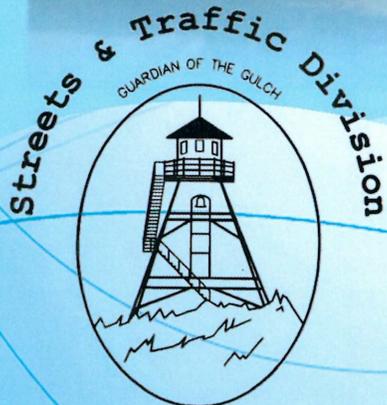
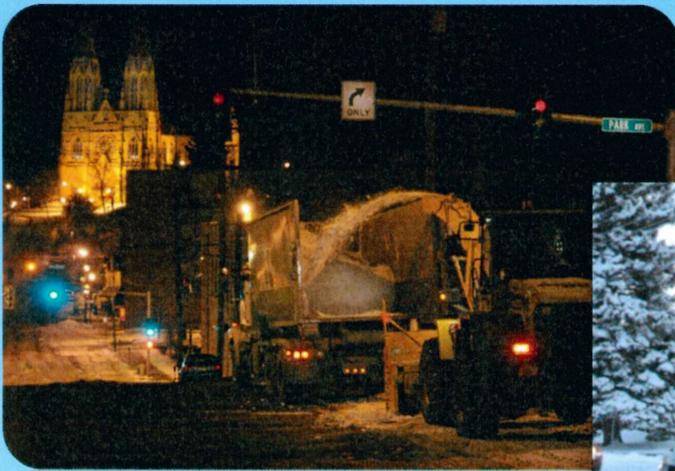




Snow & Ice Control Plan



City of Helena



FORWARD

The purpose of the Snow and Ice Control Plan is two-fold: (1) to provide the general public and City officials with an insight into the complexity of snow and ice control operations; and (2) to summarize policies and procedures to be followed by City personnel.

Snow and ice control is often a matter of choosing between two evils. For example, plowing snow to the side of the street may clean the center but it often covers sidewalks and blocks driveways. Plowing to a windrow down the center of the street may alleviate these problems, however, may create others by impeding left turns, restricting traffic flow and it can put pedestrians at risk. The purpose of this plan is to set forth the issues and to establish policy and procedural guidelines.

This plan addresses four different aspects of snow & ice control: Level of Service; Priorities; Operational Procedures; and Special Requests.

Level of Service is controlled by balancing the resources committed to snow and ice control versus the public's willingness to pay for this service.

Setting Priorities recognizes that all streets cannot be cleared simultaneously.

Operational Procedures are aimed at implementing the plan as effectively and efficiently as possible.

Special Requests for services are an inherent part of snow and ice control efforts and must be addressed.

I. LEVEL OF SERVICE

The range of service possibilities vary from a “curb to curb bare asphalt” removal of snow on every street, alley, sidewalk and pedestrian crosswalk in the city to a policy of “do nothing” and wait for Chinook winds to melt it. The first extreme is not within the realm of practicality and the second is unacceptable to the residents of Helena. A snow and ice control program includes varying levels of service for City streets, depending on a variety of factors such as traffic volumes, emergency access, public safety and available man power and equipment.

The primary objective of the Street Division is to provide for the safe and orderly movement of traffic throughout the city during all types of weather, including severe winter storms. Although City streets, including major arterials, may be temporarily closed during extremely severe conditions, the Street Division will use available resources to prevent closing or to keep the duration of closures to a minimum. Although the Street Division tries to keep all lanes of traffic moving during extreme conditions, travel may be limited to one lane of vehicular traffic in each direction.

Sidewalks, driveways and alleys are also concerns. Due to limitations on manpower and equipment and due to the large area of emergency snow routes and arterial routes to be handled the following limitations must be placed on services rendered:

1. The Street Division cannot clear sidewalks nor attempt to “dig out” private driveways.
2. The Street Division cannot sand or plow parking lots or on street parking spaces.
3. Due to the oversize width of our equipment and the fact that there is nowhere to place the plowed snow, the Street Division cannot plow or sand alleys.

Recognizing that it is not possible for the Division to remove all of the snow from the streets concurrently, the level of service to be provided is summarized below:

The Street Division shall use available resources to keep public streets in the City open for travel during all but the most severe weather conditions.

When extreme weather conditions severely restrict or halt traffic movement, the Street Division will operate continuously, 24 hours per day, seven days a week, plowing and sanding streets in order of priority as provided for in this plan.

These operations will continue although the level of effort may decline as progress is made on the priority list until traffic movement is restored to a safe and acceptable level throughout the city.

