



SNOW OPERATIONS

June 28, 2023



Agenda

- **Introductions**
- **Review of Current Snow Operations**
- **Summary of 2022-2023 Snow Season**
 - **Snow Operations**
 - **Ticketing & Towing**
 - **Communications & Engagement**
- **Preparing for Future Snow Seasons**
 - **Citywide Vision, Mission, Goals**
 - **Citywide Work Groups**
- **Questions & Discussion**



Winter Maintenance Service Levels

Arterial Streets

- Plowed and treated to bare pavement in drive lanes
- Plow compacted snow in parking lanes
- *Plowed and treated during all winter events*



Residential Streets

- Safe and passable
- Plow compacted snow
- Salt high priority areas: hills & curves
- *Only plowed during snow emergencies*





What is a Winter Event?

Winter Event: Any time Public Works responds to winter weather conditions

- Small: Anti-icing or deicing bridge decks overnight for frost (*2-7 trucks*)
- Medium: Salting and plowing operations on arterials and problem spots (residential hills, curves, etc.) with 2"-3" of snow (*10-30 plows*)
- Large: Snow Emergency declared; plow all arterial and residential streets (*70-80 plows*)
- **Average 20-30 Winter Events per winter season**

2018-2019:

- 27 Winter Events ; 7 Snow Emergencies

2019-2020:

- 19 Winter Events ; 4 Snow Emergencies

2020-2021:

- 17 Winter Events ; 2 Snow Emergencies

2021-2022:

- 20 Winter Events ; 4 Snow Emergencies

2022-2023:

- 44 Winter Events ; 7 Snow Emergencies (including a back-to-back); 1-sided Parking Ban





