



2023-2024 Integrated Snow Response Plan



2023-2024 Integrated Snow Response Plan

The City of Englewood's Integrated Snow Response Plan is designed to efficiently use crew time and conserve materials and equipment during winter storm events. Staff members from Street Maintenance and Fleet Services are utilized to maximize resources. If needed, staff from Parks, Recreation, Library, and Golf (PRL&G) and the Utilities Department will assist in these efforts. Through proper management, efforts will translate into cost savings for the public and a healthier and safer city in which to live, work, and drive.

Policy Goals

- Safety
- Mobility
- Maximize Resources
- Efficient use of Equipment
- Conserve Materials
- Utilization of Staff

This policy provides consistent service for the citizens of Englewood and the traveling public, while doing so in a cost-effective and efficient manner.

Primary Goal

To provide fiscally responsible service during snow and ice events that supports the safety and mobility of the City's transportation system by removing or displacing snow and ice from all designated priority streets.

Staffing Resources

- 16 Public Works Department Staff Members
 - 8 Streets Equipment Operators
 - 2 Stormwater Equipment Operators
 - 4 Traffic Operations staff members
 - 2 Fleet Technicians staff members
- Day & Night Shifts (12-hour, 4 operators per shift)
 - Shift changes at 7 AM and 7 PM
- Coordination with other Departments for staff support when necessary
 - Parks & Recreation (2 backup operators)
 - Utilities (2 backup operators)
- Coordination with other Jurisdictions
 - CDOT (US 85, US285, Belleview Ave & Federal Blvd.)
 - Littleton
 - Cherry Hills Village

Storm Classifications

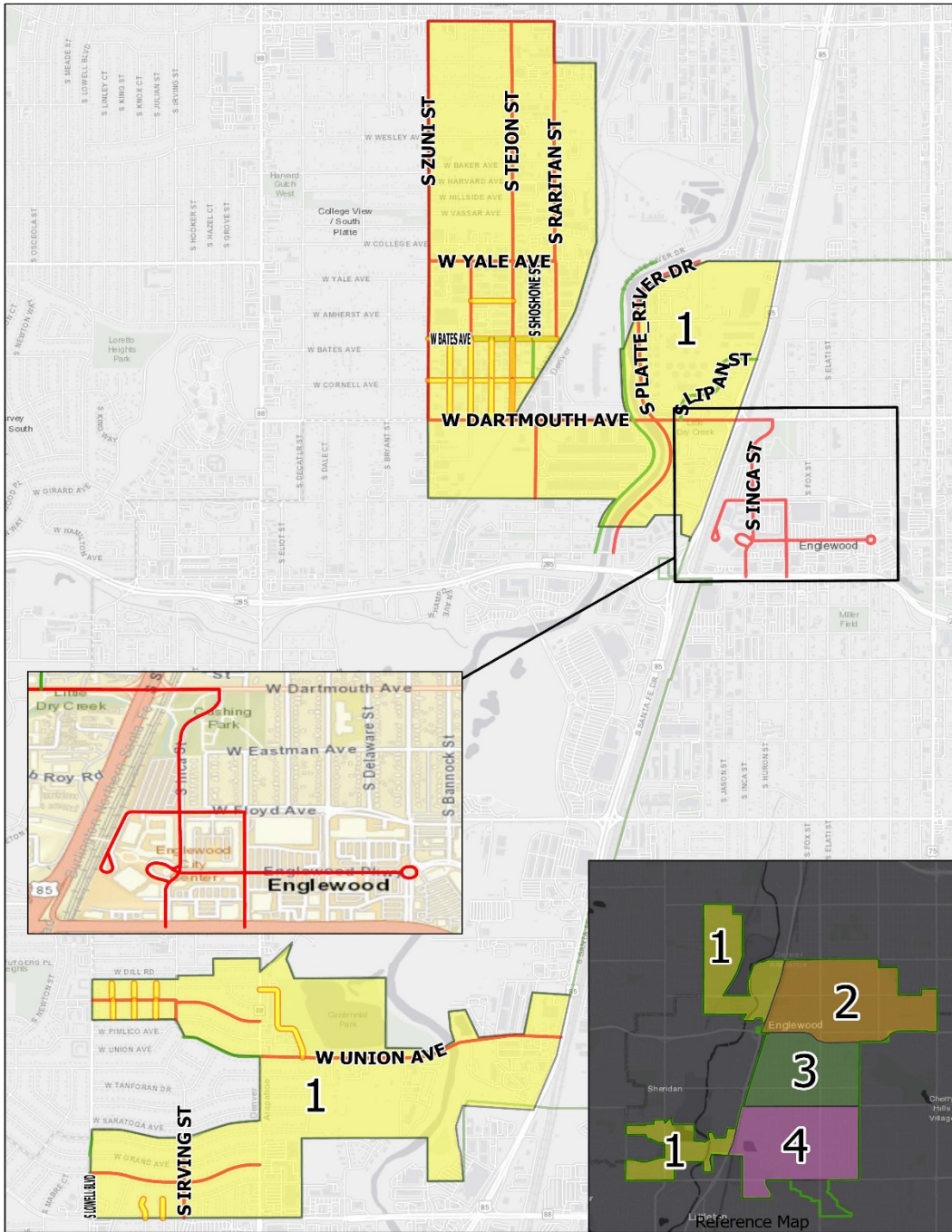
Depending on the storm's severity, there are three (3) levels of response to snow and ice removal. The following classifications are intended to serve as a guide to establishing effective snow removal strategies for different types of winter storms:

