

SNOW AND ICE CONTROL PLAN



CITY AND COUNTY OF BROOMFIELD

DEPARTMENT OF PUBLIC WORKS

OPERATIONAL

SNOW AND ICE CONTROL PLAN

FOR

**STREETS
PARKS
FACILITIES**

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1. SNOW AND ICE CONTROL PLAN

1.1. Purpose

The purpose of the plan is to provide general guidelines for snow and ice control operations. Actual operations may deviate from the plan in order to respond to actual storm conditions.

1.2. Objectives

Street System: The objective of the program is to provide for the safe and expedient movement of traffic during inclement winter weather conditions. To achieve this objective, the City and County's street system is prioritized into four categories.

- 1.2.1. First priority is major collector streets - A major collector serves multiple subdivisions or areas of the City and County. It collects traffic from minor collector streets. Streets in major business, commercial, and industrial areas are also considered first priority. Street abutting schools are considered first priority on school days.
- 1.2.2. Second priority is minor collector streets - A minor collector serves a single subdivision or area of the City and County. It feeds traffic to major collector streets. Problem areas such as steep hills or sharp curves may also be considered second priority depending on storm conditions.
- 1.2.3. Third priority is the stop sign approaches to first priority streets, not covered in the first two priorities.
- 1.2.4. Residential streets
 - 1.2.4.1. All neighborhood streets, not normally plowed as a first or second priority.

Sidewalk System: The objective of the program is to provide safe and expedient movement of pedestrians and cyclists. Plowing sidewalks is done on a priority system to achieve this.

- 1.2.5. First priority routes are primarily school routes that must be kept open when schools are in session. First priorities are also other high-use sidewalks.
- 1.2.6. Second priority routes are recreational and less used sidewalks. Second priorities are plowed after the storm subsides.

Parking Lots: City and County parking lots are also plowed and de-iced on a priority basis. They are prioritized as follows:

First Priority	Second Priority
Paul Derda Recreation Center	#12 Garden Center
Recreation/Senior Center	Depot Museum
Civic Center Complex	Service Center
Motor Vehicle/Finance	Water Plant
Courts/Police	Wastewater Reclamation
Library/Auditorium	Brunner House
Health & Human Services	Municipal Shops
Detention Center	

Other City & County owned lots will be plowed once the snowstorm subsides. This includes lots that are located at different parks and open space sites.

1.3. Goals

Street System: The goals for the program are:

- 1.3.1. All first priority streets plowed and/or serviced within four hours of the first call.
- 1.3.2. All second priority streets plowed and serviced within four hours from the time a storm subsides.
- 1.3.3. All third priority streets serviced within twelve hours from the time a storm subsides.
- 1.3.4. All neighborhood streets plowed a single lane width wide, as close to the center of the street as possible, within four hours of asset deployment, for Category IV Storms.
- 1.3.5. All neighborhood streets plowed two lane widths wide and deicer applied every eight hours for the duration of Category V storms.
- 1.3.6. Delays in these goals may occur during Category IV and V storms.

Sidewalk System: The goals for the program are:

- 1.3.7. Keep first priority walks and plowed throughout the duration of the storm.
- 1.3.8. Snow shall be removed from all hard surfaced sidewalks and plowed as promptly as reasonably possible and no later than 12:00 noon the day following the time a storm subsides.

Parking Lots: The goal of the program is to have first and second priority areas serviced to provide customers and employees access to the facilities during business hours.

1.4. Annual Crew Meeting

A meeting with the snow crew is held prior to each winter season. The goals, objectives, and operational procedures addressed in this manual are reviewed. The review includes the importance of relations with the public and the need to be sensitive to the public's concerns.

2. STORM CLASSIFICATION AND RESPONSE

2.1. Terminology

The names assigned to the storm categories depicted below are consistent with those used in the region to describe the severity of storms. They will become especially important at the time the City and County of Broomfield decides to implement a snow route ordinance. The no parking regulations on designated snow routes become effective “when a storm is categorized as a snowstorm condition or a severe snowstorm condition.”

2.2. Storm Categories and Response

Storm categories are shown below. The description should be considered general in nature. Actual storm conditions will ultimately determine the storm's category and response.