City of Saint Paul: Public Works Snow Operations

1,950 lane miles – Saint Paul to Anaheim, CA

⑩County: 246 lane miles *(by reimbursable maintenance agreement)*

⑩State: 122 lane miles *(by reimbursable maintenance agreement)*

⑩City (Arterial): 396 lane miles

⑩City (Residential): 1,186 lane miles

186 Bridge Sidewalks, City Sidewalks, Medians, and Public Stairs

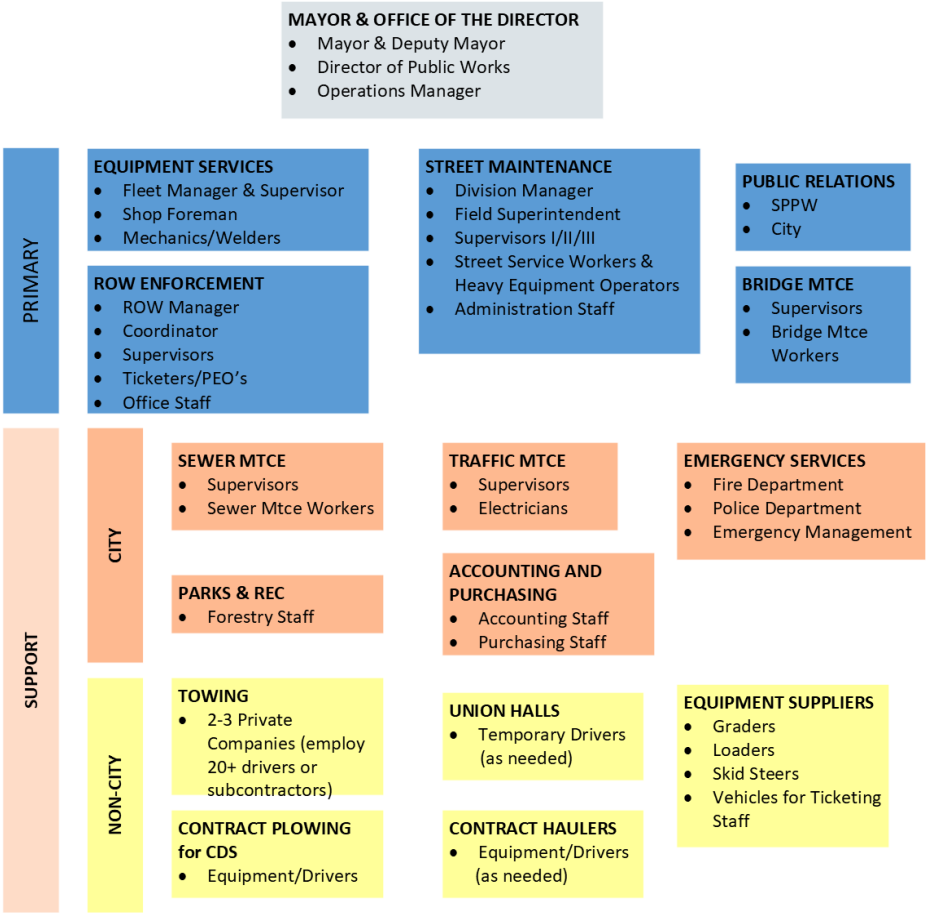
97 Bridges

2,225 alleys *(not plowed by City)* which is 330 miles

145 miles of bike lanes and more miles of bike paths and trails



Winter Events Organizational Chart



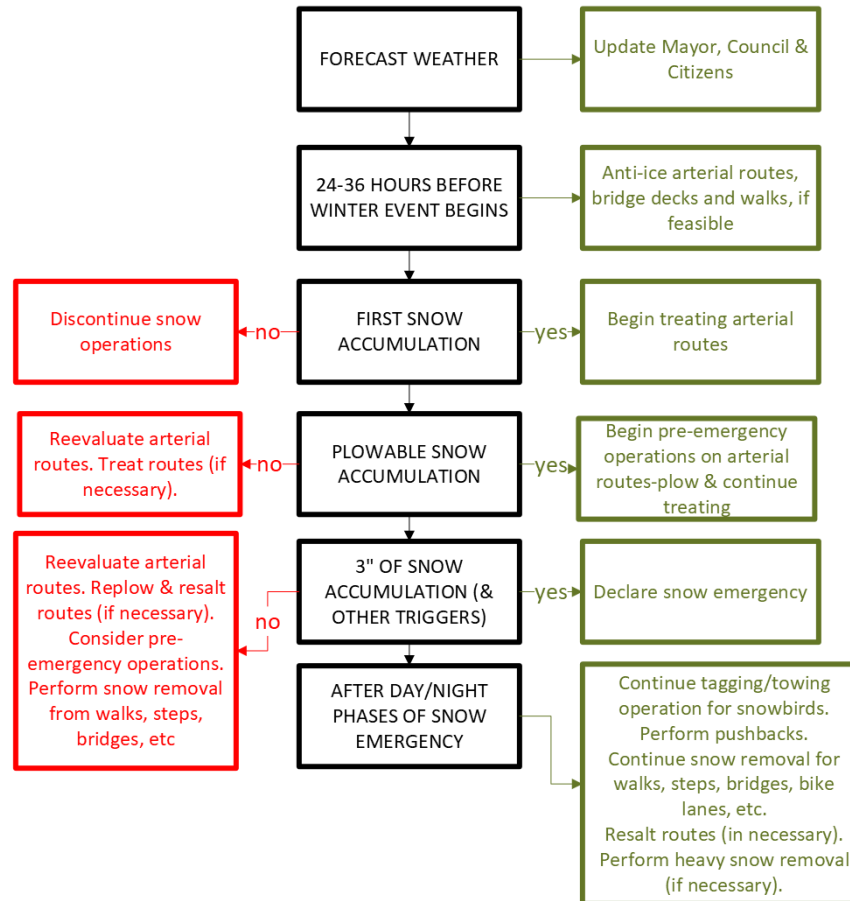


Snow Emergency Declaration

- **Snow Emergency Declaration decision based on:**
 - Snow accumulation (3" or more)
 - Snow/water ratio
 - Existing road conditions
 - Future weather
 - End of snow event
 - Confer with other cities/SPPS/emergency services departments
- **Snow Emergency Declared by 3 p.m., start at 9 p.m.**
 - Night phase and day phase (first 20-24 hours)
 - Clean up phase (next 72 hours)
 - Snow Emergencies last 96 hours
- **Decision makers:**
 - Mayor/Deputy Mayor
 - Public Works Director
 - Public Works Operations Manager
 - Street Maintenance Division Manager
- **Communications:** notify public (e.g. web, social, email/text); parking rules/compliance



Progression of Winter Operations





Snow Emergency Phases

Declared but not in effect (approx. 3 p.m. – 9 p.m.)

Communications: Snow Emergency declared and winter parking rules in effect at 9 p.m.

PW Operations: Preparing plows, staff and ticketing operations



Night Plow Routes (9 p.m. – 7 a.m.)

Communications: Night Plow has started

PW Operations: Ticketing & towing on Night Plow routes, Plowing Night Plow routes throughout City



Day Plow Routes (8 a.m. – 5 p.m.)

