parking on signed snow routes when snow is greater than 2" deep; authorized the purchase of new snow removal equipment in 2013; and established a rule that after priority streets are deemed passable, residential streets would be plowed and treated, utilizing overtime, when snow is greater than 4". Since these changes, snow priority routes have gradually increased, and although there have been some additional upgrades in equipment, no additional snow removal vehicles have been added to Street division's fleet since FY2014.

Public Works staff submitted information regarding our winter weather response approach to the American Public Works Association (APWA) in late 2016 and the department won the 2017 Excellence in Snow and Ice Control Award from APWA (Attachment A). When evaluating an agency's submittal for this award, APWA takes into account internal and external communication and community outreach, legislative policies, preparedness, material handling and storage, limiting environmental impacts, funding and equipment, training, and other factors. Information regarding the department's policies and procedures can be found at www.como.gov/comosnow.

Staff continues to find ways to improve our response efforts for our citizens. Street division is the lead agency for Columbia's winter weather response with a fleet of 21 tandem and single axle trucks to respond to approximately 466 lane miles of priority routes. This is about 1/3 of the entire roadway network which is approximately 1,365 lane miles. Additionally, 13 one-ton trucks with plows are utilized to support the larger trucks; and one single axle and a one-ton truck is dedicated to brine application. Over the last seven years, Street Operations' fleet of pick-up trucks has been replaced with one-ton trucks in order to assist with snow removal in residential neighborhoods. These trucks are versatile enough for a wide range of uses during the rest of the year and better suited for snow operations than the previous smaller ¾ ton trucks. However, they are not suited for plowing large streets on their own and instead are used to support the larger trucks clearing intersections and neighborhood streets.



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The Parks & Recreation department and divisions within Columbia Utilities are gradually incorporating snow removal features when fleet replacements are pursued, such as incorporating hydraulic plumbing for spreaders and plows. Long term these additions will help improve operations.

There was some budget savings due to mild weather at the end of the winter in early 2017 (FY2017). In an effort to make a long term improvement to our response, staff requested and Council authorized the purchase of a piece of brine making equipment via transfer of funds for this purpose. The brine making equipment was purchased near the end of the fiscal year. Although the brine maker should be in place and operational by the end of 2017, it will still need to be tested. Long term, the brine maker will allow for rapid production of brine solution and incorporating pre-wetted salt application. At certain temperatures, utilizing a pre-wetted salt application can aid in response. While every event is different, and adjusting to conditions can be tricky, staff will test the new approach over this winter to gage the effectiveness. Most of the existing fleet should be capable of incorporating the brine solution with existing saddle tanks. These tanks are currently utilized for a calcium-chloride solution when temperatures are really low. Staff will need to test how well the tanks hold up to the new application.

All forms of salt and calcium-chloride solution adjust the melting point to a lower temperature, but these chemicals can react negatively with concrete and increase the rate of pavement deterioration. The beet and salt brine solution currently being used is still detrimental to pavement, but has been found by most agencies (and the city) to be somewhat less aggressive than salt, and much less so than a calcium-chloride solution. Over time, incorporating more pre-wetted salt application will aid in our response efforts.

Last year in an effort to improve response efforts, staff identified 13 specific routes (see Attachment B) throughout the city that are not classified as first or second priority routes, but provide a connecting loop to other neighborhood streets. For simplicity, these specific routes will be termed "Third Priority" routes. As one-ton trucks assist with first and second priority routes, they would also be able to plow a path on these third priority streets to provide some relief for residents more quickly. Although the path may not be entirely free of snow, it should help to decrease the amount of snow pack on the streets, easing snow removal operations once plows have moved fully onto neighborhood streets. Vehicles will be allowed to continue to park on the street during larger snow events, although we will continue to encourage residents to move vehicles off the street via public outreach. Due to the lack of significant snow events last winter, staff did not get an opportunity to adequately test the effectiveness of this approach; however, Street Operations will do so this winter.

Staff doesn't recommend classifying the third priority routes as second priority routes at this time due to the constraints of not having enough salt on the one-ton trucks to adequately plow and treat the roads in the same way they do the first and second priority routes.



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Due to current limitations in manpower and equipment, staff recommends that no additional priority routes be added at this time. If additional priority routes are desired, staff recommends the same mileage be removed from the priority route system via other streets. Priority routes are required to comply with the no parking requirements when snow is more than two inches deep, so consideration regarding the impact to adjacent property owners should be considered.

Fiscal Impact

Short-Term Impact: No significant additional costs are expected.

Long-Term Impact: Unknown at this time, but funding will be reviewed as part of the annual budget approved by Council.

Strategic & Comprehensive Plan Impacts

Strategic Plan Impacts:

Primary Impact: Primary, Secondary Impact: Secondary, Tertiary Impact: Tertiary

Comprehensive Plan Impacts:

Primary Impact: Primary, Secondary Impact: Secondary, Tertiary Impact: Tertiary

Legislative History

Date	Action
10/18/1993	PR174-93A-establishing a snow removal policy
10/07/2013	Ord. 21841-prohibiting parking on priority routes when there is 2 inches or more of snow.

Suggested Council Action

For information only.