- Class #1 Storm – A storm predicted to last less than 12 hours with an anticipated snow amount of 4 inches or less.
- Class #2 Storm – A storm predicted to last for more than 12 hours with an anticipated snow amount of 4-8 inches.
- Class #3 Storm – A storm predicted to be extreme with snow amounts on road surfaces at depths greater than 8 inches, accompanied by strong gusty winds.

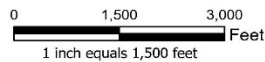
Storm Preparation

- An interdepartmental city team made up of Public Works, Parks (PRLG), and Utilities collaborate to determine the appropriate response for each storm.
- Multiple forecasts are reviewed 5-7 days in advance and discussed before making any decision on impacts to city services and scheduling staff for plowing operations.

Snow Removal Districts

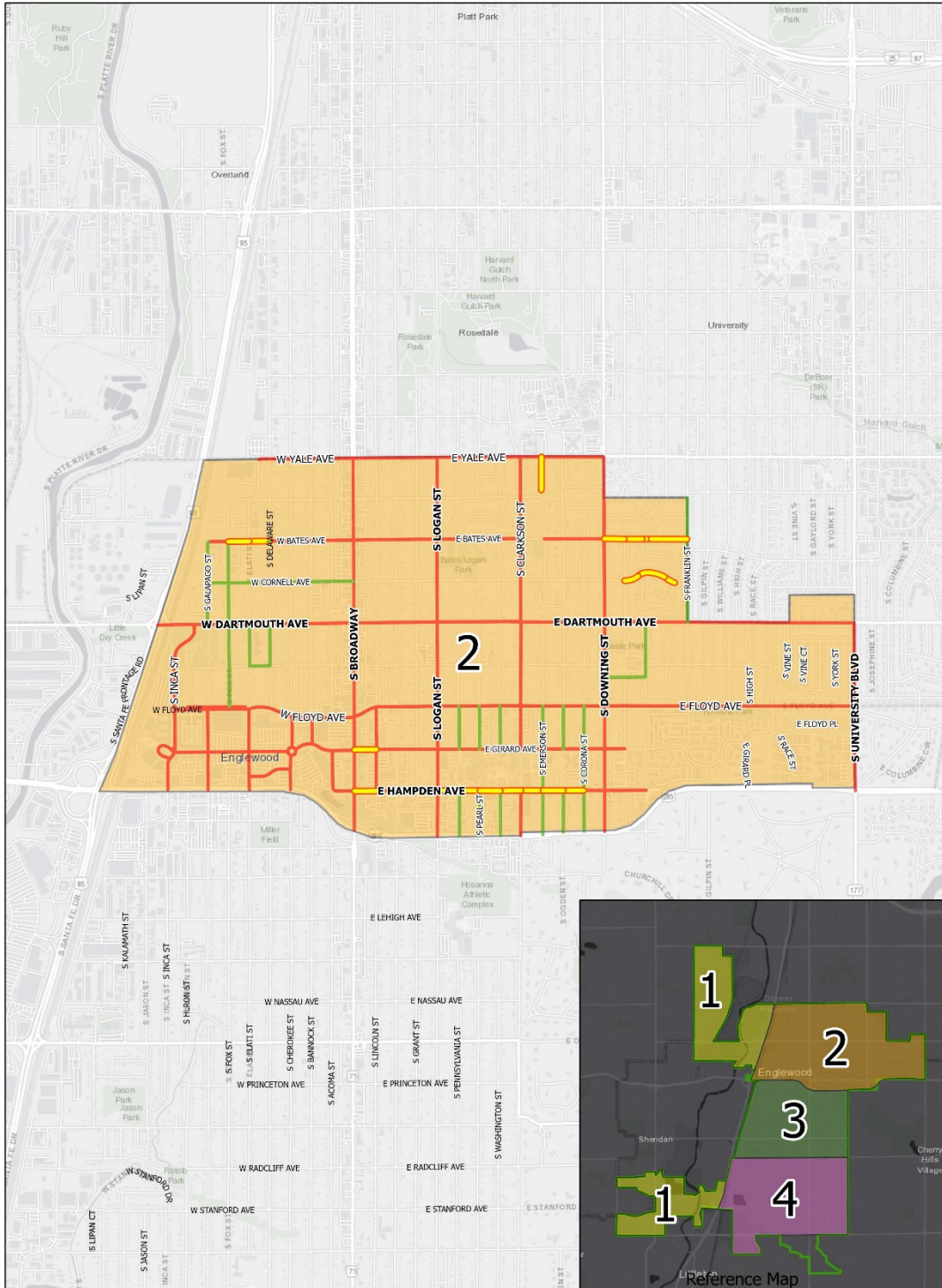


**Snow Removal Routes
Snow District 1**

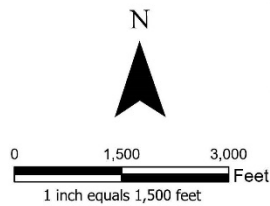


- Snow Route Priority**
- Priority 1
 - Priority 2
 - Known Trouble Areas - Snow and Ice

