

Department Note: As MS4 Permittees demonstrate compliance differently and MS4 Permittees may have different MS4 permit conditions, the following written program procedure is intended to provide ideas on various formats. Therefore, please note the provided example may not be appropriate, as is, for your community. Additionally, the following is a written program procedure that has been submitted to the Department by a MS4 Permittee. However, the MS4 Permittee name have been removed to keep them anonymous.

Department of Neighborhood Services

Engineering Division

Storm Water Management Program

Pollution Prevention

Winter Road Management

Overview

This document provides an overview of the City's winter road management practices as they relate to the Wisconsin Department of Natural Resource (WI DNR) WPDES permitting requirements for winter road management.

1. Management Responsibilities

The Department of Public Works (DPW) is responsible for winter road management of City streets, alleys, sidewalks and at our municipal properties. DPW has prescribed a policy with specifications for the removal and control of snow ice, as approved by the Common Council. This policy is outlined in Chapter 6 of the Department of Neighborhood Services DPW Winter Maintenance Policy, as last revised and is incorporated herein by reference (Appendix A).

2. Additional WPDES Winter Road Management Strategies

As the primary goal of our DPW Winter Maintenance Policy focuses on making roadways safe for the public, and to ensure that emergency services will be maintained without exception, the following items are included to provide further clarification to confirm compliance with the Wisconsin Department of Natural Resources (WI DNR) Winter Road Management requirements detailed in our WPDES permit:

- a) The City believes that our DPW Winter Maintenance Policy includes suitable salt application and reduction strategies to help minimize over application of deicers while maintaining the appropriate level of winter road management to ensure public safety. Further, our policy provides a detailed summary of the processes and procedures that are followed in various winter conditions and includes a summary of equipment and personnel criteria.
- b) All salt application equipment shall be calibrated annually by DPW, with records kept to document the date and calibration methods.
- c) Applicable DPW staff shall receive training at a frequency no less than every other year on the City's Winter Maintenance Policy and winter road management strategies.
- d) The quantity of salt and other deicing products shall be tracked on a monthly basis and included in our WI DNR WPDES annual reporting process.

3. Winter Road Management Minimum Control Measures

The City has established the following minimum control measures for our Winter Road Management program:

- Properly calibrate salt application equipment and document.
- Provide proper salt strategy training for applicable staff no less than every other year.
- Track the quantity of salt and other deicing products on a monthly basis and report usage in our WPDES annual report.

Appendix A

1. Authority

The Department of Neighborhood Services shall prescribe a policy with specifications for the removal and control of snow ice, as approved by the Common Council. This is the authority for the guidelines outlined in chapter 6 of this manual. These guidelines are considered a living document and will typically be reviewed at the end of each winter season.

2. Introduction

- A. The goal of winter maintenance is to make roadways safe within the limitations of resources. Hence, motorists can expect some inconvenience and will be expected to modify their driving practices to adapt to road conditions. Access for emergency services will be maintained without exception.
- B. Not every snow event is the same, therefore, not every snow plowing effort is the same. With minor snowfalls, all streets may be plowed within 6-8 hours. With a heavy snowfall, or one that occurs over multiple days, it will take much longer to clear all streets. Every effort is made to complete snow plowing operations as quickly and safely as possible. We do not have sufficient staff or equipment to provide 24 hour coverage.
- C. The proactive approach of anti-icing has proven under certain conditions to be an effective and efficient technique for winter maintenance. The Division of Public Works will utilize anti-icing methods when the weather conditions warrant. Current acceptable anti-icing methods may include applying liquid anti-icing agents and/or pre-wetted salt to the pavement surface and/or bridge decks prior to predicted precipitation events or on a predetermined schedule.
- D. Plowing is to be the primary means of snow removal. De-icing agents are used principally to keep snow from bonding to the pavement, which in turn facilitates clearing of the pavement after a storm.
- E. De-icing agents should be used in the following recommended priority order:
 - a. to anti-ice by attempting to prevent the bonding of ice/snow to the pavement;
 - b. to keep snow in plowable condition and keep slush from forming into compacted snow (snowpack);
 - c. to de-ice, thereby breaking the bond between ice/snow already bonded to the pavement; and
 - d. to melt ice/snow.

1. General

The supervision of winter maintenance is the responsibility of the Superintendent of Public Works. The Superintendent directs and delegates responsibilities to the Working Foreman. Lines of authority should be adhered to so that the winter maintenance program is run smoothly and efficiently.

2. Introduction

Public Works should ensure the effective administration of the winter maintenance program through general guidance and control of activities. The gathering of maintenance forces and equipment, identification of required activities and establishment of priorities should be requisite duties, and all actions should be done with recognition of goals established in or with the use of this policy. Public Works should also monitor operations for uniformity of service and appropriate usage of salt and other de-icing agents.

