



Liability & Property Pool Workers' Compensation Fund

RISK CONTROL SOLUTIONS

A Service of the Michigan Municipal League Liability and Property Pool and
the Michigan Municipal League Workers' Compensation Fund

Snow Removal Operations in Your Municipality

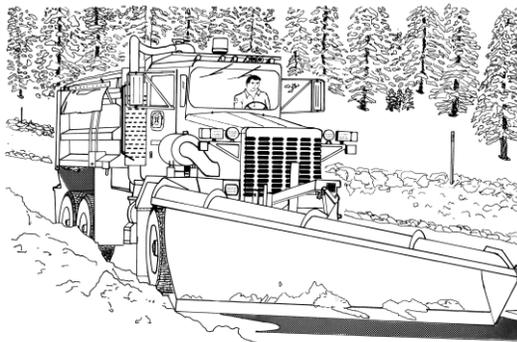
A snowstorm can stop business in your community, hinder emergency operations, and place pedestrians and motorists in harm's way. Therefore, snow removal is a high profile activity that requires detailed planning on the part of the municipality.

Developing a Program

The first step in developing a snow removal program is establishing snow removal priorities and the levels of service the municipality will provide. Usually the Department of Public Works (DPW) makes this determination. The DPW then submits the plan to the council or other governing body for approval. Typical priorities are:

- **Priority 1:** Emergency routes (main roads used for EMS, Fire and Police) as well as major roads (high volume; that is, daily winter traffic of 6000+ vehicles).
- **Priority 2:** Main roads (daily winter traffic of 1000-6000 vehicles) other than emergency routes, the business district, specified areas such access roads to municipal buildings and schools.
- **Priority 3:** Residential streets
- **Priority 4:** Sidewalks and parking lots in the business district and around schools and municipal buildings

In addition, the DPW Superintendent/Director should determine when it is necessary to declare a snow emergency. Usually, the depth of snowfall or the amount of snowfall per hour is the determining factor. When the DPW issues a snow emergency warning, it should contact the media to alert the public. The DPW should also work with the Police Department to develop a plan for vehicle removal during snow emergencies. A system should also be in place for the Police Department to alert the DPW to hazardous driving and/or weather conditions in specific areas of the community.



Coordination in advance with your local MDOT facility should also be part of your overall planning.

At a minimum, the DPW should determine service levels for the established priorities, including crosswalks, intersections, and bus stops. For example, emergency routes and major roads usually require clearing curb-to-curb, leaving pavement as bare as possible. Main school bus routes may need only plowing while approaches to stop signs and stoplights may require bare pavement. Residential streets may receive only plowing service as close to the curb as possible.

During the development of service levels, the DPW should consider the following:

- Snow depth:

How deep will the snow be when removal operations begin? How long will it take to clear snow of varying depths? How many inches must fall within a given period to call a snow emergency?

- Snow quality:

Is the snow dry and powdery? Wet and heavy? Is it sleeting or freezing rain?

- Priorities -- Should the DPW have the discretion to change priorities? Who will make the decision and under what conditions?
- Bare pavement -- How achievable is this desirable condition? To what roads must the condition absolutely apply? During a heavy snowstorm, when should snowplow operators move on to other roads even if roads designated as "bare pavement" remain snow covered?
- Maximum allowable snow accumulations -- How much snow on the ground is acceptable?
- Salting -- Under what conditions will the municipality spread salt?
- Sanding -- Under what conditions will the municipality use sand?

The municipality should inform the public about plowing priorities and service levels. Local newspapers, cable television, social media and inserts in community mailers such as the community's calendar of events are good ways of spreading the word. A map with the priorities marked can help citizens to understand when they can expect service in their area and be a useful tool for the snow removal crew.

Budgeting Considerations

The DPW Superintendent/Director -- together with the municipality's finance staff, the city manager, and the council -- should review and evaluate the costs of various options for snow removal. This is particularly important in these difficult financial times. The review should include an identification and analysis of any liabilities that the options might create. Before conducting this essential review and finalizing service standards, the DPW should collect and organize historical data about snow removal in the municipality. Long time, high seniority employees, familiar with previous snow removal considerations, can be invaluable in this area.