In order to assist the efforts of the Street Division, by ordinance, property owners or building occupants are prohibited from placing snow and ice on public streets and alleys. Driveways, alleys, and parking areas in any area shall be cleared so that snow and ice from such areas are not placed in the public streets.

During conditions that exceed the Street Division's capability of maintenance, private contractors will be contacted for equipment and manpower.

Contractors' equipment used would consist mainly of motor patrols used for snow plowing operations. However, under extreme snowfall conditions, trucks and loaders could assist City operations in snow removal. In situations of extremely heavy snowfall a coordinated effort between the contractors and city personnel would be necessary. This could be done with the use of our existing emergency snow route maps and normal operating procedure using the contractor's equipment to plow and the city equipment to follow and maintain. This effort could continue for snow removal operations if deemed necessary.

II. PRIORITIES

The City of Helena receives an annual average snow fall of 38.1 inches. Snowfall is often accompanied by winds and sub-zero temperatures. This plan recognizes that it is not possible to remove all of the snow simultaneously from all streets. Factors affecting snow and ice control operations include conditions prior to the storm, snowfall rate and accumulation, moisture content, temperature change before, after and during the storm, time of day, wind velocity, the duration of the storm, manpower and equipment availability. Priorities must be established so that major arterials and other collector streets are cleared first in order that traffic may continue to move safely and efficiently on the City's street network. This plan establishes and defines the following priorities: (see Appendix I for maps).

Priority One: Emergency Snow Routes

Streets designated in ordinance as emergency snow routes and signed as such within the street right-of-way.

The purpose of this designation and signage is to alert the public that these streets are to be kept clear of parked vehicles upon declaration of a snow emergency, which may interfere with snow and ice control operations.

Upon declaration of a snow emergency by the City Manager or his designated representative, vehicles left unattended on the emergency snow route system shall be removed at the owner's expense. (Emergency Snow Route Ordinance 7-8-6)

Emergency snow routes are given priority one designation as they provide a network system of access for the public to reach prime destinations within the City of Helena.

Priority Two: Major Arterials/Selected Collector Streets

Although not specifically delineated in ordinance, priority two streets are those streets interconnecting priority one streets and completing the major street network with particular attention to schools, hospitals and business areas.

Major street arterials/selected collector streets are given priority two designation as they serve to complete the major street network within the city.

Priority Three – Residential/Special Requests:

Once the storm is over and all the Priority 1's and 2's are plowed and sanded, work will begin on plowing and sanding the residential streets. It will take a minimum of two days or more after the storm has ended to plow the residential streets depending upon the conditions, manpower and equipment available.

Special requests will be responded to once the need is verified by the Street Division. The response will depend on resource availability (manpower, equipment, etc.) and the back log of requests.

III. OPERATIONAL PROCEDURES

For the purpose of snow and ice control, the City is divided into eight areas: Downtown, Upper East, Lower East, Upper West, Lower West, Dogleg, Northside and Highway 12. The maps in Appendix I identify these areas.

The Street Division Supervisor will respond to advance notice of an approaching storm by taking the following steps:

- 1) Ordering plows and/or sanders to be installed on trucks;
- 2) Closely monitoring weather developments;
- 3) Scheduling the crew for around the clock response;

- 4) Alerting crews that they may be called back to work at any time due to possible weather conditions.

When snowfall or freezing rain is possible, the Street Division Supervisor will direct crews to begin operations when, in the Supervisors' opinion, one or more of the following conditions exist:

- 1) Icing of streets is occurring or likely to occur, creating a hazard to traffic;
- 2) Snowfall accumulation, which exceeds two inches (2") on emergency snow routes, is imminent or occurring;
- 3) Snowfall has accumulated on non-priority streets in amounts sufficient to halt or block traffic. This typically means an accumulation exceeding five inches (5") on the streets.

For each of the three conditions described above, the following practices will be used:

Condition 1: Slick or icy spots will be sanded to reduce the hazard or danger to traffic. Particular attention will be given to areas near stop signs, traffic signals and hills, especially those on or adjacent to streets on the emergency snow route system.

Condition 2: When snow depth exceeds two inches, snow plowing crews will commence plowing on emergency snow routes. The goal is to keep these streets open to travel so that emergency service vehicles can reach all parts of the city with minimal delay. Snow will be plowed to the curb line on emergency snow routes.

Condition 3: Plowing of residential streets will be from curb to curb. Plowing of residential streets will not typically begin until after the emergency snow routes, high traffic volume streets, hospital and business districts have been cleared of snow accumulation.