3. Personnel

In order to administer the winter maintenance program, Public Works should provide supervision of personnel, equipment and resources. It should ensure that personnel are adequately trained to perform the duties assigned them and operate the necessary pieces of equipment. It should determine equipment, materials and manpower requirements, taking into account all known and anticipated needs. The Superintendent and the on-call Working Foreman is responsible for personnel call-in; scheduling rest breaks; determining the number of hours of service; and removing operators from the road during extreme conditions.

1. General

Winter maintenance activities are prioritized based upon a system of facility classifications.

2. Facility Classifications

The following is a list of facility classifications by priority:

High Priority

- A. Arterial Streets (high volume)
- B. Collector Streets (medium volume)
- C. Institutional Streets (serving public buildings including schools)
- D. Commercial Streets (serving business districts)
- E. Emergency Services Buildings including the Fire Stations and the Law Enforcement Center

Medium Priority

- A. Residential streets (low volume)
- B. Alleys
- C. Parking Lots

Low Priority

- A. Sidewalks
- B. Bus pads

3. Winter Facility Classifications Map

Public Works will maintain a map of facilities by classification requiring winter maintenance.

1. General

Weather Conditions Monitoring is the process by which road conditions are monitored and reported to prepare for and implement winter maintenance operations.

2. Weather Service Providers

Public Works monitors local weather forecasts.

3. Responsible Personnel

During a normal workday, the Working Forman on-call, in consultation with the Superintendent of Public Works, monitors the weather.

While off duty during the evening, on weekends and holidays, the On-call Working Foreman is responsible for monitoring the weather. During severe weather, they may consult the Superintendent of Public Works.

Weather conditions can vary throughout the city. The Police and Fire Department personnel are a valuable resource for reporting localized weather conditions. The Police and Fire Department Supervisors may contact the On-call working foreman through dispatch to alert them to changing weather conditions.

4. Snow Emergency and Emergency Parking Regulations.

A Snow Emergency is declared when snow accumulations are expected to limit the ability to safely and efficiently clear the streets of snow and ice.

- 1) The provisions of this section shall be applicable to all emergency vehicles in addition to snow removal activities engaged in by the Division of Public Works, irrespective of a snow emergency declaration. Any motor vehicle, trailer or wheeled vehicle which is left on the streets of the City which impedes the movement of any emergency vehicle or the operation to effectively remove accumulated snow by the Public Works Division shall be subject to tow away. The Division of Public Works and Police Department shall see to the towing of any such vehicle. Tow charges shall be paid by the owner of the vehicle prior to release of the vehicle. In no event shall the City be responsible for tow charges. Private towing contractors accepting tows from the City are deemed to know, understand and accept the provisions of this section. This provision shall be in effect from November 1 to April 30 of each year.
- 2) An emergency shall be declared to exist when snow is falling at a minimum of one inch per hour or has accumulated to a depth of 3 inches or more, or at the request of the Superintendent of Public Works.
- 3) Upon a snow emergency arising, the Superintendent of Public Works or, in his absence, the Mayor, shall declare a state of emergency existing, make the declaration thereof and shall issue a public proclamation to that effect by radio, television, placards or other means of communication.
- 4) In addition to the following listed streets, the declaration shall permit parking only on the even-numbered side of the street on those nights bearing an even calendar date during the portion thereof before midnight and until noon the following day, and on odd-numbered sides of the street on those nights bearing an odd calendar date during the portion thereof before midnight until noon the following day.

- a) S. 27th Street, S. 35th Street, S. 43rd Street, S. 51st Street, S. 60th Street, S. 68th Street, S. 76th Street, S. 84th Street, S. 92nd Street, S. 104th Street, S. 112th Street, S. 116th Street, S. 124th Street and W. Morgan Avenue, W. Howard Avenue, W. Cold Spring Road, W. Layton Avenue, W. Edgerton Avenue, W. Grange Avenue, W. Ramsey Avenue, W. College Avenue, W. Loomis Road, W. Forest Home Avenue, W. Beloit Road, S. 31st Street between W. Edgerton Avenue and W. Grange Avenue.
 - b) Any such other thoroughfares as may be so declared by proclamation are declared emergency thoroughfares for the purposes of this section.
- 5) After such declaration of snow emergency, no person shall park any vehicle upon any street declared an emergency thoroughfare from the time of the declaration until the completion of the snowplowing or such other times designated in such declaration.