Two important areas of data collection are costs (equipment, repairs, supplies, regular payroll and overtime) and experience during previous years. The data should provide objective proof that:

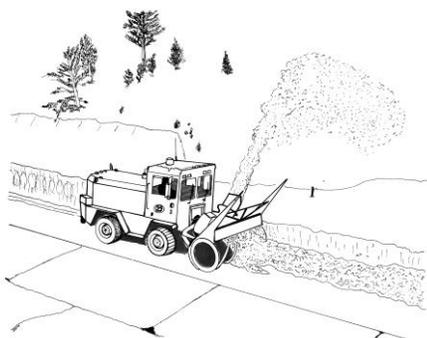
- Snow removal is labor intensive,
- Snow storms are unpredictable and that forecasting them approaches certainty only through the use of long-term averages, and
- Snow removal is costly because equipment and crews are often on standby.

The information allows the governing body to make an informed decision about allocating funds for snow removal operations. It also gives the municipality information it needs to explain the levels of service to its citizens.

Even with excellent information, budgeting for snow removal can be difficult. Winters and snow levels can vary widely. The budget that was adequate the year before may prove woefully inadequate the next. Therefore, the governing body may commit to providing the same level of service even when it means overspending the budget. To minimize the impact of a major snow year on the municipality's resources, the council should consider budgeting for an average year. In years when snowfall is lighter, excess funds should go into a reserve fund. These funds would then be available for years with heavy snow.

Equipment Needs

The DPW must calculate the amount of equipment necessary to provide snow removal during an average storm and compare it to the amount of equipment currently available. If the comparison reveals that the amount of equipment is inadequate to fulfill service commitments, a municipality must decide if it can or wants to purchase



additional equipment. If purchasing equipment is not an option, the DPW should consider augmenting its fleet by renting from or setting up contracts with the private sector. When contracting or renting will be under consideration, it would be prudent to discuss the contract/rental agreement with suppliers before snow season arrives.

The need to purchase or rent equipment should always be evaluated against the outcome if necessary equipment is not available. For example, high volume snow blowers are very expensive but essential in a heavy snowstorm. A municipality may be reluctant to budget for the equipment. The result, however, may be a slow down in all other public services, including emergency police, fire, and medical services.

Renting

The municipality should determine what equipment is available in the area. This can be useful in both "typical" winters and during emergencies. Construction firms can be a good source of equipment because their work schedule is usually slower during the winter and they have equipment that is idle. It is beneficial for these companies to keep the equipment in use so they get full value for the financial outlay they have made. When making decisions about renting, the municipality should remember that some firms will have equipment with plows and spreaders already mounted. Other firms may not have plows and spreaders and the municipality may need to supply them. The municipality should have legal counsel review all rental agreements to assure that there are no disputes about responsibility for the equipment, its condition, maintenance, or repair.

Contracting

A municipality may choose to contract out all or part of its snow removal services. This can reduce costs by transferring payroll, overtime, equipment and maintenance costs to an outside company or provider. However, communities cannot contract out their obligation to their citizens. They must be vigilant to assure that the contracted service provider fulfills the municipality's commitment to its citizens as stated in its snow removal policy. The municipality should have legal counsel review all agreements with contractors to assure that there are no disputes about responsibilities for service, the condition of equipment, maintenance, or repairs.

After establishing its snow removal policy, planning service levels, budgeting for the activity, and deciding whether to retain the activity or contract it out, municipal management must continuously prepare for each new snow season.

Annually -- in the early fall -- the municipality should perform the following tasks to assure that procedures, operators, salt and/or sand, equipment and back-ups are ready:

- 1) **Recheck and confirm service levels.** This activity should include a review of the previous year's experience.
- 2) **Establish and check plans:**
 - Snow removal routes for streets and roads,
 - Priorities for snow removal by streets and roads,
 - Crew members, including emergency telephone numbers,
 - Municipally-owned equipment,
 - Rented or contracted equipment on standby with the private sector,
 - On-line and hard-copy maps, ~~and~~
 - Radio and telephone communications and,
 - Insure on-site rest/sleep facilities (if used) for snow plow operators are ready.
- 3) **Train and retrain crews and their supervisors.** This is essential. Snow removal takes place during a limited period each year. After a year, snowplow operators' skills may be rusty. In addition, many DPW's use employees from other departments -- the Parks and Recreation Department, for example -- to assist in snow removal. While this practice maximizes the municipality's payroll, it also means that employees may

be driving equipment with which they are not familiar. Training should include hands-on operation of the equipment that employees will operate and classroom instruction in all aspects of the municipality's snow removal policy and program. Providers of rented equipment should also train your personnel regarding the use of their equipment. See the *Risk Control Solution* entitled Reducing the Risk of Motor Vehicle Operations: Hiring and Training to Reduce Losses.