- Snow Districts**
- 1
 - 2
 - 3
 - 4
 - City Boundary

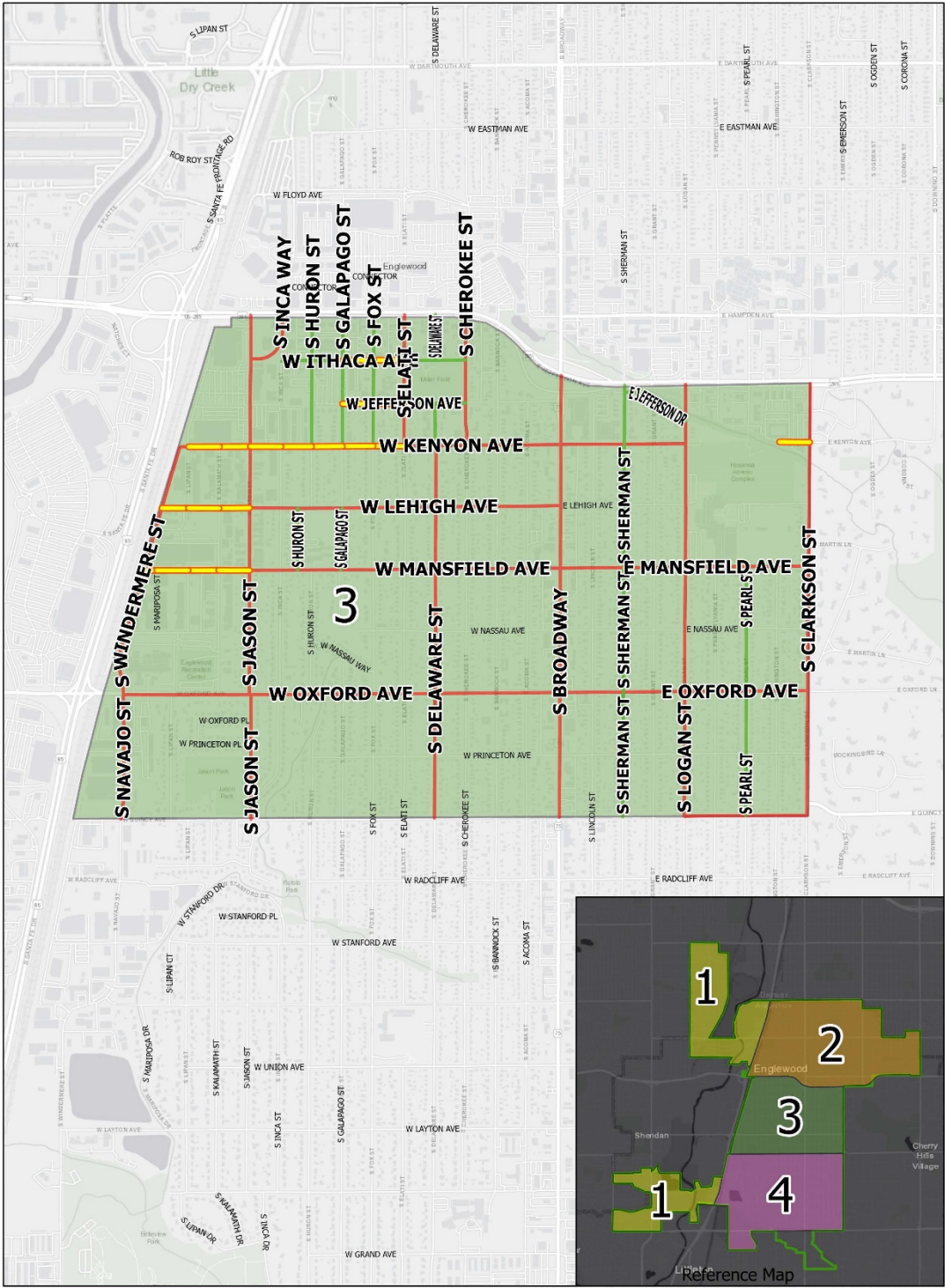


**Snow Removal Routes
Snow District 2**

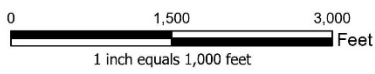


