

BOARD OF PUBLIC WORKS
CITY OF BEATRICE, NEBRASKA

SNOW AND ICE FIGHTING PLAN

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STREET DEPARTMENT SUPERINTENDENT

INTRODUCTION

Safe transportation over the city streets is a matter of major importance to the citizens of the city and is essential to the general welfare of the City of Beatrice.

A winter storm has an enormous effect on the daily routines of each and every citizen of the city. It is the goal of the Beatrice board of Public Works Street Department to manage and operate a snow and ice control program that will allow a reasonably careful driver to safely travel the city street system throughout the season.

To reach this goal, the snow and ice plan must achieve the following objectives:

1. Keep 100% of the emergency snow route system open to traffic every winter storm without regard to the storm's intensity by:
 - a. Spreading salt and/or sand on emergency snow routes throughout each winter storm.
 - b. Plowing snow on emergency snow routes continuously throughout each snow storm that has intensity or drifting conditions that severely restricts the flow of traffic. This can take 3 to 5 hours.
2. Open all remaining streets within 8 to 10 hours after the end of each winter storm by:
 - a. Plowing all streets curb-to-curb within 8 to 10 hours after the end of each plowable snowstorm.
 - b. Spread salt and/or sand to improve traction and stopping ability at all controlled intersections.
3. Complete removal of snow from the central business district, outlying business districts, and certain arterial streets where storage of snow from streets is not possible by:
 - a. Spreading salt to melt the snow when a small storm occurs and temperature allows.
 - b. Ridging and hauling snow completely away.

General Operating Procedures

DE-ICING

As soon as the weather conditions warrant, the Street Department begins salting and sanding of the snow routes. Material spreading equipment is assigned to predetermined routes on which specific vehicles and specific drivers are expected to operate. Maps of each of these routes are placed in each of the vehicles. It takes 2 to 3 hours to complete the sanding and/or salting of emergency snow routes. After de-icing the snow routes, we then sand and salt all of the stop and yield signs. This takes an additional 1 to 2 hours.

Generally, this sanding and/or salting procedure begins with the accumulation of light snow or freezing precipitation. Experience indicates that a salt brine on the pavement section produces an effective, desirable result as opposed to applying the sand and/or salt after an accumulation of snow has built-up on the pavement. Highways, Bridges and snow routes are the first areas salted.

Depending upon the temperature and type of freezing precipitation, salt may be pre-wetted with a 32% calcium chloride solution. This will allow the salt to work when temperatures fall below 20 ° F. Continuous traffic on salted roadway section helps distribute and work the salt to provide a good brine solution. In order to accomplish this proper distribution, it is critical that spreading equipment be accurately calibrated before the snow season.

When snow first begins to fall, traffic problems result from slick streets and the spreading operation attempts to minimize this problem. If snow continues, the nature of the problem changes to one where vehicle movement is hampered by a snow depth of **2 inches**. When this change begins to occur, we then switch to the snow plowing and removal part of our plan.

SNOW PLOWING AND REMOVAL

When streets must be plowed, the city may declare a “Snow Emergency”. During a snow emergency, parking is banned on all “Emergency Snow Routes”. Vehicles parked or stalled on these streets may be towed at the owner’s expense. Snow routes must remain open for emergency vehicles, so these streets will receive top priority. The snow routes can usually be plowed open curb-to-curb in 3 to 5 hours.

After the snow routes are opened, we will then move into the remaining residential streets. We have ten pieces of equipment with this plowing capability. These units are each sent to different areas of the city. Only the two motor graders are equipped with snow gates to help prevent the plows from plugging driveways when the snow is removed from the streets. These two plows are used to widen the highways, plow and ridge the downtown business district, and plow the one-way streets. They are **not** used in the residential areas due to time restraints. We can usually have the remaining residential streets open in 8 to 10 hours. This is in addition to the 3 to 5 hours used for the snow routes. In all, 11 to 15 hours are needed to completely open the whole city curb-to-curb.

After the city is open curb-to-curb, we will then drop the plows and put salt and sand on the snow routes and the stop and yield sign areas to try to melt any remaining snow and ice areas.

Depending on the type of snow and the amount of wind, we will dispatch plows, as needed, to drifting areas and trouble spots.

Parked cars create a substantial problem with the plowing operation. Plows have to slow down and plow around these cars. This causes loss of productivity and once the cars are moved, it makes for quite a mess on that street. When time permits we will try and come back and widen those areas where cars were parked, but this is not a productive use of our equipment.

The Board of Public Works Water Department uses their backhoes to open the alleys in the city. They also clean the city-owned parking lots in the downtown area and the sidewalks on our bridges.

After completely opening the entire city curb-to-curb, we will move into our next step in our snow removal plan. This would be the act of re-ridging and hauling off the snow from major arterial and business district streets.

COMPLETE SNOW REMOVAL

For most snowstorms, the complete snow removal operation will be limited to loading and hauling snow from streets where it cannot be left stored until it melts. The streets where hauling must be accomplished will vary depending on the amount of snowfall. Because the amount of storage spaces varies from none at all along some arterials and business district streets, to nearly unlimited storage space along some arterial streets and most local streets. For those streets where no storage space exists, even a small snowstorm will usually require a snow hauling operation. As the amount of snowfall increases, streets with limited on-site storage space may also require that snow be hauled away. With a major snowstorm, snow hauling operation may be required on almost any street.

This complete snow removal and hauling operation is done within 48 hours form the end of snowfall.

This hauling operation usually requires dump trucks from WPC, and Private Contractors. These trucks are all loaded by the Street Department's snow-blower. Most trucks can be loaded in less than a minute.

The final step after hauling the snow form the major arterial and business district would be to salt and/or sand any slick spots left form the hauling operation.

Summary

One of the most important services a community can render its citizens is prompt and efficient action in fighting ice and snow. A **successful** program requires **good organization** and a team of **efficient** employees.

It is important when any bad driving condition arises to put this plan into action immediately. It is much better to call crews out and not have to use them than to wait too long and have a serious accident result from the delay.

This snow and ice fighting plan described for the City of Beatrice is not without its problems, but with everyone pulling together and all departments cooperating, prompt action during snow and ice conditions should result in the prevention of accidents, injuries, and property damage.

The instruction, routes, and work schedules as listed in this book shall be followed exactly, unless directed otherwise by the Street Department Foreman or Superintendent.

In our Workforce we have:

2- Patrols

3- Loaders

7- Dump Trucks

3- Backhoes

2- Snow-blowers which we only use one, and the other one is for backup.