- 4) **Establish a firm policy of allowable hours for plow operators.** Snow plowing is a physical and mentally demanding task, particularly in urban areas. Frequently, it may involve overtime. The policy should be implemented and enforced to insure that operators do not become fatigued or overextend themselves. Once an incident occurs, particularly an injury of the operator or general public, the monetary gains of overtime will seem very unimportant.
- 5) **Assign snowplow operators to specific equipment and routes.** Use more experienced operators on heavy equipment and in high traffic areas. Use less experienced drivers on other equipment and on less traveled roads. Do not switch operators to other pieces of equipment unless they have received appropriate training and have the demonstrated ability to handle the work.
- 6) **Inspect all municipally-owned equipment.** Verify that mechanics have completed all repairs and that the equipment is ready for use. Repairs and maintenance should follow manufacturers' recommendations.
- 7) **Inspect and assure that contractors have serviced and made their equipment ready for use.**
- 8) **Draft and check communication plans** so that the municipality can send prompt, concise and accurate reports on road conditions to the city council, city manager, and the media.

Sample Snow and Ice Removal Policies

The following samples are provided as guidance in developing policies and procedures for your municipality. You should develop your own policies and procedures or modify these samples to meet the needs of your community. As always, have legal counsel review the policies and procedures before implementing them.

GENERAL

It is the policy of [Name of Municipality] to provide snowplowing and ice removal services:

- To provide safe traveling conditions for pedestrians and motorists,
- To reduce economic losses to the municipality and to businesses that can result from workers being unable to get to their jobs,
- To assist Police, Fire and Emergency Medical Services in fulfilling their duties, and
- To provide safe, passable roads and school bus routes.

SERVICE PRIORITIES:

The Department of Public Works has overall responsibility for snow and ice removal operations. As indicated below, other departments will assist in snow removal when necessary. Snow and ice removal activities take place according to following priority list:

ROADWAYS

1. **Hospitals, Fire station, Police station, and Schools** (Refer to attached map) -- The Department performs snow and ice removal to keep pavement as bare as possible at all times. Snow removal begins once snow accumulates to a depth of (number) inches. The Department will attempt to cover each area at least once every (number) hours unless the snow stops or does not accumulate to a depth greater than (number) inches. The frequency may increase under extreme conditions. Plowing will be from curb to curb.
2. **Arterial, Major roads and Major Intersections** (Refer to attached map) -- The Department performs snow and ice removal to keep pavement as bare as possible at all times. Snow removal begins once snow accumulates to a depth of (number) inches. The Department will attempt to cover each area at least once

every (number) hours unless the snow stops or does not accumulate to a depth greater than (number) inches. The frequency may increase under extreme conditions. Plowing will be from curb to curb.

3. **Main Roads** (Refer to attached map) -- The Department performs snow and ice removal to keep pavement as bare as possible at all times. The Department plows after a snow accumulation of approximately (number) inches or more in depth after completing major roads, main roads, and major intersections. Employees will spread salt at all intersections, STOP sign approaches, and approaches to major school crossings as they plow snow or as necessary. The Department will attempt to cover each area at least once every (number) hours unless the snow stops or does not accumulate to a depth greater than (number) inches. The frequency may increase under extreme conditions. If possible, employees will clear parking lanes and road shoulders.
4. **Residential Streets & Alleys** - The Department plows after a snow accumulation of approximately (number) inches or more in depth during normal working hours. When snowfall accumulation exceeds four inches, the Department will begin overtime operations to remove snow after completing snow removal on major streets, intersections, and collector streets. The Department will spread salt at all intersections, STOP sign approaches, and approaches to major school crossings in conjunction with the snow removal operations or as necessary.