1. General

The Winter Maintenance Policy calls for up to 18 hours of coverage per day during the storm. The intent is to provide service to the public for those hours based on the facility usage and traffic volumes. Experience has shown that continuous 24 hour coverage during winter storms is not necessary to maintain an acceptable level of service. Continuous coverage needlessly causes exhaustion of plow operators, making them unavailable to work during the hours when they would be more effective. Access for emergency services will be maintained without exception.

Not every snow event is the same, therefore, not every snow plowing effort is the same. With minor snowfalls, all streets may be plowed within 6-8 hours. With a heavy snowfall, or one that occurs over multiple days, it will take much longer to clear all streets. Every effort is made to complete snow plowing operations as quickly and safely as possible. We do not have sufficient staff or equipment to provide 24 hour coverage.

2. Health and Safety

Public Works limits the number of continuous hours a plow operator can work on a shift. The limitation is done with the public's and plow operator's health and welfare in mind. Excessive continuous hours can be hazardous to both the operator and the public and can lead to an increased potential for crashes.

3. Temporary Level of Service Reduction During Extreme Conditions

During storms of high intensity or long duration, it may be necessary to temporarily accept a lower level of service because of dangerous conditions, and the need to allow a portion of the available plow operators to rest.

The goal of winter maintenance is to make roadways safe within the limitations of resources. Hence, motorists can expect some inconvenience and will be expected to modify their driving practices to adapt to road conditions.

1. General

The purpose of this guideline is to outline the level of service that should be undertaken Facility Classification during a winter storm event. After the event has ended the effort will switch to cleanup with the intermediate goal of bare/wet pavement and finally the ultimate goal of bare/dry pavement. The time to achieve these goals will depend on the limitations imposed by weather conditions, the availability of resources, and environmental concerns.

2. Level of Service Maintenance Priorities

A. High Priority Classifications (*Arterial, Collector, Institutional, Commercial, and Emergency Services Buildings*)

Efforts will be made to maintain this category to the highest standards possible, dependent upon the current weather conditions. When conditions warrant, coverage will be provided up to 18 hours per day during the storm. The gap in coverage is necessary to provide for operator recovery time. The operator recovery time should typically be between the hours of 10:00 PM and 4:00 AM, but will vary with specific storm conditions. Access for emergency services will be maintained without exception.

High Priority Classifications may be pre-treated with brine. Plowing begins when snow has accumulated. Salt is applied based on conditions such as air and pavement temperature, wind and drifting, current and predicted snow fall rate, and other factors that impact the effectiveness of the salt.

B. Medium Priority Classifications (*Residential, Alleys, Parking Lots*)

At the discretion of the Superintendent or their designee, any available resources not dedicated to the High Priority Category will be assigned to maintain the Medium Priority Category. When conditions warrant, coverage may be provided up to 18 hours per day during the storm. Initially this category will only be maintained to keep it passable for vehicles. As weather conditions improve, and during normal work hours, efforts will be made to maintain this category to the highest standards possible. The gap in coverage is necessary to provide for operator recovery time. The operator recovery time should typically be between the hours of 10:00 PM and 4:00 AM, but will vary with specific storm conditions. Access for emergency services will be maintained without exception.

Medium Priority Classifications may be pre-treated with brine. Plowing typically begins if 2-inches of snow has accumulated. A minimal amount of salt is applied based on conditions such as air and pavement temperature, wind and drifting, current and predicted snow fall rate, and other factors that impact the effectiveness of the salt. A thin cover of snow is considered acceptable, as long as it does not result in excessively slippery conditions.

C. Low Priority Classifications (*Sidewalk, Bus Pads*)

Coverage for the Low Priority Category will be provided during normal work hours.

1. General

Cleanup is generally accomplished during normal non-overtime working hours. All cleanup operations should be performed with the motorist's expectations in mind. Outcomes the motorist expects might include:

- A. Elimination of fingers of drifting snow
- B. Adequate visibility for safe vehicle operation
- C. Shoulder point or curb line which is defined
- D. Minimal gouging or other damage to the sod
- E. Minimal displacement of shoulder gravel
- F. Safe operation of vehicle at a reasonable speed without loss of traction

Cleanup should include:

- A. In cul-de-sacs, where conditions warrant, push snow back
- B. Wing back along streets
- C. Plow unplowed parking lots or paths
- D. Push back and / or remove snow at intersections to improve visibility
- E. Remove snow where snowmelt may run onto the street and cause slippery conditions
- F. Take necessary action in areas that are subject to drifting
- G. Remove snow from areas where snow storage reduces visibility in intersections
- H. Complete any needed truck, equipment or maintenance repairs.

Private driveways are not to be opened during plowing or as a cleanup activity. Owners are responsible for opening their driveways and removing the windrow. Authorized winging back should be done carefully so that accumulation of snow in driveways is minimized.