Storm Category	Description	Response
I	Minor Snow Storm Condition. Storms resulting in isolated icy spots.	Some de-icing as necessary.
II	Light Snow Storm Condition. Snowfall of less than four (4) inches of accumulation in the street. Majority of storms are in this category. Melting usually occurs within a twenty-four (24) hour period.	First, second and third priority streets are treated.
III	Snow Storm Condition. Snowfall in excess of four (4) inches of accumulation in the street, or a Category II storm followed by more than seventy-two (72) hours of temperatures of twenty (20) degrees or colder causing snow packed roads and icy conditions.	In addition to priority routes, residential streets are plowed one-lane wide down the center of the street with a single pass when residential streets reach four (4) inches of accumulation in the street. Cul-de-sacs are plowed, pushing snow from the outside edge to the middle.
IV	Severe Snow Storm Condition. Dangerous storms that produce 8" to 11" of snow accumulation in the street.	In addition to priority routes, residential streets are plowed one-lane wide down the center of the street with a single pass when residential streets reach four (4) inches of accumulation in the street . Cul-de-sacs are plowed, pushing snow from the outside edge to the middle.
V	High Accumulation Snow Storm. Dangerous storms that produce 12" or more of snow accumulation in the street.	In addition to priority routes, residential streets are plowed every 8 hours two-lanes wide down the center of the street. Cul-de-sacs are plowed two-lanes wide pushing snow from the outside edge to the middle. If necessary, priority plows will continue to make passes on residential streets post-storm to clear as much ice as possible and apply additional deicing material.

3. GENERAL POLICIES

3.1. Snow Routes

The City and County’s snow and ice control equipment is assigned to specific routes on the priority system. The priority routes are listed and shown on maps elsewhere in this manual.

The manual refers to the priorities within the city and county limits. From time to time, the city and county enters into service agreements with other entities in which routes are “traded” or “contracted” out.

3.2. Plowing and Alternate De-icers

“Ice Slicer”, a granular de-icing material and “Apex”, a liquid de-icer that works at lower temperatures, are used as alternatives to salt and sand applications.

Skid control is accomplished by applying de-icing materials to the streets. First and second priority streets are “spot” treated, as needed, to achieve a safe driving condition. A solid 50-75 foot street section is treated at stop signs and 75-100 foot street section at traffic signal approaches.

The snowplow operator decides when to start plowing, usually when the snow starts to accumulate on the street. During the storm first priority streets are plowed to ensure two lanes of traffic are kept open. After the storm subsides, first priority streets are cleared from edge to edge. The streets listed below will be plowed in the direction indicated at the point when normal plowing to the side causes driveway blockage.

Street	From	To	Direction
Main Street	10 th Avenue	1 st Avenue	East
W. 11 th Avenue	Laurel Street	Hemlock Way	North
W. 2nd Ave.	Main St	Daphne Way	North
Arlington Ave.	Utica St.	Forest View St.	North

Other streets may be plowed in a specific direction depending on storm conditions. Second priority streets are plowed to a width of two full lanes. Residential streets are plowed one pass down the center of the streets for storms with accumulation between 4- and 11-inches. This is done to avoid blocking driveways and covering residential sidewalks. For storms that produce 12-inches or more residential streets will be plowed two-lanes wide or as wide as possible down the center of the street every eight hours for the duration of the storm.

3.3. Bare Pavement Policy

When conditions are favorable, streets are to be plowed to the bare pavement. However, this isn’t feasible during most of the winter due to the need to service and continually plow the same road section repeatedly to reach pavement. Also, the rubber cutting blades on City and County plows cannot cut through packed snow and ice. Rubber blades are used in lieu of steel blades because of the numerous manholes and valve boxes located in City and County streets, and to protect pavement markings. During severe winter storms with heavy snow accumulation and prolonged freezing temperatures plows will be outfitted with steel blades to mitigate ice buildup.

3.4. Street Closures

The decision to close a street is to be made by the supervisor on duty in cooperation with the Police Department. It is the responsibility of the Street Division to set the necessary barricades and to inform the local emergency services of these closures.

3.5. Reporting Accidents

During regular working hours, accidents or stalled vehicles will be reported to the Police Department through one of the City and County's base stations. After regular working hours the contact will be made by radio directly to the Police Department. If a City and County vehicle is involved in an accident, the Police Department and the supervisor on duty will be contacted immediately.

3.6. Service Outside of Jurisdiction

Snow crews will NOT respond to service requests outside of the Broomfield City and County limits. Service will not be provided to private areas or to streets that are not part of Broomfield City. Exceptions include agreements by the City and County to service an area outside the city and county limits, or a request to assist the Broomfield Police Department with an accident on a state highway in Broomfield.

