



CITY OF  
EAST GRAND RAPIDS

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DOUG LA FAVE  
DEPUTY CITY MANAGER

**MEMORANDUM**

TO: Honorable Mayor and City Commissioners

FROM: Doug La Fave, Deputy City Manager

DATE: July 7, 2025

RE: FY 25/26 Snowpack/Ice Sidewalk Plow Equipment Purchase

Action Requested: That the City Commission consider authorizing the purchase of three custom East Grand Rapids Department of Public Works sidewalk snowpack/ice removal equipment attachments for FY 25/26 in the amount of \$14,550 each, for a total of \$43,650 with \$4,350 contingency from Prosource Metal Works, LLC of Wyoming, MI.

Background: The City of East Grand Rapids Department of Public Works (EGRDPW) has plowed city sidewalks for many years with v-plow, broom, and snowblower attachments. As demographics in the community have changed, some expectations have evolved with respect to what sidewalk snow plowing level of service should or can be.

Currently, the city plows over 80 miles of city sidewalks in accordance with the current Snow and Ice Guidelines and Ordinance provisions:

**Snow and Ice Guidelines Excerpt:**

8. City sidewalks are plowed after a snow accumulation of approximately two inches and on weekends when the snow fall has concluded. Sidewalk priority routes for schools are addressed as needed to ensure sidewalks are clear prior to the start of school. The city does not provide ice control to city sidewalks. Residents are encouraged to do so, if necessary, along their frontage.

**City Ordinance Excerpt:**

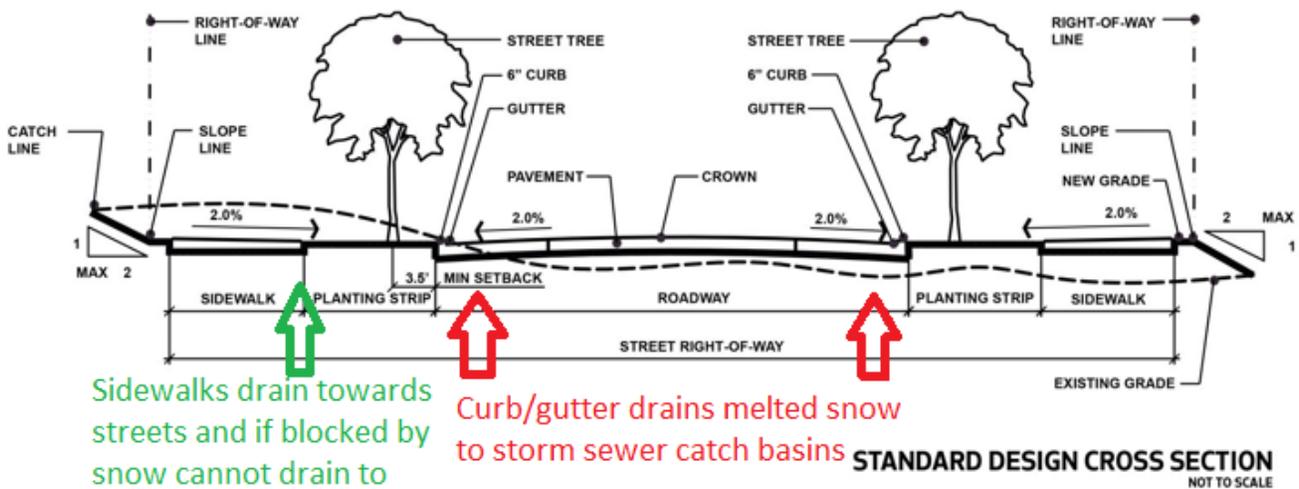
**Chapter 42 - Sidewalks**

**Section 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.

EGRDPW currently utilizes equipment that can be equipped with broom, snowblower, and plow attachments to clear snow from sidewalks. Because each winter weather event is different, EGRDPW has these different snow removal attachments to match the appropriate equipment with the winter weather that occurs and associated response times. Though there are several different kinds of vehicle platforms from utility vehicles with wheels, track vehicles to tractors, the attachments for removal are generally the same in the industry.

