

CITY AND COUNTY OF BROOMFIELD

# Operational Snow and Ice Control Plan

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For Streets, Parks, and Facilities



DEPARTMENT OF PUBLIC WORKS

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1.0 SNOW AND ICE CONTROL PLAN

1.1 Purpose

The purpose of the program 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

A. 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.

I. 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.

II. 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.

III. Third priority is the stop sign approaches not covered in the first two priorities.

IV. Residential streets

All neighborhood streets not normally plowed as a first or second priority.

B. 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.

I. 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.

II. Second priority routes are recreational and less used sidewalks. Second priorities are plowed after the storm subsides.

C. Parking Lots

City and county parking lots are also plowed and de-iced on a priority basis.



1.3 Goals

A. Street System

The goals for the program are:

- I. All first priority streets plowed and/or serviced within four hours of the first call.
- II. All second priority streets plowed and serviced within four hours from the time a storm subsides.
- III. All third priority streets serviced within twelve hours from the time a storm subsides.
- IV. All neighborhood streets plowed within 12 hours of subsidence, of category III Storms.

Delays in these goals may occur during category IV storms.

B. Sidewalk System

The goals for the program are:

- I. Keep first priority walks plowed throughout the duration of the storm.
- II. 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.

C. Parking Lots

The goals of the program are:

- I. To have first, second, and third priority areas serviced to provide customers and employees access to the facilities during business hours.
- II. Other city and county owned lots will be plowed once the snowstorm subsides. This includes lots that are located at different park and open space sites.

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.



2.0 STORM CLASSIFICATION

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 snow storm condition or a severe snow storm condition.”

2.2 Storm Category

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

Storm Category	Description
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
III. Snow Storm Condition	Snowfall in excess of four inches (4) of accumulation in the street and/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. Three or four storms a year provide this much snow, the deepest of which occurs in the spring. Windy conditions occasionally complicate operations by drifting snow
IV. Severe Snow Storm Condition	Dangerous storm producing eight (8) inches of snow accumulation in the street and high winds. This type of storm occurs about once every three years. Special procedures discussed in this manual come into effect.





**3.0 SERVICE DESCRIPTION**

**3.1 Priority System**

The city and county street system is prioritized for snow and ice control service based on street category (major collector, minor collector, etc.) and street location or characteristic (school zone, hill, etc.).

The service each priority generally receives during the storm categories is shown in the charts below. Actual weather conditions determine actual service performed.

**3.2 Priority Serviced**

Storm Category	Street Priority			Residential
	1	2	3	
I	X	X	X	
II	X	X	X	
III	X	X	X	X*
IV	X	X	X	X*

\*Residential streets completed within 12 hours of storm subsidence

**3.3 Type of Service Performed**

Storm Category	Service Description	
	De-Icing	Plowing
I	X	
II	X	X
III	X	X
IV	X	X

**4.0 GENERAL POLICIES**

**4.1 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.





4.2 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 an alternative 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 75-100 foot street section is treated at stop sign and 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 to the direction indicated at the point when normal plowing to the side causes driveway blockage.

Street	From	To	Direction
Main Street	10 <sup>th</sup> Avenue	1 <sup>st</sup> Avenue	East
W. 11 <sup>th</sup> Avenue	Laurel Street	Hemlock Way	North
Arlington Avenue	Forest View	Mtn. View School	North

Other streets may be plowed to 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. This is done to avoid blocking driveways and/or covering residential sidewalks.

4.3 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, there 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.

4.4 Street Closures

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





4.5 Reporting Accidents

During regular working hours, accidents or stalled vehicles will be reported to the Broomfield Police Department with a city and county base station. After regular working hours the contact will be made by radio directly to the Broomfield Police Department. If a city and county fleet vehicle is involved in an accident, the Broomfield Police Department and the supervisor on duty will be contacted immediately.

4.6 Service Outside of Jurisdiction

Snow crews will NOT respond to service request outside of the city and county limits of Broomfield. Service will not be provided to private areas or to streets that are not part of the City and County of Broomfield’s street system. The exception to this rule is if the city and county has entered into an agreement to service an area outside the city and county limits, or if the Street Services Division is requested to assist the Broomfield Police Department with an accident on a state highway in Broomfield.

4.7 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 Broomfield 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.

4.8 Parks and Facilities Snow and Ice Control Policy

The sidewalks and parking lots of city and county facilities are cleared by the 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 (1) inch of 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 Parks Maintenance Division will apply a granular de-icer as needed. The Parks Maintenance Division will also apply ice-melt to the sidewalks as required.

After the sidewalks and entrances surrounding the facilities have been initially cleared, it will be the responsibility of the Facility Maintenance Division staff of each individual 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 Facility Maintenance Division for special requests.