- Snow Route Priority**
- Priority 1
 - Priority 2
 - Known Trouble Areas - Snow and Ice

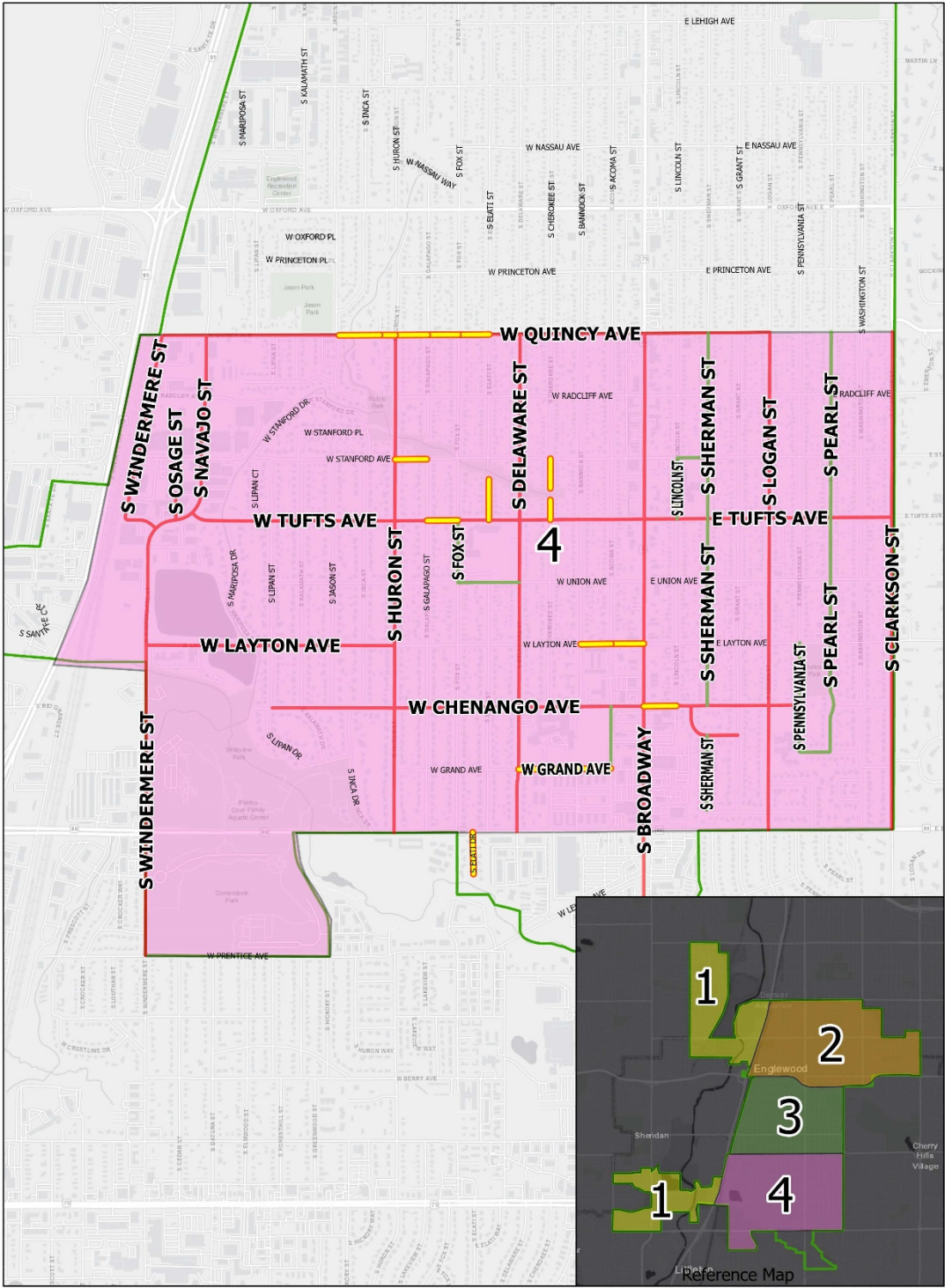
- Snow Districts**
- 1
 - 2
 - 3
 - 4
 - City Boundary