3.7. Towing or Moving Private Property

Generally, towing or moving privately owned vehicles or other privately owned property obstructing public right-of-ways by City and County personnel is not allowed. The Police Department is to be notified if an obstruction is a potential hazard impeding traffic flow or is affecting maintenance operations. Assistance such as hand pushing, placing granular de-icer for traction, or providing towing information is allowed. A detailed towing policy is included in the Addendum.

3.8. Parks and Facilities Snow and Ice Control Policy

The sidewalks and parking lots of City and County facilities are cleared by the Recreation Services Parks Maintenance Division. The snow will be controlled at the different facilities on a "priority" basis. Plowing of snow will be done when there is a minimum of one-inch accumulation on paved surfaces. The sidewalks and entrances leading to all facilities will be cleared during any storm. After snow has been controlled in the parking lots, the Park Maintenance Division will apply a granular deicer as needed. The Parks Maintenance Division will also apply "Ice-Melt" to the sidewalks as required.

First Priority	Second Priority
Paul Derda Recreation Center	#12 Garden Center
Recreation/Senior Center	Depot Museum
Civic Center Complex	Service Center
Motor Vehicle/Finance	Water Plant
Courts/Police	Wastewater Reclamation
Library/Auditorium	Brunner House
Health & Human Services	Municipal Shops
Detention Center	

After the sidewalks and entrances surrounding the above mentioned facilities have been cleared initially, it will be the responsibility of the Facility Operations Division

staff of each facility to keep the sidewalks and all entrances free from ice and properly maintained.

In the event of an extended storm, snow and ice control will be done at different times throughout the day. Contact the Facilities Help Desk for special requests and they will be forwarded it to the Parks Maintenance Division Superintendent.

Non-Working Hours Procedures: During non-working hours the Park Maintenance Division will be responsible for clearing the parking lot and sidewalks for the Police Detention Center and the Police/Court building until 5:00 P.M. when the Facility Operations Division staff will take over the responsibilities. Police and Detention Officers will spot, check and maintain their areas after the Facility Operations Division staff shift is over and until the Parks Maintenance Division staff shift begins.

3.9. Exceptions to Policies

The above policies can only be superseded by directions from the City Manager, the Director of Public Works, or their designees.

4. RESPONSE PROCEDURES

4.1. Storm Categories I and II

Advisory During Regular Working Hours: Snow crews are put on alert when the storm approaches. Trucks and equipment are made ready to respond by maintenance checks, fueling, and loading with granular de-icer. The goal is to have the equipment on assigned routes at the time storm conditions require the streets to be serviced.

Advisory For Non Working Hours: When a storm is predicted to occur during off-duty hours, one of the two primary snow crews is put on call for the first shift. The second crew is notified by the first crew that they have been activated and that the second crew should anticipate being called in to work 12 hours after the storm commences. The goal is to have the initial crew arrive within half an hour after being notified. Allowing time for trucks to warm up and filling with de-icer, the equipment will be on their routes within thirty minutes of the crew's arrival.

4.2. Storm Category III

When a storm is forecast, contractors for residential streets will be placed on standby by the Street Operations Pavement Manager and the City Manager's office will be notified. Street Services staff will monitor accumulation on residential streets during the storm. When four (4) inches of accumulation is reached, contractors will be deployed to plow residential streets. All other procedures for category I and II storms still apply.

4.3. Storm Category IV

Advisory: When advised that a potentially severe storm system is approaching, all snow crew personnel are put on call, the Department and Division heads are notified, and the City Manager is advised of the impending storm. The City and County contractors are advised of the situation and placed on standby. A meeting will be held with the contractors and they will receive the procedures under which they will operate. These procedures are addressed in Section 6 of this manual.

Start of a Storm: If weather predicting resources advise that a dangerous snow storm is imminent, the storm will be treated as. Priority route plows will deploy to the streets ahead of the snow storm, and contractors for residential streets will be placed on standby. Street Services Staff will monitor accumulation on residential streets during the storm. When four (4) inches of accumulation is reached, contractors will be

deployed to plow residential streets (more detailed procedures for the contractor are addressed in Section 6 of this document.)

Public Information: The public will be kept informed of the situation through normal media outlets and by announcements on cable television. Media releases will be coordinated through the City and County's Public Information Officer.

4.4. Storm Category V

Advisory: When advised that a potentially dangerous storm system is approaching, all snow crew personnel are put on call, the Department and Division heads are notified, and the City Manager is advised of the impending storm. The City and County contractors are advised of the situation and placed on standby. A meeting will be held with the contractors and they will receive the procedures under which they will operate. These procedures are addressed in Section 6 of this manual.

