

Winter Weather Preparedness
Snow and Ice Control

City Council Presentation

COJ Team | October 20th, 2025

https://www.joplinmo.org/1202/Snow-Ice-Removal-Program

Overview



The Public Works Infrastructure Maintenance Division performs snow and ice control on all bridges, arterial (primary) streets and collector (secondary) streets.

Infrastructure Maintenance Division leaders annually attend the American Public Works Association (APWA) Snow Conference for insight and training in modern snow and ice control methods.

The goal of the snow and ice control program (treating and plowing) is to provide adequate mobility and safety for citizens and emergency services.

In addition to bridges and streets, the Infrastructure Maintenance Division treats and clears trolley stops, sidewalks adjacent to city owned facilities, trouble areas (historically slick steep grades and intersections), and public parking lots.

Event preparation begins when extended forecasts predict the possibility of winter weather for the area. As the weather system approaches, staff monitors the National Weather Service Hazardous Weather Outlook, short-range forecasts from local media outlets and consults Emergency Management. When winter weather is imminent, crews are staged for the Winter Weather event.

Winter Weather Preparedness



Materials inventory and purchase

Equipment preparation and route readiness

Event priorities

Materials

Materials used for snow and ice control are purchased in bulk during the off-season taking advantage of lower pricing.

Quantities purchased are based on current inventory and historic usage data.

- Road Salt
- Beet Juice









Equipment Preparation and Routes





Pre-Season Preparations (Late October to Early November)

- New operators trained on plow functions and routes
- Snow boxes are inspected to ensure that they are functional
- Snowplow blades are inspected to ensure that they are operation ready
- Safety lights on trucks and snow boxes are inspected to ensure that they are in proper working order

Pre-Event Preparations (24-48 hours prior to forecasted event)

- Mix Brine - solution of salt and water mixed to 23.3% salinity
- Dry run routes with operators
- Check routes for any possible obstacles or obstructions. (utility cuts, work zones, etc.)
- Final pre-event equipment inspection

Snow and Ice Control Priorities During Event



- Bridges
- Streets
- Trolley Stops
- Sidewalks adjacent to city owned facilities
- Trouble Areas
- Medical Centers/Schools – Arterial and collector streets adjacent to these facilities are included on established snow routes. Areas around medical centers are treated and plowed by medical center staff. Streets adjacent to schools are treated and plowed after higher priority areas are cleared.
- Public parking lots and city facilities

Bridges





- Bridges are prone to ice formation when air temperature is slightly below freezing
- Bridges are monitored and treated with a salt/brine combination prior to freezing temperatures.
- Bridges are treated periodically throughout the duration of a winter weather event.
- Crews monitor and treat a total of 7 bridges.