PARKING LOTS		
First Priority	Second Priority	Third Priority
Paul Derda Rec Center	Service Center	Depot-Zang Spur
Community/Senior Center	#12 Garden Center	4 <sup>th</sup> & Garnet
One DesCombes	Mtn View Elementary	Wildgrass-Park 3
One DesCombes (west lot)	Comm Park Ballfield	Quail Creek
Motor Vehicle	Comm Park Skate Park	Highland Park
Courts/Police	Comm Park Tennis Cts	Country Estates
Library/Auditorium	The Bay	Columbine South
#6 Garden Center	Northmoor Shelter	Columbine East
Recycle Center	BF Commons North Lot	Outlook Park
Detention Center (contracted)	BF Commons West Lot	Broadlands West
	BF Commons East Lot	Tom Frost Lot
	Commons Cemetery	Blue Star Park
		BF Industrial Park
		Anthem 21
		Anthem Community Park
		East Park (contracted)

HAND SHOVEL AREAS	
Building	Areas
Public Works Shop Areas	Front Entrances, Tent Doors, Back Entrances
City Center Entrances	Walks and Traffic Islands in Parking Lots
Police Station and Courts Entrances	Walks and Staircases
Community/Senior Center	All Walks and Meals on Wheels Area
Library/Auditorium	All Walks and Door Entrances
Garden Center	Building 6 and Building 12
Brunner House	Sidewalk & Handicap Parking on West Side
Depot Museum	Porch and Walks around Buildings



A. Non-Working Hours Procedures

During non-working hours, the Park Maintenance Division will be responsible for clearing the parking lot and sidewalks for the Detention Center and the Police/Courts building until 5:00 p.m. when the Facility Maintenance Division staff will take over the responsibilities. Police and Detention officers will spot check and maintain their areas after the Facility Maintenance Division staff shift is over and until the Parks Maintenance Division staff shift begins.

4.9 Exception to Policies

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

5.0 **REPONSE PROCEDURES**

5.1 Storm Categories I and II

A. Advisory During Regular Working Hours

Snow crews are put on alert when the storm approaches. Trucks and equipment area 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.

B. 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 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 for a 12 hour shift after the storm commences. The goal is to have the initial crew arrive within half an hour after being notified. Allowing time for truck warm-up and filling with de-icer, the equipment will be on their routs within 30 minutes of the crew's arrival.

5.2 Storm Category III

When a storm is forecast, additional snow crews will be placed on standby by the Street Services Pavement Management Systems Administrator and the City Manager's office will be notified. Crews will monitor accumulation on residential streets during the storm. When four (4) inches of accumulation is reached, additional snow crews will be deployed to plow residential streets. All other procedures for Category 1 and II storms still apply.

5.3 Storm Category IV

A. Advisory

When advised that a potentially dangerous storm system is approaching, all snow crew personnel are put on call, department and division heads are notified, and the city manager is advised of the impending storm.





B. Start of Storm

If weather predicting resources advise that a severe storm is imminent, the storm will be treated as such as soon as snow starts to fall and all streets in the city and county of Broomfield will become first priority streets. Assistance will be brought in and begin to perform snow and ice control as soon as snow begins to fall.

Additional staff from other divisions of Public Works will also be brought in to work with Street Services crews and operate heavy equipment not normally used in Category I-III storms. The superintendent of Street Services will request an activation of the City and County of Broomfield Emergency Operations Center (EOC), and notify the director of Public Works who will then brief the City and County Manager. Street Services will staff the EOC with the superintendent of Street Services and the Pavement Management Systems Administrator for the duration of the snow and ice control efforts. At the time of the EOC activation, procedures for emergency snow and ice control efforts will follow emergency management guidelines set forth in the City and County of Broomfield Emergency Operations Plan.

C. Public Information

The public will kept informed of the situation through normal media outlets and by announcements on cable television. Media releases will be coordinated with the City and County of Broomfield’s Communications and Governmental Affairs Office.

5.4 Special Responses

A. Broomfield Heights Middle School

Due to its unique location, Broomfield Heights Middle School may require special services during some storms. Early servicing is necessary especially on Daphne Street at the Community Ditch crossing. Contractual snow removal may be necessary after heavier snowfall. These services will be implemented at the discretion of the supervisor on duty.

B. Other Areas

Other school areas may occasionally require special services. 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.



6.0 CONTRACTOR OPERATIONAL PROCEDURES

6.1 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 Management Systems Administrator.

6.2 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.

6.3 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. They are also responsible for employee conduct.

6.4 Plowing Procedures

The contractor will follow the same plowing procedures as city and county crews (reference Section 4.2)

During the storm, first and second priority streets are plowed so that traffic lanes are kept open.

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 (2) traffic lanes.

Residential streets will be plowed as wide as possible without covering sidewalks. Care must be taken to ensure driveways are not unduly blocked and sidewalks are not covered. Should a sidewalk get covered by accident, uncover the area immediately. Any driveways that are blocked will be plowed open as soon as possible.

Snow in cul-de-sacs will be plowed from outside edge to center.

6.5 Coordination

Every effort will be made to coordinate city and county operations with contractor operations. A city and county employee will be assigned to each area to oversee and coordinate the work effort.

6.6 Demobilization

The contractor will be demobilized as areas are completed and his services are no longer required. The Pavement Management Systems Administrator on duty is responsible for coordinating the demobilization.



### 6.7 Equipment Accounting

The contractor is to provide the Pavement Management Systems Administrator with a list of the equipment mobilized, the time each unit started work, the time each unit ended work, and the cost per hour of each unit including operator cost.

## 7.0 MANPOWER AND EQUIPMENT

### 7.1 City and County Manpower

#### A. 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.

#### B. Storm Category IV

Personnel from the Public Works Department are available under this storm category.

#### C. Administrative Personnel

Key administrative positions are as follows:

- Street and Park Division Foremen
- Pavement Manager and Park Supervisors
- Street and Park Division Superintendents
- Director of Public Works

### 7.2 City and County Equipment

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

### 7.3 Contractual Equipment

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



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