

# City of Fitchburg Snow and Ice Control Policies

## **Purpose:**

To provide safe roads, sidewalks, bike paths, and parking lots for the City of Fitchburg during the winter months (November through March) by operating an effective winter maintenance service, while controlling salt and other chemical use.

## **Goals for Snow and Ice Control Policies:**

- 1) Reduce the risk to the traveling public on city maintained roads, sidewalks, bike paths, and parking lots.
- 2) To support necessary emergency operations by police, fire, and ambulance services. Provide reasonably safe school bus routes and school zones. Provide reasonably safe Metro bus routes, bike routes and pedestrian street crossings.
- 3) Reduce economic losses to the community and industry caused by workers unable to get to their jobs or to make deliveries.
- 4) Minimize the environmental impact of winter by using the least amount of salt or other de-icing chemicals that is effective in clearing the roads, sidewalks, bike paths and parking lots..
- 5) Provide for more efficient, cost effective, and responsive winter operations on the part of the City of Fitchburg Public Works Department.

## **Background:**

The City of Fitchburg is located in Dane County Wisconsin, which is in the South Central portion of the state. The winter season generally runs from November to March with occasional snowfalls in October and April. A typical winter season is around 50 inches of snow; the largest seasonal snowfall ever recorded was 103 inches in 2007-2008.

The Dane County Highway Department plows all County and US Highways in Fitchburg. Private roads, parking lots and alley ways are plowed by the private property owners. Fitchburg Public Works - Streets division is responsible for all other roads in the city (see appendix 1). The city is divided into five plowing zones for roads (see appendix 2). Fitchburg roads and the level of maintenance are classified as follows:

- 1) **Class 1 (Major):** Major collectors and roads with higher traffic volume. Maintenance services are provided as appropriate under prevailing weather conditions with the goal of providing a pavement surface generally bare of snow and ice. Roadways may be pretreated with brine before major snow events and ice storms. Plowing begins when 1” of snow has accumulated, with salt and sand to be used as needed. Plowing shall be from curb to curb. Use of overtime to meet the above goal is authorized.
- 2) **Class 2 (Minor):** Minor collectors or main residential streets with moderate traffic. Maintenance services are provided as appropriate under prevailing weather conditions with the goal of providing a pavement surface generally bare of snow and ice in the center portion with enough width for one vehicle in each direction. A thin cover of snow along the edges of the road is permissible. Curves, hills and intersections with Class 1 roads may be pretreated with brine before major snow events and ice storms. Plowing begins when 1” of snow has accumulated with salt and sand to be used as needed. Use of overtime to meet the above goal is authorized. Additional clearing operations including curb to curb plowing shall take place during normal work hours unless authorized by the Director of Public Works.

- 3) **Class 3 (Residential):** Residential thru streets with minimal traffic. Maintenance services are provided as appropriate under prevailing weather conditions with the goal of providing a passable surface. Plowing begins when 2” of snow has accumulated with minimal use of salt and sand. Plowing shall be from the traveled portion of the roadway with a thin cover of snow permissible. Use of overtime to meet the above goal is authorized. Additional clearing operations shall take place during normal work hours unless authorized by the Director of Public Works.
- 4) **Class 4 (Cul-de-sacs and dead ends):** Residential streets that dead end. Maintenance services are provided as appropriate under prevailing weather conditions with the goal of providing a passable surface. Plowing begins when 2” of snow has accumulated with minimal use of salt and sand. Plowing shall be from the traveled portion of the roadway with a thin cover of snow permissible. Use of overtime to meet the above goal is authorized. Additional clearing operations shall take place during normal work hours unless authorized by the Director of Public Works.
- 5) **Additional Areas** Concrete bus pads, Bus shelters, Recycling Drop off Area, Median openings at pedestrian crossings. All work should be completed after road snow removal is complete and during regular work hours.

Fitchburg Public Works - Parks division is responsible for snow and ice removal for all city owned sidewalks, along with certain Parking lots, and Bike paths (See Appendix 3), These areas are classified as follows.

- 1) **Class 1 (Major):** City Campus and Fire Station parking lots, all city owned sidewalk, and School Bike path. Maintenance services are provided as appropriate under prevailing weather conditions with the goal of providing a pavement surface generally bare of snow and ice. Parking lots may be pretreated with brine before major snow events and ice storms. Plowing generally begins when snow has stopped accumulating, to be finished not later than 6:00 p.m. of the day after the same has ceased to fall or accumulate; provided that when ice has so formed on the listed areas above that it cannot be removed, then the city shall keep the same effectively sprinkled with sand, salt or other suitable substance in such manner as to prevent the ice from being dangerous, until such time as it can be removed, and then it shall be promptly removed. Use of overtime to meet the above goal is authorized.
- 2) **Class 2 (Minor):** Select park parking lots and Bike Paths (see Appendix 3), along with Ice Rinks. Maintenance services are provided as appropriate under prevailing weather conditions with the goal of providing a passable surface. Plowing generally begins when the snow has stopped accumulating and after all Class 1 areas are complete with minimal use of salt and sand. Limited use of overtime to meet the above goal is authorized, unless otherwise directed by the Director of Public Works.

