



Winter Maintenance Operations Guidelines

A. General

The purpose of the Winter Operations Guidelines are to provide guidance to the Regions, TSCs, contract agencies, and direct maintenance organizations to achieve consistent road surface conditions during and after winter storms. The guidelines are designed to maximize efficiency and assign an appropriate Level of Service (LOS) for trunklines statewide.

B. Assigning Winter Operations LOS

MDOT assigns winter operations LOS using the Corridors of Highest Significance outlined in the *State Long Range Transportation Plan 2005-2030*. The plan focuses on the link between transportation and Michigan's economic vitality and quality of life; and designates corridors based on the primary origin/destination they serve; and are directly tied to international, national, statewide, regional, and local significance.

To remain consistent with the *State Long Range Transportation Plan 2005-2030*, MDOT uses the International/National and Statewide categories as the basis for the winter maintenance LOS Priority #1- Orange Routes. The Regionally and Locally Significant Corridors are the basis for the Priority #2- Blue Routes.

Corridor significance takes into account the following factors: Average Daily Traffic (ADT), commercial ADT, population, employment, tourism, airports, carpool lots and intermodal freight.

The *State Long Range Transportation Plan* defines a Corridor of High Significance (International/National and Statewide routes) as a multi-modal system of transportation infrastructure along geographic corridors that provide a high level of support to international, national, and state economies. The Regionally and Locally

Significant Corridors are defined as a multi-modal system of transportation infrastructure along geographic corridors that provide a high level of support to a specific region or sub-region of Michigan's economy.

C. Service Levels

As mentioned previously, MDOT separates state trunkline into two distinct winter maintenance LOS categories: Priority #1- Orange Routes and Priority #2- Blue Routes. The definitions of these routes follow below.

Priority #1- Orange Route

Provide maintenance service as appropriate under prevailing weather conditions, with a goal of providing a pavement surface over its entire width generally bare of ice and snow. This work may be accomplished using overtime as necessary.

Clearing the pavement bare of ice and snow over its entire width will be a continuous process during and after the snow event using overtime as necessary.



Priority #2- Blue Route

Provide maintenance service as appropriate under prevailing weather conditions, with a goal of providing a pavement surface generally bare of ice and snow wide enough for one-wheel track in each direction. This work may be accomplished using overtime as necessary during a winter storm event.

Clearing the pavement bare of ice and snow over its entire width will be accomplished as soon as reasonably possible after the winter storm event, without working overtime.



D. Communication/Coordination

The Winter Letter of Understanding and Winter Shift Schedule defines the shifts, shift times and night patrol activities, respectively, for contract agencies and MDOT Direct Maintenance forces. The shift and night patrol schedules, along with the starting and ending times, will influence the effectiveness of the winter maintenance operations and activities.

Timing of winter maintenance activities at jurisdictional boundaries (contract agency and/or MDOT Direct Maintenance forces) is dependent on effective communication and coordination. Coordination of starting times for adjacent agencies should be evaluated and adjusted (if practical) to minimize any time differential between the start and completion of winter maintenance at jurisdictional boundaries.

Communications between agencies is necessary to facilitate maximum effectiveness throughout the routes; therefore, it is extremely important that a communications plan be established and followed.

E. Definition of “Generally Bare of Ice and Snow”

A pavement that is “generally bare of ice and snow” is defined as a travel lane surface that is free from drifts, snow ridges, and as much ice and snow pack as practical. It should not be confused with a “dry pavement” or “bare pavement” which is essentially free of all ice, snow and any free moisture. This “dry/bare pavement” condition may not exist until the weather conditions improve to the point where this pavement condition can be provided.

Under this definition, motorists can expect some inconvenience and will be expected to modify their driving practices to suit road conditions. This is supported by *The Michigan Motor Vehicle* code section 627.(1) which states, “A person driving a vehicle on a highway shall drive at a careful and prudent speed not greater than nor less than is reasonable and proper, having due regard to the traffic, surface and width of the highway and of any other condition then existing.”

F. Effort During the Storm

The severity of a winter storm event, roadway temperatures, and availability of resources along with other factors will dictate what condition the roadways are in and subsequently when bare/wet or bare/dry pavement can be obtained.

During the winter storm event, maintenance forces will plow and apply surface treatments as necessary. Only enough de-icing agents should be used to keep the total accumulation workable, thereby minimizing bonding during the winter storm event. (See Treatment Tables 1 through 6)

It is acknowledged that using greater salt and de-icing agent application rates than those provided for in this guideline has the potential to achieve bare/wet conditions more quickly during and after a winter storm event. However, when balancing concerns for the environment, availability of resources, budgets, and common practices among the snow-belt states, the current application rates are appropriate and should be adhered to.

G. Clean-up

After the winter storm 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 climate conditions, availability of resources, and environmental concerns.

H. Exceptions

The priority service levels are intended as a guide in winter maintenance operations and shall be adhered to as much as possible. However, exceptions may be deemed appropriate based on local conditions.

Exceptions to these guidelines may include:

- Reducing service level efforts due to extreme conditions which would include:
 - > Limited visibility for operators;
 - > Length and severity of the storm;
 - > Budget restrictions or unavailability of de-icing chemicals.

- Allowing breaks between shifts during off traffic peak hours to reduce operational costs and operator fatigue.
- Continuing service level effort to prevent snow compaction or other hazardous conditions.
- Allowing extraordinary means when impending weather or an influx of traffic, such as a sport event or holiday is anticipated.

I. Service Uniformity

Customers place a high value on minimizing unexpected changes in pavement surface condition. Therefore, even when exceptions, as listed above, are made, uniformity of service level should be continually sought. This means that winter plow routes should end at logical locations where a motorist might anticipate a change in priority service level. These locations might include:

- High volume interchanges where traffic volumes significantly change;
- Leaving or entering municipalities;
- Dramatic or well defined changes in topography; or
- Speed changes.

Providing continuity of service across jurisdictional boundaries will require close coordination between state garages, contract counties and regions.

J. Winter Highway Maintenance Map

Each region will be allowed to suggest exceptions to their plan annually. Exceptions must be justified in writing to the Engineer of Operations by August 15 of each year and will be reviewed by Central Maintenance. The Engineer of Operations will make recommendations on each change to the Chief Operations Officer (COO) by September 1. The COO will approve or deny the requested exceptions by September 15.