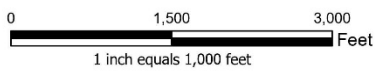
**Snow Removal Routes
Snow District 3**



- | | |
|--|---|
| Snow Route Priority | Snow Districts |
| — Priority 1 | 1 |
| — Priority 2 | 2 |
| — Known Trouble Areas - Snow and Ice | 3 |
| | 4 |
| | City Boundary |



**Snow Removal Routes
Snow District 4**



- Snow Route Priority**
- Priority 1
 - Priority 2
 - Known Trouble Areas - Snow and Ice

- Snow Districts**
- 1
 - 2
 - 3
 - 4
 - City Boundary

Primary Streets

- Main thoroughfares & streets adjacent to schools & hospitals
- Plow full drive lanes during each storm event
- Remove/haul snow and ice from parking lanes along Broadway after the storm has ended
- Only remove/haul snow in other areas under severe conditions

Residential Streets & Alleys

- Will not be plowed or de-iced unless they have steep hills or north faces with known chronic icing problems, or a snow emergency is declared.
- When accumulations are 4 inches or above, the city will “V” plow the centers of all residential streets to allow for one passable lane.
- City policy does not re-plow as it buries vehicles, driveways and/or sidewalks that have already been shoveled out.
- Alleys are not plowed due to lack of area to place plowed snow and potential to damage alley surface.

Ice Removal Operations

- Freeze/thaw cycles create large ice buildup areas especially on the south sides of east-west streets, shady areas and where poor drainage exists.
- Crews are deployed to address ice buildup where it creates hazards to:
 - Motorists
 - Pedestrians
 - Drainage flow blockage

Equipment Resources

- 4 plow trucks operating 24/7 deployed for duration of event
- Minor events don't always require full deployment of all 4 trucks
- Day & Night Shifts (12-hour shifts, 4 operators per shift)
- Coordination with other Departments for support when necessary
 - Parks & Recreation
 - Utilities
- Coordination with other Jurisdictions
 - CDOT (US 85, US285, Belleview Ave & Federal Blvd.)

- Littleton
- Cherry Hills Village

Equipment Upgrades

- 2022-2023 snow season:
 - All four single axle plow dump trucks replaced
- Upgraded to tandem axle dump trucks capable of hauling more granular deicer material (Ice Slicer) along with liquid deicer material on same truck
- Capable of pre-wetting granular material to provide quicker activation
- More precise application of granular material

Materials Used

- Ice Slicer
 - Goal is 100 pounds used per lane mile plowed to maintain efficiency in use
- Liquid deicer
 - Magnesium chloride product
- Both materials are carried on all plow trucks and used as conditions warrant

2022/2023 Season Recap

Number of Events – 29
Number of Deployments – 60
Total Snowfall (inches) – ~48.9
Total Lane Miles Plowed – 9,088

January 2023 Snowiest on Record

- January 2023 was ranked 17th as the coldest and snowiest January in Denver’s history since temperature records started in 1872
- Nearly 80% of the days in January 2023 were colder than normal and nearly half of the days included at least a trace of snow
- Trace of snow 15 out of the 31 days. • The month ended with 13 inches of snow which is 6.5 inches above normal.

Snow Event Case Study – March 27, 2023

- Snow moved into the area Monday March 27th early in the morning. Public Works monitored the forecast and discussed planning for snowplow operations the week prior and again the day before (Sunday).
- Snowplow trucks were loaded and prepared with material on Friday before the storm.
- The interdepartmental city team also collaborated over the weekend to determine the appropriate response for the storm.
- Two Streets Crew Team members arrived early Monday morning before rush hour and began treating bridges and known trouble spots. Remaining team members reported at 7am and immediately deployed with additional resources.
- Public Works Team monitored the snow event throughout the day and crews continued to snowplow / treat the roadways throughout the event.
- Snow operations concluded at approximately 3pm (once the snow stopped and all routes were completed) Total accumulation was between 1-2" depending on location throughout the City.