Residual snow is present on streets and sidewalks after plowing whether it is with trucks on streets or snow removal vehicles on sidewalks. Currently there is no type of equipment that can mechanically 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 variables. Streets are treated with salt deicing agents with material applied when warranted on major streets/priority routes and with a lower amount on local streets with priority at intersections, hills, etc. EGRDPW utilizes plow trucks with salters that carry and put down six tons of salt material on approximately 50 miles or about 100 lane miles of streets to melt snow and ice. Streets 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. Repeated mechanical scraping of streets combined with salt or other deicing agents, sun and surface temperatures help clear snow and ice from streets effectively. Sidewalks are 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 at times because snow is present on both sides of a sidewalk and or the ground surface can be frozen (no absorption). If residual material is not removed manually or does not evaporate when it is melted from sunlight it can be trapped by the snow on both sides of the sidewalk and refreeze. Below is a right-of-way cross section:



Cost of salt material is a factor that is considered beyond design and operational constraints. The city currently budgets approximately \$80,000 per year for salt material for the approximately 50 miles or about 100 lane miles of streets. Application 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. There is also not adequate salter equipment capacity to carry the volume needed to apply deicing material similar to what exists for plow trucks (as noted one plow truck can carry six tons). Smaller salters that are on the market for sidewalk plows hold low volume and empty in a very short period which would interrupt the process and require more trips back and forth to refill

and apply material. This would not only impact operational efficiency, but also utilize more fuel, which would add additional environmental impact.

Damage of unsealed concrete sidewalks is another reason why sidewalks are not treated with salt. More expensive calcium chloride or potassium chloride deicing agents can be used to melt ice on sidewalks. The city utilizes these materials at school crossings, transit bus stops, and facility 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.

Image of salt damage to a section of sidewalk-Below



Placement of salt on sidewalks has environmental implications. Salt that cannot drain from sidewalks and if used on a frequent basis causes damage to trees and vegetation in the right-of-way. An increased amount above and beyond what is applied to streets also eventually makes its way into lakes, rivers, and streams which would increase salinity levels in our watersheds, negatively impacting the environment. Calcium and potassium chloride ice melting products are better options for the environment but are not feasible at the scale needed due to application equipment, operational, and financial limitations.

Image of salt damage to sidewalk and vegetation in the right-of-way-Below



EGRDPW has endeavored to improve winter sidewalk maintenance for the community by researching and piloting multiple snowpack and ice crushing attachments from across the globe including China, Canada, and Europe over the past five years. While variations of the attachments demonstrate improvement, challenges remain related to speed and efficiencies, requiring multiple pieces of equipment and EGRDPW personnel to operate at very low speeds or equipment designs that are not as conducive to the wide variation of winter weather experienced in West Michigan. As a result of piloting various pieces of equipment EGRDPW partnered with a local fabricating business to design and custom build a EGRDPW sidewalk snowpack/ice removal attachment that can improve our level of service for winter snow event responses. The equipment is lightweight, utilizes replacement teeth that are readily accessible in the marked (asphalt mill teeth), and a custom underbody blade that is spring loaded that allows for adequate down pressure for removal of crushed snowpack and ice while avoiding conflicts with sidewalk imperfections at the same time it is crushed, thus reducing the need for multiple pieces of equipment and operators and improving service delivery speed.

This custom equipment attachment and associated use does not require a modification to the noted policy/guidelines or ordinance.

Image of custom sidewalk snowpack/ice removal equipment attachment in active design/build process-Below