Streets

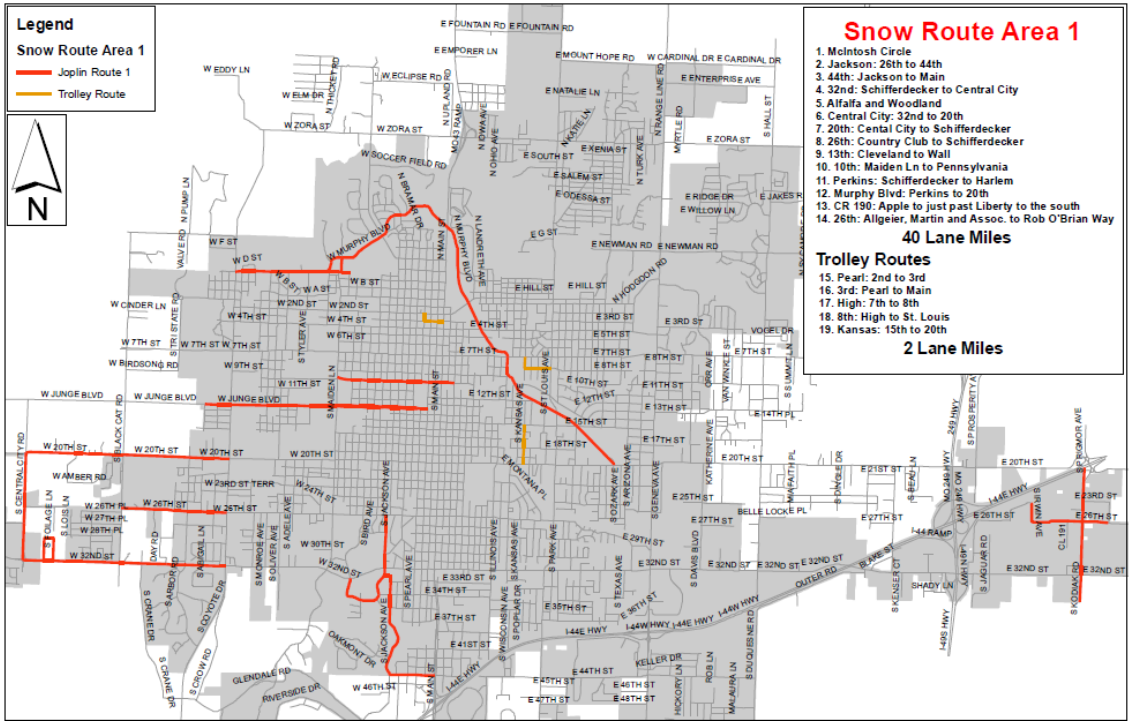




- Only arterial and collector streets are treated and plowed.
- Residential streets are not treated or plowed
- Streets are treated with a combination of salt and brine before and during plowing.
- Trucks are used in tandem during plowing operations.
- Four (4) fixed routes consisting of 255 total lane miles. Routes are run simultaneously.
- Each route takes approximately 4 hours to complete. When a route is finished it is restarted if necessary.