Communications: Day Plow has started

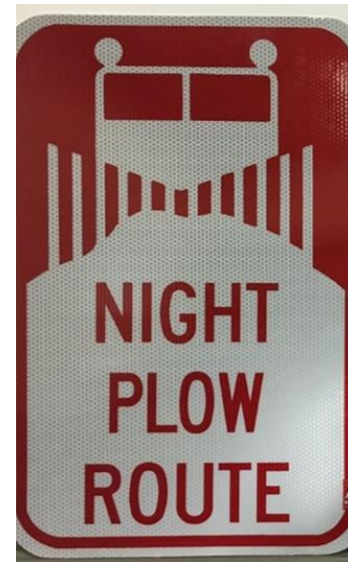
PW Operations: Ticketing & towing on Day Plow routes, Plowing Day Plow routes throughout City, Plowing bridge sidewalks and bike lanes



Clean Up (5 p.m. – remainder of 96 hours)

Communications: Night & Day plow routes complete, park only where fully plowed to the curb, vehicles can still be ticketed & towed

PW Operations: Ticketing & towing of snowbird vehicles, Clean up of Intersections & Pushbacks where vehicles have moved; clearing medians, bike lanes, steps, crosswalks, and city sidewalks





Anti-Icing & Brine

- Minimizes bonding of ice/snow to road surfaces
- Priority Routes
 - Bridge decks & downtown
 - Arterials by traffic volume
 - Residential hills/curves
- Average 50,000 gallons/event
- Fringe events are difficult – rain/sleet/snow
- Salt products less effective at $<15^{\circ}\text{F}$
 - Prewet for activation and sticking in the drive lanes
- Technology is evolving
 - High capacity brine making equipment
 - New brine materials
 - Direct liquid applications used more than in past years





Art of City Plowing

72 plow routes for Snow Emergencies (35 Night and 37 Day Routes)

Start throughout the City; staffing can affect start times of some routes

Routes are maximized for efficiency

- Timed to be completed within the phase when fully staffed

Speed of plows to lift snow

- Intersections, driveways, sidewalks, and differing boulevard & street widths

Arterial vs. residential plowing

- Residential streets are not plowed to bare pavement
- Center cuts; pushes snow into parking lanes

Avoid urban obstacles

- Parked cars, trailers; recycling and garbage carts (do not put in street); bump outs; center medians
- Snow pushed into street causes hazards



Urban City Plowing Operational Challenges

- Lack of off-street parking
 - Colleges, apartments
 - Abandoned cars
- Narrow streets
- Sidewalks and sidewalk corners
- Multiple street and alley intersections
- Limited and variable snow storage space in boulevards
- No routing software; paper route lists
- Residents, businesses, private contractors plowing snow into the street
- Steep hills and curves
- Bike lane maintenance
- Equipment – limited, older
- Staffing – lack of plow operators (CDL) & ticketers
- Bus stop shoveling (Metro Transit, Public Works, Private Property Owners)
- Limited rental equipment availability





Comparisons

Minneapolis

- Belly plows on trucks and can go into residential streets more frequently
- More unannounced residential plowing
- More center passes
- Plow alleys (via contractor)
- Complete pass in 36 hours during snow emergencies (20 hours for Saint Paul)
- Use more sand (Saint Paul uses Best Practices of salting at 15F or higher)
- Plows 18 miles of state and county roads (Saint Paul plows 107 miles of state and county roads, which are high priority)
- Staffing – can call in municipal garbage and water employees for larger plowing efforts

Suburbs

- Seasonal parking bans
- Wider streets
- Predominantly off-street parking
- Don't have sidewalks on both sides of road
- More public boulevard/right of way (e.g. cities don't have trees or items in boulevard areas)
- More snow storage space
 - Benching
 - Piling snow in cul-de-sacs
- State and county roads not plowed by city



Ticketing & Towing Operations



- **We have parking problems, not plowing problems**
 - Lack of off-street availability
 - Low compliance of cars being moved
- **Ticketers: Full-time & temporary City employees, SPPD, parking enforcement**
 - Need 70 ticketers for Night Routes
 - Need 70 ticketers for Day Routes
 - Follow the exact plow routes; eventually get passed by plows, but continue to ticket
- **Tickets: 2,200+ per snow emergency (2022-2023)**
- **Tow: 700+ per snow emergency (2022-2023)**
 - Tow contractors assigned 4 towing zones
- **Cost:**
 - Parking ticket: \$56 (Ramsey County)
 - Public Works doesn't get any proceeds, but pays the expenses
 - Impound fee: \$275.08 plus \$15 storage a day (Tow company & SPPD)