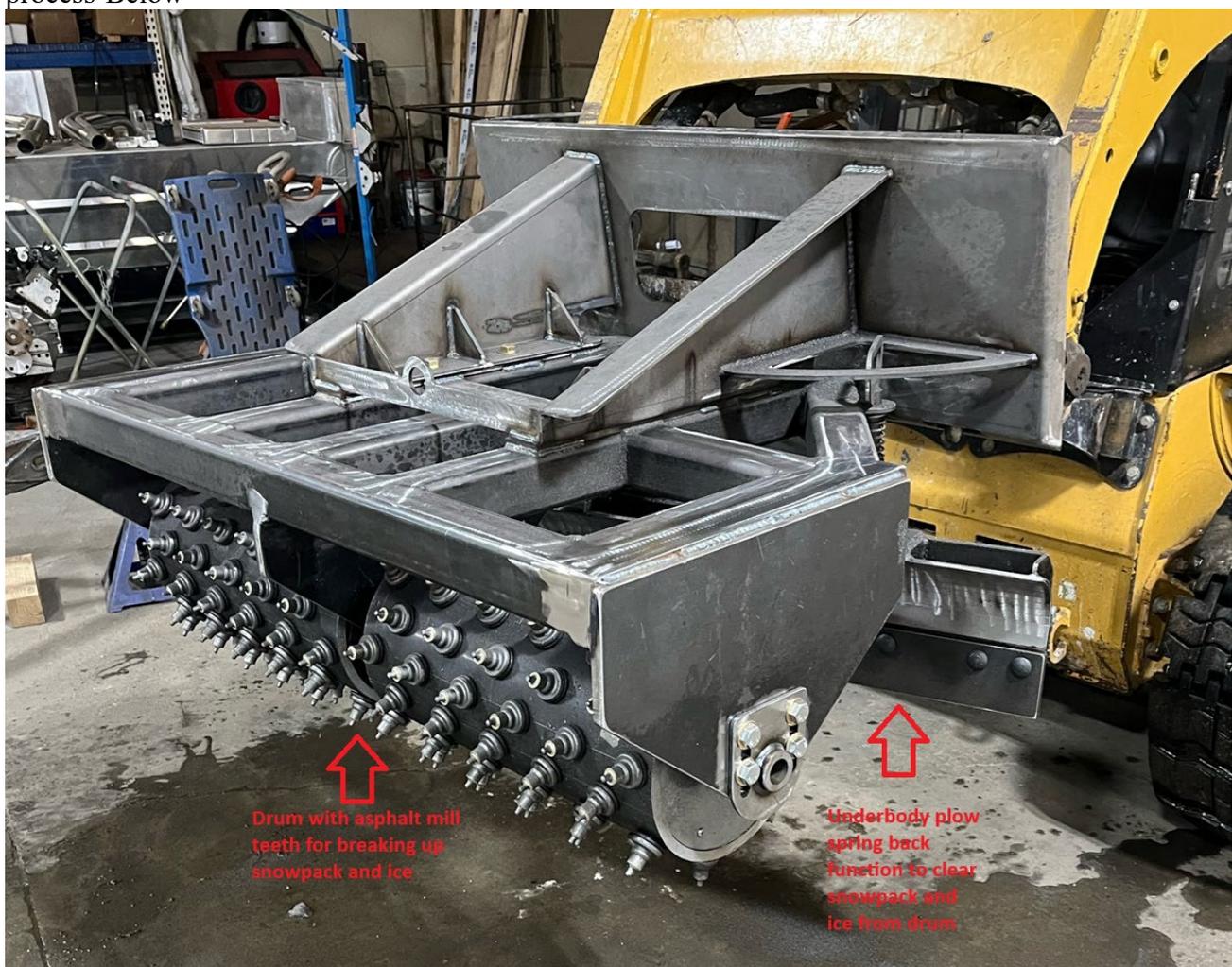


Image of completed custom sidewalk snowpack/ice removal equipment attachment-Below



This equipment item purchase request is in alignment with the FY 25/26 Goals and Objectives and Strategic Plan Infrastructure Priority 1.

**DPW OPERATIONS:**

**Goal (Continued):** Alternative sidewalk snow removal equipment and concepts (Strategic Plan Infrastructure Priority 1)

**Objectives:**

- 1.) Research new, alternative, and emerging technology/equipment and pilot. **Status: Ongoing.** The city has purchased several snow/ice pack equipment attachments from Canada to enhance sidewalk snowpack/ice removal for residual material that remains after plowing, blowing, or brooming sidewalks. In FY/24/25 city staff has worked with a local fabricator to make a custom EGR proto-type blending concepts.
- 2.) Secure and deploy equipment based on operational capability. **Status: In-process.** Capabilities for conditions and operational response times and effectiveness are being tested/documentated for future policy/guideline considerations or recommendations.



This equipment item purchase request is in alignment with the 2024 Climate Action Plan. By integrating multiple pieces of equipment with improved and efficient design, operation for the service improvement to the community can be achieved with less equipment, reducing fuel consumption.