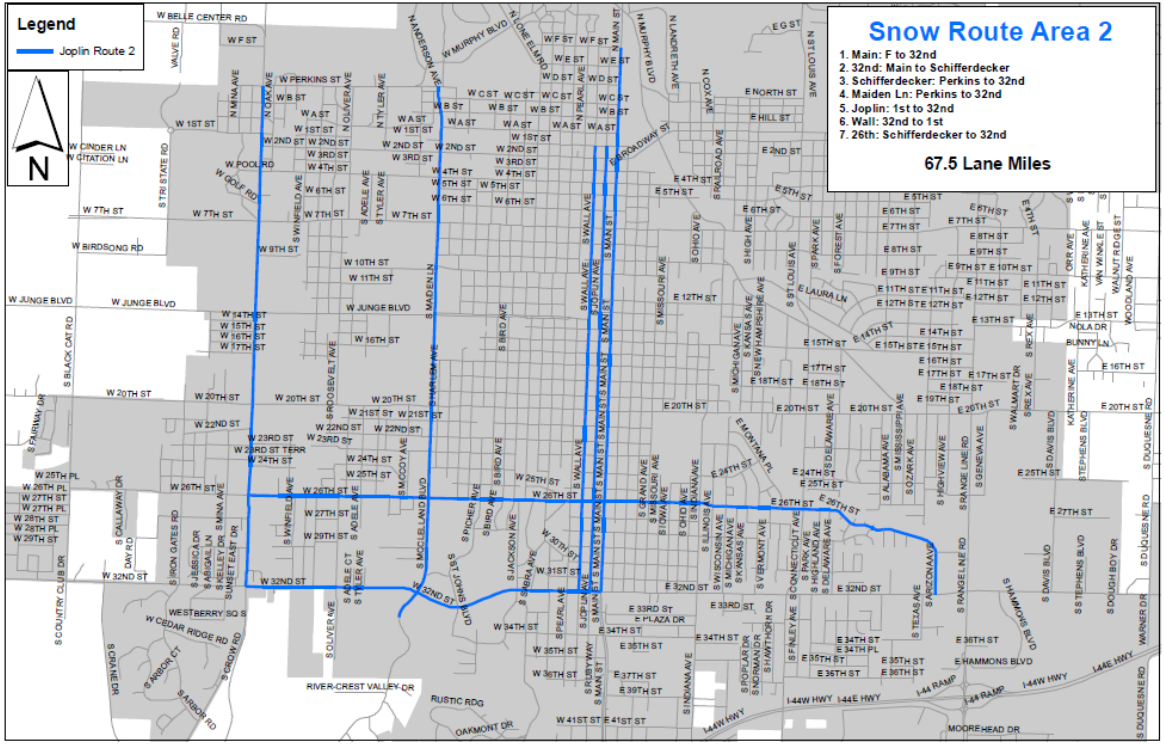
Snow Route Maps

Area 1



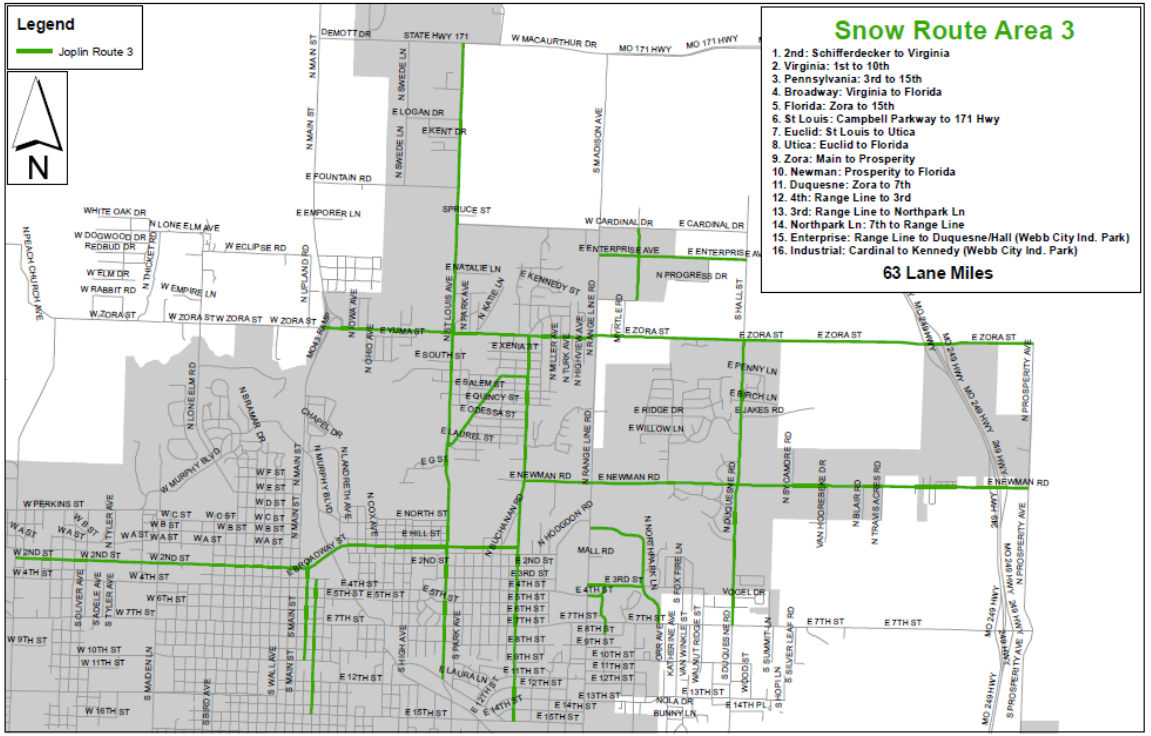
Snow Route Maps

Area 2



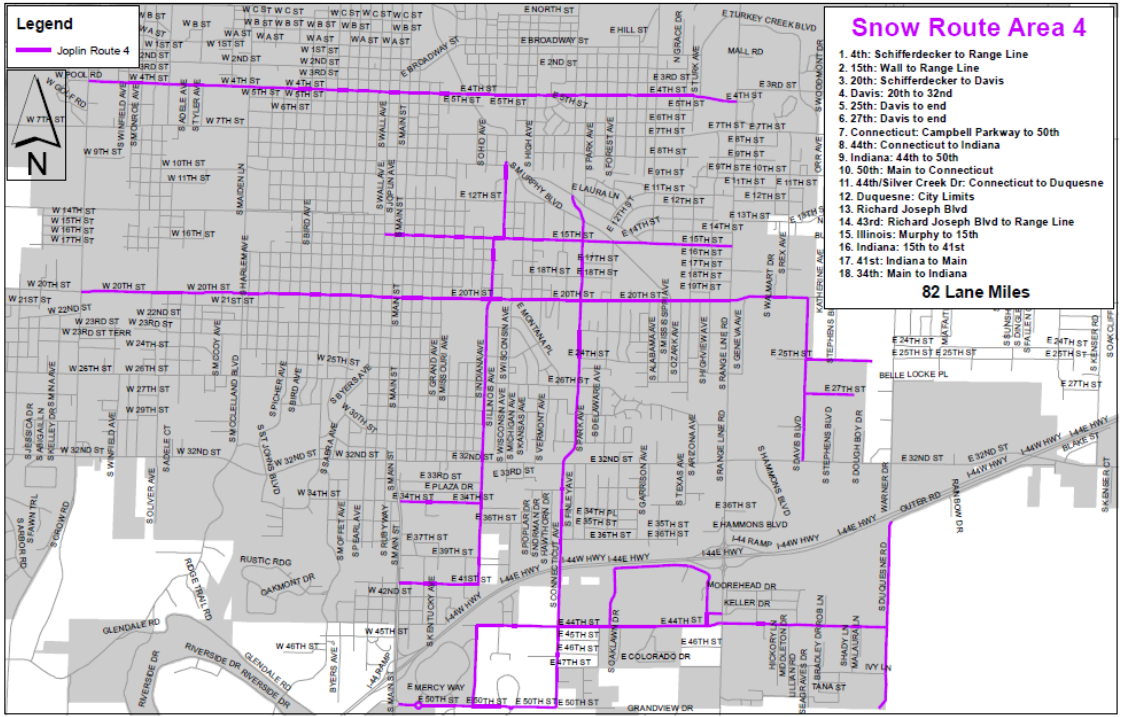
Snow Route Maps

Area 3



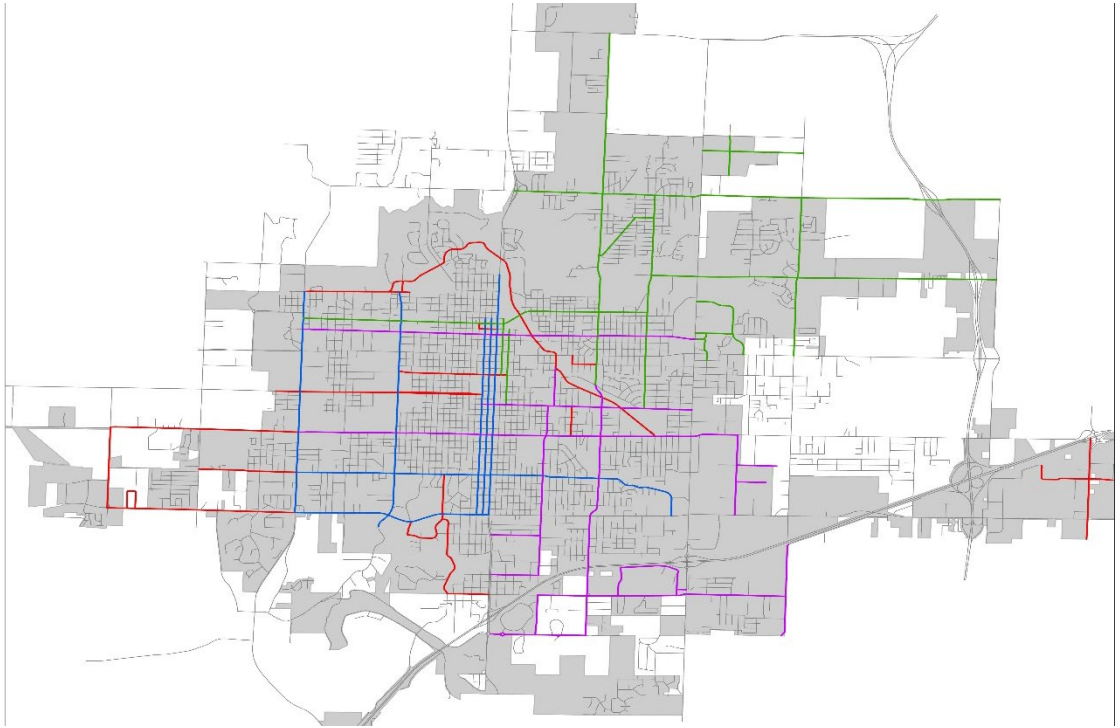
Snow Route Maps

Area 4



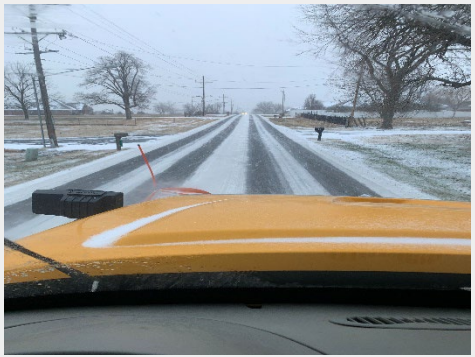
Snow Route Maps

Areas 1-4 Combined



Anti-Ice Pretreatment





- Anti-Ice can be applied to dry road and bridge surfaces up to 12 hours prior to a winter weather event, if conditions allow. Overnight application is preferred.
- Anti-Ice consists of 90% brine and 10% beet juice.
- Anti-Ice forms a barrier on roadway surfaces that limits bonding of ice or snow to that surface.
- Pretreating all 4 routes takes approximately 9 hours. Two trucks are outfitted for Anti-Ice application.
- Anti-Ice is not an option if pavement temperatures are below 15°F or rain/freezing rain occurs prior to a snow or ice event.
- If weather conditions prevent anti-ice application, standard treatment methods for snow and ice control are implemented (salt and brine).

2024-25 Snowfighting Highlights



Four (4) Winter Weather Events

Winter Storm Warnings issued by National Weather Service

- **January 9-10**. Snowfall totals: 3-5 inches. All snow routes cleared within 24 hours.
- **February 18-19**. Snowfall totals: 6-10 inches. All snow routes cleared within 36 hours.

Total Amount of Materials Used during 2024-25 Season

- 101 tons of road salt
- 6,625 gallons of brine
- 2,700 gallons of beet juice

Questions?

