CITY OF
EAST GRAND RAPIDS

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DOUG LAFAVE
ASSISTANT CITY MANAGER

MEMORANDUM

TO: Honorable Mayor and City Commissioners
FROM: Doug La Fave, Assistant City Manager
DATE: February 20, 2019

RE: Sidewalk plowing equipment/operations/conditions information

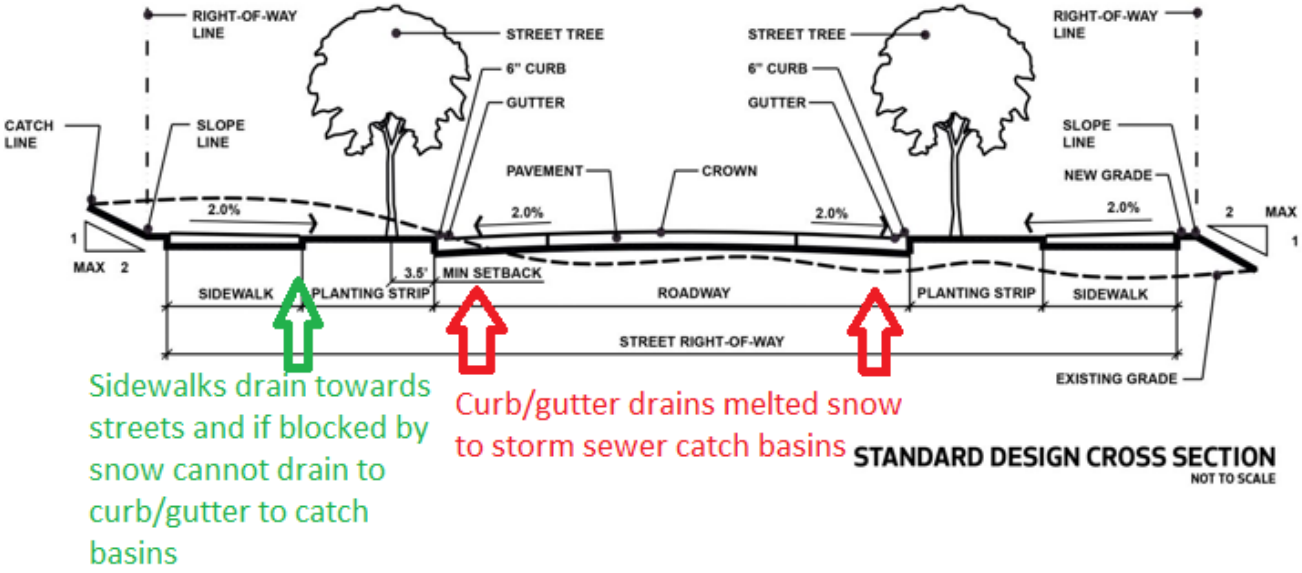
On occasion during winter months the City receives concerns with respect to sidewalk conditions after they have been plowed by City sidewalk snow removal equipment. The most common concerns are with respect to residual snow or ice that forms on some stretches of sidewalk after thaw and freeze cycles.

Department of Public Works staff members work hard to keep sidewalks cleared of snow during the winter season in accordance with the snow /ice removal policies for streets and sidewalks and City Ordinance (see end of memo for City Code excerpt). The City plows all 80+ miles of sidewalks after snow events.

The City currently utilizes utility vehicles with broom, blower and plow attachments to clear snow from sidewalks. Because each winter weather event is different, the City has these different snow removal attachments to match the appropriate removal equipment with the winter weather that occurs. Though there are several different kinds of vehicle platforms from utility vehicles with wheels to track vehicles to tractors, the attachments for removal are the universal.

Residual snow is present on streets and sidewalks after plowing whether it is with trucks on streets or snow removal vehicles on sidewalks. There is no equipment available that can remove all snow or ice. The difference between how street conditions can vary after being plowed in comparison to sidewalks primarily has to do with treatment material and infrastructure design variables. Streets are treated with salt with the application of material heavier when warranted on major streets and with a lower amount on local streets with heavier amounts at intersections, hills, etc. The City utilizes four plow trucks with salters that carry and put down six tons of salt material on 47.26 miles or 94.52 lane miles of streets to melt snow and ice. Streets are drain because they are designed with a crown that leads to curb/gutter that drains off melted snow to storm sewer catch basins at determined locations. There are no types of large enough storage/application apparatus to go with small sidewalk equipment that could effectively and efficiently apply salt material on 80 miles of sidewalk. With the smaller storage/application apparatus equipment that are available, the two pieces of equipment that the City uses to plow sidewalks would have to come back from their location to fill up very frequently delaying progress of clearing snow from sidewalks in a timely manner. Sidewalks are also not designed with a crown or with storm sewer drainage systems. Melted snow cannot drain to the lower elevation to the curb and street to drain in storm sewer catch basins because snow is usually present on both sides of a sidewalk. If residual material is not removed manually or does not

evaporate from daylight sun it is trapped by the snow on both sides of the sidewalk and refreezes. Below is a right-of-way cross section:



Cost of salt material is a factor that is considered beyond design and operational barriers. The City currently budgets approximately $80,000 per year for placing salt material on 47.26 miles or 96.52 lane miles of streets. Placement of salt on 80 miles of sidewalks would be an expenditure that would take away from other capital/operational investments or maintenance for street and sidewalk infrastructure.

Damage of unsealed sidewalks is another reason why sidewalks are not treated with salt. More expensive calcium chloride or potassium chloride ice melting products can be used to melt ice on sidewalks. The City utilizes these materials at school crossing locations to effectively melt ice without causing damage to sidewalks when treated on a frequent basis. The placement of salt causes spalling of unsealed concrete sidewalks. Below is a picture of salt damage to a section of sidewalk:

Placement of salt on sidewalks also has environmental implications. Salt that cannot drain from sidewalks and is used on a frequent basis also causes damage to trees and vegetation in the right-of-way. An increased amount above and beyond what is applied to streets eventually makes its way into

lakes, rivers, and streams which would increase salinity levels in our watershed negatively impacting the environment. Calcium and potassium chloride ice melting products are a better option for the environment as well. Below is a picture of salt damage to sidewalk and vegetation in the right-of-way.

If ice/compacted snow is present on sidewalks, there are a variety of slip on grippers that are available to help walkers with traction on icy surfaces. Products range from $10-$30 and slip over shoes or boots. Below are a few product pictures:

Ordinance Excerpt:

CHAPTER 42
SIDEWALKS

4.45. Winter Maintenance.

The City provides snow plowing service for City sidewalks. The level of service is limited to what can be provided by mechanical equipment. Due to these limitations, sidewalks may not be cleared or maintained to a dry pavement standard. Warming temperatures between plowing operations may result in a layer of compacted snow or ice on the sidewalk surface. Ice control is not provided by the City. In the event that the City is not able to provide snow plowing service for any reason, including equipment failures or employee shortages, the City Manager or designee may require property owners adjacent to sidewalks to clear and maintain the sidewalk until such time the City can restore service.