### **Brine, Salt, and Sand General Guidelines:**

#### ***Brine***

- Pretreat major roads, hills, curves, major intersections, City Hall and Fire Station parking lots with brine when possible.
- Apply only with stream nozzles, do not fan spray.
- Use a 23% brine solution.
- Apply during non-rush hour traffic.
- Do not use under blowing conditions.
- Do not use before predicted rain.

- Do not apply if the pavement temperature is below 10° F.
- For first application after a long dry spell, apply spray at half rate.
- Over spraying brine will cause the roadway to become slippery.
- See Pretreatment table (Table 1) for application rates.

***Salt***

- Plow before applying salt.
- Apply salt at a lower rate in areas pretreated with brine or wetted salt.
- Do not apply salt when pavement temperature is below 15° F.
- Apply salt at a lower rate in high traffic volume areas.
- See De-icing table (Table 2) for application rates.

***Sand***

- Use sand for short term traction only.
- When using sand/salt mix the ratio of sand to salt should be 40% sand, 60% salt.
- See De-icing table (Table 2) for application rates.

**Between Snow/Ice Events:**

- Clean storm inlets of packed snow or ice.
- Plow any remaining snow on Class 3 or 4 roads from curb to curb.
- In cul-de-sacs, where conditions warrant, push snow up into higher piles in center.
- Wing out rural roads.
- Finish plowing any remaining parking lots or bike paths (see Appendix 3).
- Complete any needed truck, equipment, or maintenance repairs.
- Push Snow back at intersections to improve visibility.

**Before the Season Planning:**

***September:***

- Review policies.
- Check for new construction/subdivisions/roads/sidewalks/bike paths/parking lots.
- Make sure all manholes are chipped and tarred in place for roads that were resurfaced over the summer.
- Inspect ditches, culverts and inlets and make sure no obstructions are in place in order to allow for the spring melt.
- Remove snow traps such as tall grass that may catch and accumulate snow.

***October:***

- Inspect equipment, repair or replace as needed.
- Inspect all trucks and perform any needed maintenance.
- Calibrate augers and spreaders.
- Test brine tanks and sprayers.
- Identify areas prone to drifting and create an action plan to solve the issue.
- Have crews drive assigned routes, identify any hazards, critical areas, and determine the most efficient way to cover the route.

***November:***

- Review application rates.
- Review overtime policies.
- Review safety policies with crew.

**Resources:**

Current weather: <http://www.ssec.wisc.edu/localweather/>

Pavement temperature: <http://www.dot.wisconsin.gov/travel/gis/rwis.htm>

Approved by Board of Public Works, December 7, 2009

Approved by Board of Public Works, February 21, 2011

Approved by Board of Public Works, December 19, 2011

Approved by Board of Public Works, October 21, 2013

Table 1: Pretreatment Application Rates for Salt Brine

Condition	Gallons/Lane Mile
Before sleet/freezing rain/ice	20-40
Before light or moderate snow	20-50

Table 2: De-icing Application Rates

Pavement Temp and trend (↑↓)	Weather Condition	Actions	Lbs/lane mile (24' two lane road)		
			Brine	Dry Salt	Sand
>30° ↑	Snow	Plow, treat intersections only	80	100	0
	Freezing rain	Apply chemical	80-160	100-200	0
30° ↓	Snow	Plow & Apply chemical	80-160	100-200	0
	Freezing rain	Apply chemical	150-200	180-240	0
25-30° ↑	Snow	Plow & Apply chemical	120-160	150-200	0
	Freezing rain	Apply chemical	150-200	180-240	0
25-30° ↓	Snow	Plow & Apply chemical	120-160	150-200	0
	Freezing rain	Apply chemical	150-200	180-240	400
20-25° ↑	Snow or Freezing rain	Plow & Apply chemical	160-240	200-300	400
	20-25° ↓	Snow	Plow & Apply chemical	200-280	250-350
Freezing rain		Apply chemical	240-320	300-400	400
15-20° ↑	Snow	Plow & Apply chemical	200-280	250-350	0
	Freezing rain	Apply chemical	240-320	300-400	400
15-20° ↓	Snow or Freezing rain	Plow & Apply chemical	240-320	300-400	500 for freezing rain
0-15° ↑↓	Snow	Plow & treat w/blends, sand hazardous areas	0	0	500 - 700 spot treat as needed
< 0°	Snow	Plow & treat w/blends, sand hazardous areas	0	0	500 - 700 spot treat as needed

For an 18 foot road multiply rate by 0.75