Start of Storm: If weather predicting resources advise that a severe snow storm is imminent, the storm will be treated as such as soon as snow starts to fall, and all streets in the City/County of Broomfield will become first priority streets. Contractual assistance will be brought in with city/county crews and begin to perform snow and ice control as soon as snow begins to fall (more detailed procedures for the contractor are addressed in Section 6 of this document.)

Additional staff from other divisions of Public Works will also be brought in to work with Street Operations crews and operate heavy equipment not normally used in category I - III storms. The Superintendent of Street Operations will request an activation of the City and County of Broomfield Emergency Operations Center (EOC), and notify the director of Public Works, the Director of Public Works will then brief the City/County Manager. Street Operations will staff the EOC with the Superintendent of Street Operations and the Pavement Manager for the duration of snow and ice control efforts. At the time of the EOC activation, procedures for emergency snow and ice ...

Public Information: The public will be kept informed of the situation through normal media outlets and by announcements on cable television. Media releases will be coordinated through the City and County's Public Information Officer.

4.5. Special Responses

Schools: Due to before and after school activities streets around schools may require special services during some storms.

Other Areas: Some of the following residential areas may also require special services, especially after a storm that has drifting snow:

- Lac Amora Third Filing - Streets with open field to the north
- Hazel Place in Westlake
- North facing cul-de-sacs
- Hills and curves
- Area north of W. 144th Avenue
- Intersection of Ash Street and Aberdeen Drive
- 136th Avenue Frontage Road

Special services will be provided at the discretion of the supervisor on duty.

5. CONTRACTOR OPERATIONAL PROCEDURES

5.1. General

The contractor will mobilize upon direction from the City and County. The contractor's equipment will be assigned to designated streets or areas by the pavement manager.

5.2. Employee Conduct

The contractor and their employees, as representatives of the City and County, shall at all times treat residents and the public with respect and courtesy. Any incident involving the contractor and the public must be reported to the City and County supervisor immediately.

5.3. Supervision

The contractor will have a supervisor on duty at all times. It is the contractor's responsibility to stay in contact with the City and County supervisor and to keep them informed of equipment progress.

5.4. Plowing Procedures

The contractor will follow the same plowing procedures as City and County crews (reference [Section 4. Response Procedures](#))

- 5.4.1. During the storm, first and second priority streets are plowed so that traffic lanes are kept open.
- 5.4.2. Once the storm subsides, first priority streets are plowed curb-to-curb in areas where such plowing will not block driveways or cover sidewalks. Second priority streets are cleared to a width of two traffic lanes.
- 5.4.3. Residential streets will be plowed in accordance with the [Storm Categories and Response](#) outlined in 2.2 above, without covering sidewalks. **Care must be taken to ensure sidewalks are not covered.** Should a sidewalk get covered, take the time to uncover the area immediately. Any snow that is plowed off of the street into a driveway should be removed immediately.
- 5.4.4. Snow in cul-de-sacs will be moved from the edges and plowed towards the center of the street.

5.5. Coordination

Every effort will be made to coordinate the City and County and the contractor's operations. All contractual equipment will be equipped with Auto Vehicle Location and will be satellite tracked. The location of all contractual plows will be monitored in real time around the clock for the duration of the contractor's service.

5.6. Demobilization

The contractor will be demobilized as areas are completed and his services are no longer required. The City and County supervisor on duty is responsible for coordinating the demobilization.

5.7. Equipment Accounting

The Pavement Manager will issue an Auto Vehicle Location (AVL) unit to the contractor for each piece of equipment mobilized. The Pavement Manager will record the time

each unit started work, the time each unit ended work, and the cost per hour of each unit.

6. MANPOWER AND EQUIPMENT

6.1. City and County Manpower

Storm Categories I, II, and III: Street Division personnel respond to storms in these categories. They are divided into two crews to provide 24-hour coverage.

Storm Category IV and V: Personnel from the Street Division, Utility Division, and Park Maintenance Division are available under this storm category.

Administrative Personnel: Key administrative positions are as follows:

Street and Park Foremen
Pavement Manager and Park Supervisors
Street and Park Operations Superintendent
Deputy Director of Public Works
Director of Public Works

6.2. City and County Equipment

City and County equipment available for use in snow and ice control operations are listed in the Addendum.

6.3. Contractual Equipment

Contractual equipment will be obtained through the City and County's designated contractors.