Downtown

1. **Public Parking Lots** - The Department (or other designated department such as Building and Grounds) performs snow and ice removal in downtown parking lots during the evening hours to provide as bare as possible pavement at all times. Department employees remove snow and ice after they clear main roads, major intersections, and major roads.
2. **Sidewalks** - The Department (or other designated department such as Building and Grounds) will clear designated sidewalks in the downtown area during the evening hours if (number) or more inches of snow accumulate. Employees will remove snow in conjunction with parking lot snow removal operations.

Downtown sidewalks include (Specify the covered area).

Public Sidewalks

Adjacent property owners are responsible for removing snow and ice from all public sidewalks in accordance with City Ordinance (Specify the ordinance). (Title and department) is responsible for assuring compliance with the ordinance.

City Facilities

The Department (or other designated department such as Building and Grounds) will remove snow from parking lots at the following facilities during the evening hours after the accumulation of (number) inches or more. Ice removal measures will take place in front of all entrances and/or exits to public buildings as necessary. (For example, City Hall, Police Department, Library, etc.)

The Department will remove stockpiled snow from parking lots during the regular workday. The Department will also take ice control measures in parking lots as necessary.

List other areas and the departments responsible for them.

SAMPLE SNOW PLOWING POLICY

The **Superintendent/Director** of the DPW will issue the order to begin snow-plowing activities. When the **Superintendent/Director** gives the order, Department employees:

1. Begin plowing when the National Weather Service predicts snow to reach a depth sufficient to impede emergency vehicles. Plowing will usually begin when snow depth reaches about (number) inches and the forecast is for continued snow with predicted depth greater than (number) inches. Supervisors should call the Weather Bureau at _____.
2. Consider the moisture content of snow. "Dry," light snow can be over 6 inches to 8 inches deep before becoming a factor. "Wet" heavy snow can be a factor at 4 inches to 6 inches deep.
3. Plow priority routes to keep major roads and emergency service routes open.
4. Follow specified staffing and plow routes for the following:
 - Midnight to dawn shift: (Specify number of employees, pieces and types of equipment, service priorities such as major roads and intersections.)
 - Dawn to Midnight: (Specify number of employees, pieces and types of equipment, service priorities such as major roads and intersections. Include auxiliary departments, such as Parks, that may assist with snow removal.)
 - Salting application usually begins at (specify time) on major roads, major intersections, and main roads the same night. The dawn to midnight shift is responsible for lesser streets.
 - If the snow stops and crews do not have to return to major roads it takes the DPW approximately (number) days to clear [Name of Municipality]. Crews will clear municipally owned and operated parking lots after snow has stopped falling.

Salting to clear pavement follows approximately the same priorities as snow removal (See attached schedule).

Introduction

[Name of Municipality] currently performs snow and ice control for the following public facilities:

- Public streets and alleys,
- Public parking lots,
- Public sidewalks (snow removal only) depending on snowfall depth, and
- Parking lots and sidewalks at City facilities as listed above.

The Department uses (number of) employees and (number) pieces of equipment (see list below) to carry out the snow and ice control measures.

- Light duty trucks with front plows -- (number)
- Heavy duty trucks with front and underbody plows -- (number)
- Loaders -- (number)
- Salt spreaders -- (number)
- Dump trucks (hauling snow purposes) -- (number)
- Tractor -- (number)

Complaints

Citizens and other interested parties should direct comments and complaints about [Name of Municipality]'s snow and ice control policy and procedures to the Department of Public Works during regular business hours. However, if the Police Department receives a complaint during non-business hours, the Police Department should log the complaint and call one of the individuals listed below. The contacted person is responsible for investigating the complaint and, if appropriate, ordering corrective action:

[List names and title of individuals in the order in which the public should contact them.]

This individual will notify the Police Department of the actions taken.

Snow Emergencies

If a severe snowstorm occurs, [Title] will declare a “Snow Emergency.” The municipality will advise motorists to remove their vehicles from designated “snow emergency” routes. [Name of Municipality] may remove unattended vehicles of motorists who do not move them. During a declared “snow emergency,” [Title] will coordinate emergency snow and ice removal operations. This individual will coordinate all snow removal tasks using all available staff and equipment to accomplish necessary snow removal operations with the following priority:

1. Major public streets (arterial and collector)
2. Downtown public sidewalks and parking lots
3. Parking lots and sidewalks at:
 - City Hall
 - Library
 - Wastewater Plant and Water Plant

[List others]

4. Designated Public Sidewalks

Once operations are complete, [Title] will declare the snow emergency over and the DPW and other responsible departments will revert to normal winter operations.