SCOPE 3 (VALUE CHAIN EMISSIONS)					
CATEGORY	STRATEGY	REDUCTION POTENTIAL	FINANCIAL INVESTMENT	POTENTIAL PARTNER(S)	TIMEFRAME
Scope 3: Purchased Goods and Services	Select Partners with Reduction Initiatives and Targets		\$0		Ongoing
Purchased goods and services represents 54% of EGR's emissions. Many of these purchases are related to cement/asphalt for road work, finance and professional services, electronic equipment, and salt for roads. Carefully selecting partners and suppliers that have low-carbon products, emissions reductions initiatives, and GHG reduction targets would help to reduce these emissions. In order to reduce EGR's Scope 3 footprint, suppliers need to focus on reducing their own Scope 1 and 2 emissions. Many organizations have sustainability reports or information on their website regarding their environmental commitments. Additionally, inquiring about an organization's environmental practices during the RFP period will help to select the best partner.					
Scope 3: Capital Goods	Select Partners with Reduction Initiatives and Targets and Low Emissions Equipment		\$0		Ongoing
Capital goods represents 22% of EGR's Scope 3 emissions. Many of these emissions are resulting from construction, machinery, and transportation equipment. These emissions can be reduced by selecting suppliers that utilize lower-emissions technologies like electric equipment. These actions will likely be taken by environmentally conscious organizations. Similar to purchased goods and services, identifying partners with GHG reduction targets that are actively mitigating their impacts will help to reduce these emissions. By inquiring with suppliers, this may influence or inspire suppliers to prioritize working to reduce emissions.					
Scope 3: Waste Generated in Operations	Waste Disposal Education		\$0		Ongoing
Waste generated in City operations accounts for 12% of the City's Scope 3 emissions. Tracking waste types and implementing waste disposal education can reduce the amount of recyclables accidentally sent to landfill and promote mindful consumption in City buildings. Many organizations and municipalities alike have implemented educational material around disposal bins identifying how waste should be sorted to promote proper waste disposal, and work to eliminate or reduce materials (water bottles, handouts, etc.) in City operations that may require disposal.					
Scope 3: Employee Commutes	Work from Home Policy		\$0		Ongoing
Although employee commutes account for less than 1% of the City's Scope 3 emissions, there is opportunity to reduce this further, if desired. If the City were to allow employees to work-from-home 1 day a week, this would reduce employee commutes by roughly 20% for this category.					
Scope 3: Upstream Transportation and Distribution	Electric Distribution Trucks/ Offsets		\$0		Transportation Suppliers
Upstream and downstream distribution accounts for less than 1% of the City's Scope 3 upstream emissions, but there is opportunity to reduce this further. EGR could work with transportation and distribution companies to see if they use electric trucks to deliver materials. Additionally, transportation companies may offer the opportunity to offset delivery emissions at an additional cost					
Scope 3: Fuel-and-Energy Related Activities	Reduce Fuel and Electricity Usage		\$0		Ongoing
EGR's fuel-and-energy related activities emissions account for 11% of the City's Scope 3 emissions. These emissions are a result of the production of fuels and energy purchased and consumed. Therefore, in order to reduce the associated emissions with fuel and energy, EGR should continue to focus on reducing its reliance on natural gas and fuels and non-renewable electricity. As EGR reduces energy consumption and becomes more efficient and moves away from fossil fuels, these emissions will naturally decrease.					
Upstream Scope 3	Quantify Scope 3 Reductions to Measure Progress			Preferred Service Provider/ Internal Staff	Near-Term
For the quantification of Scope 3 emissions, a spend based approach was utilized using life cycle GHG emissions by commodity and EGR's spend data for various categories. While this approach is valuable as an initial step to get an estimate of emissions and understand hotspots, it is recommended that in the future EGR pursues using activity data in order to calculate the specific Scope 3 category, as recommended through The Greenhouse Gas Protocol's Scope 3 Methodology. This will yield more accurate results, and allow the City to track and measure progress. It is recommended that an evaluation occurs every 2-3 years to capture updates.					

This purchase request is accounted for in the FY 25/26 budget and would provide a total of four units for EGRDPW to utilize for response.

This has been reviewed by the Infrastructure Committee and determined to be in order.

**REVIEWED & APPROVED FOR SUBMISSION:**



Shea Charles  
City Manager