All plowing will normally be done by pushing snow toward the side of the street and leaving the berm approximately two feet from the curb. Care shall be exercised by operators to minimize the blocking of driveways and burying sidewalks. The Street Division Supervisor, however, recognizes that blocking driveways and burying sidewalks is at times unavoidable. The burden is then with the property owner or occupant to clear them.

The city will use a chemical deicer (magnesium or calcium chloride) with a rust inhibitor agent in lieu of straight road salt. This material will be applied primarily in the Downtown Business District. The liquid application can occur in temperatures as low as 10 degrees Fahrenheit.

The chemical deicer material can be applied prior to a storm (weather permitting) to prevent the bonding of ice and snow pack to the street surface. Application of this material to a dry clear street will occur on some occasions in anticipation of a predicted snowfall.

Road salt is added to our sanding materials at a 2 - 3% salt to sand ratio. This will prevent the sand from freezing and becoming unworkable. All sanding trucks are equipped with liquid dispensing tanks that apply a minimum amount of chloride to the sand. This enables the sand to stick to any icy surface.

The act of plowing snow to the center of the street where it is loaded into trucks with frontend loaders is limited due to the high cost and manpower demands associated with this process. It is done selectively using the following criteria:

- Access parking
- Provide additional snow storage
- Facilitate traffic movements

This operation is not started until plowing and sanding of all priority routes has been completed and conditions allow.

IV. SPECIAL REQUESTS

Persons who have questions about snow and ice control or unsafe winter driving conditions should contact the City of Helena Street Division at 447-1566. Calls received by the Street Division during or after a winter storm will be logged in order to provide a record.

Since the Street Division receives a large number of special requests during and after a winter storm, it is not possible to dispatch snow and ice control equipment immediately upon request. The Supervisor shall substantiate special requests by means such as:

- 1) Radio messages from equipment operators, police and/or dispatch;
- 2) Information from the street foreman;
- 3) Multiple requests from the same general area.

Once a request is determined to be valid, the supervisor shall respond except in cases of extenuating circumstances. Special requests shall not be given priority over the planned schedule. The response action will depend on resource availability and the number of special requests to be dealt with.

V - Record Snowfall Event

During a record snowfall event there will be a time frame of initial immobilization throughout the city. During such an occurrence, not only could the streets be impassable but many other factors may enter into the confusion such as loss of telephone, power and heat.

The most important step during a disaster of this nature would be keeping the public informed, reassuring everyone that the Street Division is working and that more equipment is on the way. Emergency travel only notifications should be

broadcast and a status report as to road conditions and plowing operations should be given to the public twice daily. Vehicles should either be removed from the streets or be flagged on the antennas, as snow removal could result in some vehicles getting buried in the process.

Emergency areas would be cleared by the various agencies using the eight areas previously set as guidelines. The Street Division would be divided into two or three shifts providing a 24-hour coverage and coordination of efforts. This would enable City employees familiar with the established snow routes to direct operations in each of the eight designated areas. Contracted crews could begin snow plowing or removal efforts but they are not typically equipped to sand cleared streets. At this point, City employees directing the operation could provide the necessary sanding of intersections and inform the general public as to what streets are passable. The advantages of using our own Street Division employees to direct the initial operation is their familiarity with the snow routes and the fact that they could maintain radio communication, thus allowing us to keep the public informed on the progress being made.

Snow removal efforts by private businesses may also present some problems. Our present storage area is inadequate for any type of record snowfall. Areas to be considered for storage could be:

- Batch Field and behind Bill Robert's Golf Course;
- Henderson Street ponds (no blockage of channels or culverts);
- Ryan Field
- Fairgrounds.

Caution should be exercised when storing snow in areas of retention ponds or natural drainage areas as a sudden freeze situation could further complicate matters.

VI - Street Division Snow Equipment

2 tandem axle ten cubic yard dump trucks with plows and sanders
6 single axle five cubic yard dump trucks with plows and sanders
1 single axle deicer truck with a plow
1 single axle 1 ½ ton four wheel drive truck with plow and sander
1 single axle four wheel drive pickup truck with plow and sander
2 road graders one with a snow gate
one snow blower

VII - City of Helena Staff and Shift Schedule

The Street crew consists of 10 full time operators and 1 full time supervisor
The Traffic Division can be called upon for support of one more operator

Manpower is scheduled according to needs with shifts beginning at

4:00 am

7:00 am

1:30 pm

The Street crew can run up to 12 hour shifts 7 days a week