Communication Tools

- Snow Emergency brochure - mailed to 81,000+ residents (July)
 - Translated versions online: Spanish, Hmong, Somali, Oromo, Karen, Burmese, Lao
- stpaul.gov/snow
- 651-266-PLOW (recorded Snow Emergency message)
- [Snow Emergency Parking Map](#)
- GovDelivery emails & text alerts – opted in 130,000 emails & texts
 - English, Spanish, Hmong, Somali, Oromo (text only)
- Social media
 - [Nextdoor](#) (1 multi-lingual message) 72,000 members
 - [Facebook](#) (1 multi-lingual message) 32,000 followers
 - [Twitter](#) (4 tweets in different languages on PW and City) 84,100 followers
- Paid digital advertising – Pioneer Press & All Over Media (*weekdays only*)
- Media outlets
- City cable channel 18
- TPTs Emergency Response System (multilingual)
- Library and Parks & Rec digital display boards
- All-City employee email
- On street dynamic display boards (new in 2023)



2022-2023 Snow Season Summary



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Snow Operations Summary

SAINT PAUL WINTER OPERATIONS

2022 - 2023

90.3" of Snow

3rd snowiest winter on record

20 Days

of one-sided parking ban

11,085+ Hours

of Snow Emergency plowing

12,600+ Lane Miles

plowed during Snow Emergencies

1,200 Tandem Loads

removed from city streets

55,000+ Gallons

of brine anti-icing initiatives

18,484 Tons

of salt applied

44 Weather Events

highest precipitation amounts to date

108 employees

worked over 16+ hours straight

7 Snow Emergencies

one back-to-back event declared



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<https://www.stpaul.gov/>



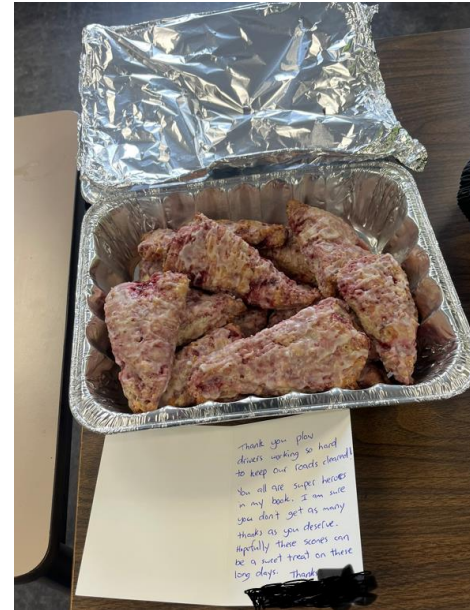
Totals:	20,685	4,991
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Communications & Engagement Summary

- StPaul.gov/snow (snow webpage) and Interactive Snow Emergency Parking Map are the #1 and #4 most frequented pages on the City's website
 - Nearly **500,000 visits** to st.paul.gov/snow
 - **67,000+ visits** to stpaul.gov/snowemergency parkingmap
- 1+ million emails & texts sent to residents (opt in)
- Social Media
 - Public Works Twitter (*numbers do not include City Twitter*)
 - 98** posts
 - 179** replies from staff
 - 1,742** interactions
 - City of Saint Paul Facebook (*PW & Snow Emergency posts were 67% of total posts from 11/28/22-4/1/23*)
 - 132** posts
 - 697** replies from staff
 - 895,765** viewed posts
 - 33,042** interactions (likes, comments, clicks etc.)
- 180+ media inquiries & interviews
 - 2 press conferences with Mayor