Salting Operations

If conditions require it, [Name of Municipality] controls the accumulation of snow and ice using chemical methods. The application of salt provides safer conditions for pedestrians and motorists.

General:

[Name of Municipality] stores salt (sodium chloride or calcium chloride) at [provide location(s)].

If salting becomes necessary, the DPW Superintendent/Director will inform the supervisors on duty. The supervisors will call out the designated crews for salting. [Name of Municipality] has divided the (city, village, etc.) into designated salting areas. They are:

[List areas]

The Department has assigned specific crews and vehicles to each of the areas. The Department loads each spreader with salt. If a mechanical spreading device is in use, staff should cover it with a tarp to prevent the salt from getting wet and caking because of moisture. The crew then drives their assigned vehicles on the salting routes in their assigned areas.

If conditions are extreme, the DPW may switch and/or place traffic signals in the flashing mode so the salting vehicle can continue through intersections without stopping. Salt crews will use extreme caution in these circumstances.

Call out determination:

The purpose of the salting operation is to put down salt

- When there is freezing rain or sleet by themselves or mixed with snow.
- At the time of "black ice," or
- When a glazing snow pack occurs.

The DPW initiates the operation, notifying the appropriate crews. The Police Department may notify the Superintendent/Director of conditions that require salting. Conditions may vary depending on the location in [Name of Municipality]. Therefore, the DPW Superintendent/Director or designate must verify the condition before calling out the crews. If the Department receives requests for salting from other departments or individuals, the Superintendent/Director will evaluate the reported conditions for the need to salt.

Locations:

The Department performs salting operations using the same priority list as for snow removal. However, salting may only take place on approaches to controlled intersections, (stop signs, yield signs or signals), in school crosswalks, and on curves and hills. The length of the approach that the crew will salt depends on the amount of traffic using the approach. Major roads, schools, and emergency routes have first priority. The Manager of DPW has the authority to order salting for other locations.

Conditions:

The Department usually applies sodium chloride (rock salt) until the temperature reaches 20 degrees Fahrenheit. The amount of moisture in the snowfall and the temperature has a direct bearing on the effect of the salt. Below 20 degrees Fahrenheit, the Department may use a mixture of sodium chloride and calcium chloride. Calcium chloride works to a lower temperature of approximately – 30° F. Sustained temperatures below 0 degrees generally require the use of straight calcium chloride.

Snow Plowing Instructions

Operators shall not leave assigned routes or areas unless:

- The equipment is needed to help another plow that is stuck.
- The Supervisor in charge orders a change in route.
- It is the driver's designated relief period.
- The Police Department calls or unless you know it is an emergency (police car, fire truck, ambulance assist).

Drivers must follow these guidelines:

SEATBELT USE IS MANDATORY AT ALL TIMES! THIS INCLUDES PLOWING PARKING LOTS!

- Never chain plows down.
- Plow to the outside of streets, leaving snow in gutter if walk is right behind curb. Place snow on curb at all other locations.
- Push intersections clear on final pass through.
- Check equipment before every shift and during the shift when you return to the garage for your relief period. Check tires and plow blade height. Steel blade should be 1/2 to 3/4 inch above the street during travel. Rubber blade should ride on the street with weight on shoes. Operators should never allow the blade to ride directly on the ground. Allowing the blade to ride on the ground will cause the blade to wear out prematurely and may result in injury to the driver and damage to the equipment if the blade strikes a sewer cover/catch basin cover.
- Clean off lights when needed, especially on rear of equipment. Be sure warning lights are clear. Plow with spotlights directed so they do not blind traffic.
- Check windshield wipers.
- Plow to and from garage, if possible.
- Call in for radio check at start of shift.
- Report any defective equipment to your supervisor and complete an equipment work order. Never take out equipment that poses a hazard to you or to others.

If you have any questions or if we can help you with other areas of risk management, please contact us.



Important Telephone Numbers

MML Risk Management Services	734/662-3246 or 800/653-2483
Loss Control Services	800/482-2726

Note: This document is not intended to be legal advice. It does not identify all the issues surrounding the particular topic. Public agencies are encouraged to review their procedures with an expert or a competent attorney who is knowledgeable about the topic.