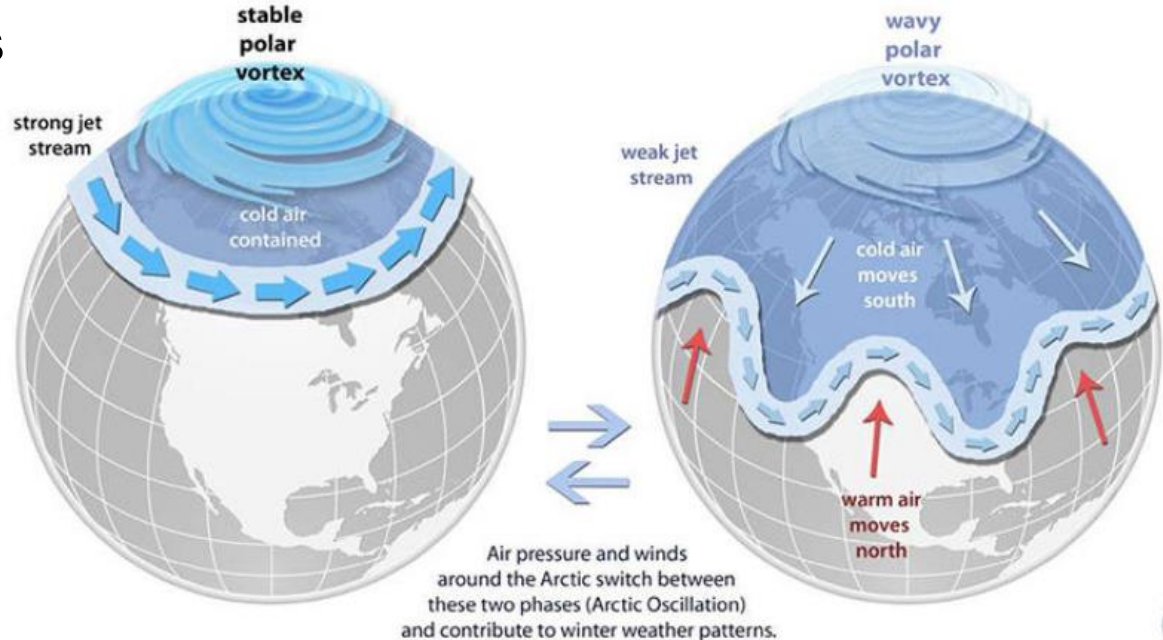




What's Changed?

- Climate change
(graphic from NOAA)
- On-street parking needs
- Driving behavior, volumes, and patterns
- Modal shifts in transportation
- Resident service expectations
- External work force dynamics

The Science Behind the Polar Vortex



Preparing for Future Snow Seasons



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Citywide Snow Operations - Mission, Vision, Goals

Vision: To create and deliver innovative, effective, and sustainable citywide snow operations that makes Saint Paul a city that works for all of us.

Mission: Strengthen collaboration to transform Saint Paul's current snow operations into a more cohesive and responsive citywide system to deliver safe and accessible streets, trails, sidewalks, and public facilities that meet residents' expectations of service delivery.

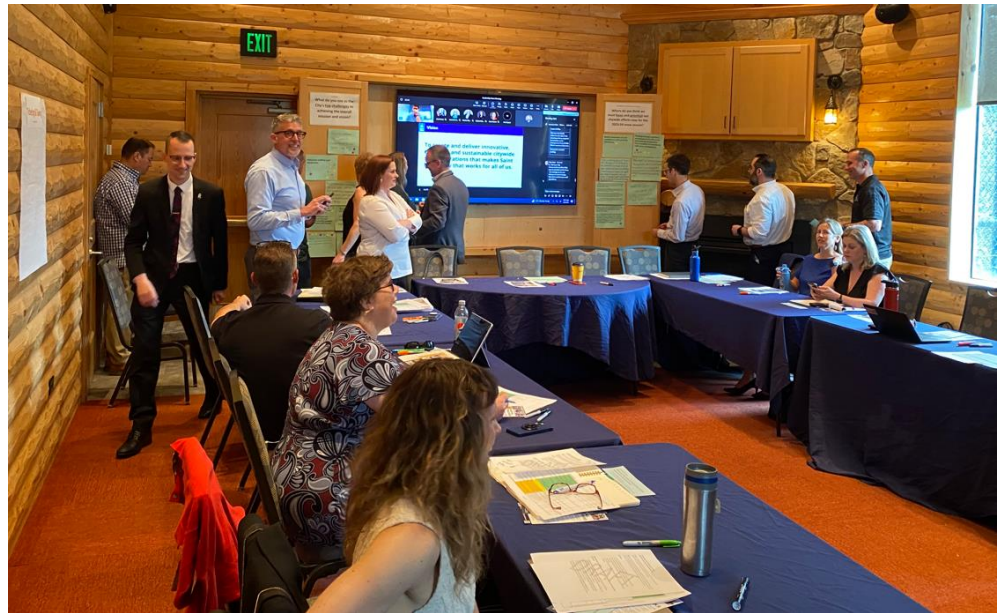
Goals:

1. To ensure **safety for emergency vehicles** by successfully clearing all 1,800 lanes miles of roadway in the first 20 hours of a snow emergency.
2. To **maintain bike and pedestrian mobility**, clear all 150+ miles of bike, bridge, and pedestrian trails in the first 20 hours of a snow emergency.
3. To **maximize pedestrian accessibility in partnership with community and other agencies**, improve snow clearance of transit, pedestrian, and other prioritized corridors in the full 96 hours of a snow emergency.
4. To **establish plans and protocols for initiating a multi-agency response** to an extreme snowstorm, e.g. greater than 28", or a debilitating wind/snow/ice event.



Citywide Work Groups

- Snow Operations
(Public Works & Parks)
- Private Operations/Ordinances
(Public Works & DSI)
- Ticketing & Towing
(Public Works, CAO & SPPD)
- Recruiting, Hiring & Retention
(Public Works & HR)
- Communications & Engagement
(Public Works & Mayor's Office)





Questions and Discussion



Other Winter Weather Impacts



Sidewalks – shoveled by property owners, within 24 hours of snowfall



Bus stops/shelters & light rail - MetroTransit



Park trails – Parks plows



Alleys – not plowed by City



Recycling & Garbage – do not put carts in street or snowbanks, shovel out a space for your cart



Bike lanes and dedicated bike paths (e.g. Summit Ave and Pelham St)



Snow Emergency Info & Contacts



www.stpaul.gov/snow



651-266-PLOW (7569) Snow Emergency Status (recorded message)



snowemergency@ci.stpaul.mn.us To report specific locations of icy areas, windrows, pushbacks during the Clean Up Phase



651-266-9800, option 2 Ticket & Towing Office; leave voice mail message



651-266-9700 Street Maintenance; leave voice mail message



Budget: More than just plowing

PW Winter Operations Budget – plowing, brining, shoveling, pothole patching, garbage/illegal dumping

Winter season spans across 2 budget years

\$400,000 - \$800,000 per snow emergency

Budget 4 snow emergencies per calendar year

- 3 snow emergencies January – April 2022
- 3 snow emergencies November & December 2022
- 4 snow emergencies in January – April 2023 (and 1-side parking ban)

Staffing is 365/24/7, but changed for winter – increase nights and weekends



How can you help?

- Share Snow Emergency Info and Resources Often (all year long)!
 - Encourage people to sign up for Snow Emergency alerts and texts – stpaul.gov/snow Encourage people to download the Snow Emergency Parking Map – stpaul.gov/snowemergencyparkingmap
 - Share updates and info about the Snow Emergencies through your channels
 - Answer resident questions & inquiries
 - Do not put recycling and garbage carts in the street
- Night & Day Plow Phases
 - Direct residents to 651-266-PLOW (recorded message) or stpaul.gov/snow
 - Use Snow Emergency Parking Map to help residents know when & where to park
- Clean Up Phase
 - General clean up (icy areas, windrows, pushbacks) – snowemergency@stpaul.gov (provide detailed location info)
 - Blocked storm drain – Sewers 651-266-9850
 - Sidewalks not shoveled – DSI 651-266-8989
 - Damage caused by plow – Street Maintenance 651-266-9700 or snowemergency@stpaul.gov



How can you help? (Ticketing & Towing)

- During Clean Up Phase – Parked/towed car related questions
 - To request ticketing & towing of parked cars
 - Call 651-266-9800 (option 2) with detailed location information & car description
 - Online form activated after night and day plow phases are done (stpaul.gov/snowticketing)
 - After Snow Emergency ends (96 hours) – call Police non-emergency at 651-291-1111 with detailed location information & car description
 - To find towed cars
 - Visit stpaul.gov/impound & enter VIN or license plate number
 - Call Cathlin Street (across from State Fair) at 651-603-6859
 - Call Barge Channel Lot at 651-266-5642



How can you help? (Recycling & Garbage)

- Do not put recycling and garbage carts in the street!
- Find out about winter weather collection delays stpaul.gov/wintercollection

- Recycling
 - Call Eureka at 651-222-7678 or the City at 651-266-6101
 - Visit EurekaRecycling.org

- Garbage
 - Find garbage hauler – stpaul.gov/garbagemap
 - Aspen Waste Systems: 612-884-8008
 - Gene's Disposal Service: 651-426-1224
 - Highland Sanitation: 651-458-0043
 - Republic Services: 651-286-4590
 - Waste Management: 763-784-8349