

This section reviews some basic principles about removing snow and challenges us to look ahead at improving our equipment and techniques in snow removal.

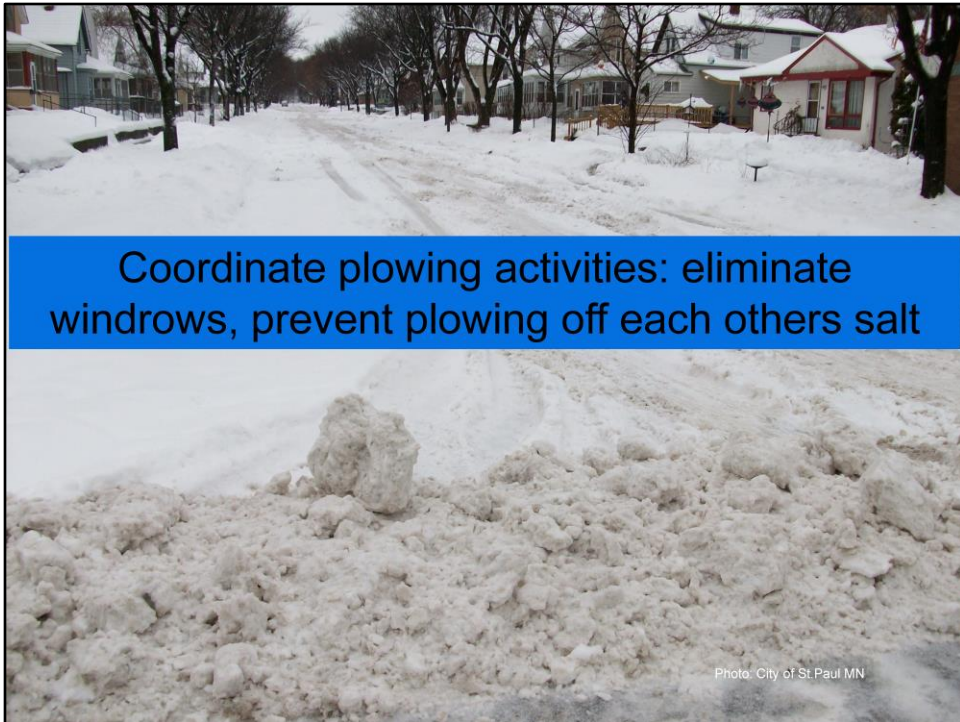
Always plow before applying deicers
Better mechanical removal = less salt



Probably the most basic rule of thumb is to never apply salt without first physically removing the snow.

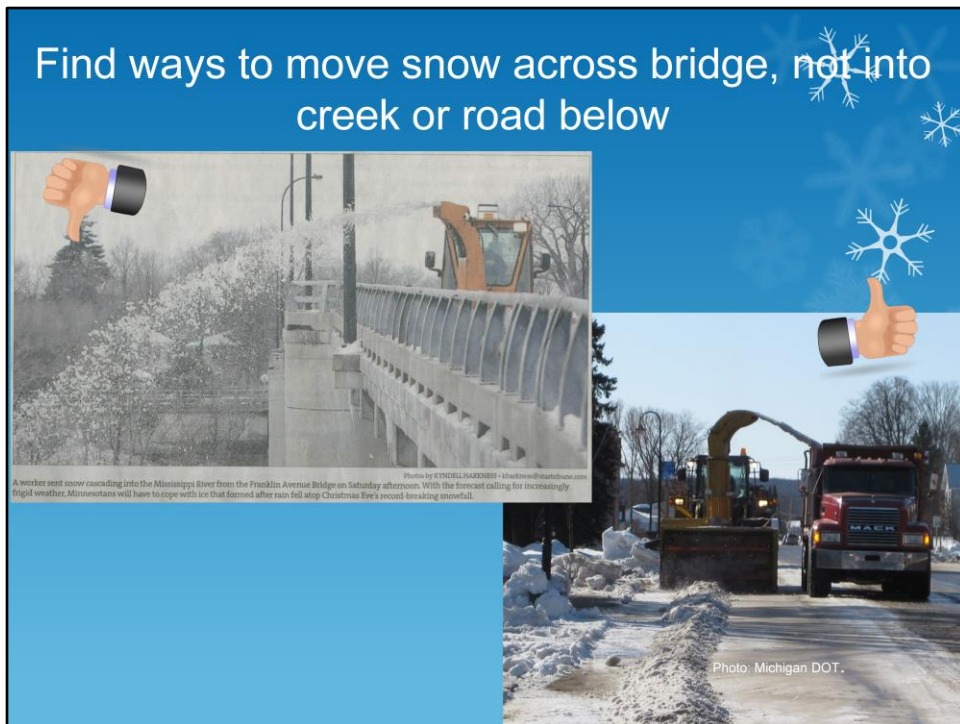
Blades work good for thicker amounts of snow, brooms and blowers for lighter amounts of snow.

We should challenge ourselves to avoid applying chemicals to a surfaces where physical snow removal has not taken place. This is a wasteful practice when we consider the permanent impacts salt creates in our freshwater systems.



Communication goes along way to improved snow removal and efficient salt use.

A great example: One county invited all cities within their county winter maintenance training. All plow drivers went through the same training. After lunch the drivers were to get into small groups so that those with intersecting routes met each other and talked about the best way to not cause problems for each other in the upcoming months. This was a big step forward into improved relations between the organizations.



Source MI DEQ:

The disposal of snow in Michigan is regulated under various laws including Part 89, Littering; and Part 31, Water Resources Protection of the Natural Resources Environmental Protection Act (NREPA), PA 451 of 1994, as amended. Part 89, Littering, prohibits the dumping of litter on public waters, including watercourses, shores and beaches, bodies of water, including the ice above the water. Since snow may contain litter consent from the DNR District Law Supervisor must be obtained prior to dumping snow into lakes and streams.

Aggressive plowing pays off in less salt

“Even if $\frac{1}{2}$ inch,
ALWAYS
plow when
applying
chemical...”

City of
Eagan, MN



Salt use dropped from
average of 170 tons per
event to 88 tons per event

City of Eagan MN: Tom Struve
SAME level of Service
Reduced salt usage from average of
170 tons per event to
88 tons per event in 2009

Training

Calibrate, calibrate, calibrate!
USE the ground oriented application equipment! (Trust it!)
Even if $\frac{1}{2}$ ", ALWAYS plow when applying chemical

Many plow and blade innovations
What have you tried?
What works the best for you?



Photo: Fortin Consulting



Photo: Brad-Knight

Clear roads research website has a few research **studies** on blades and plows such as Multiple blade snowplow project and Carbide blade final report

www.clearroads.org

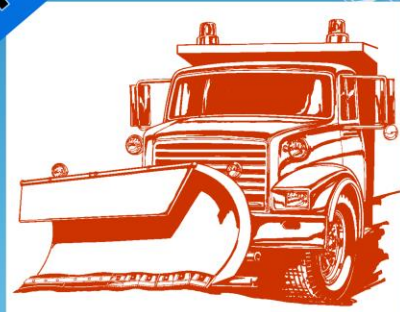
In the next slides there are just some examples of different blades/plows,/cutting edges and the trainer and students can talk about what has been tried, what works and where is this leading us.

Segmented Cutting Edges

- More flexibility to get into ruts or dips in road.
- More even wear on blade
- Less vibration for operator



Why not try it?

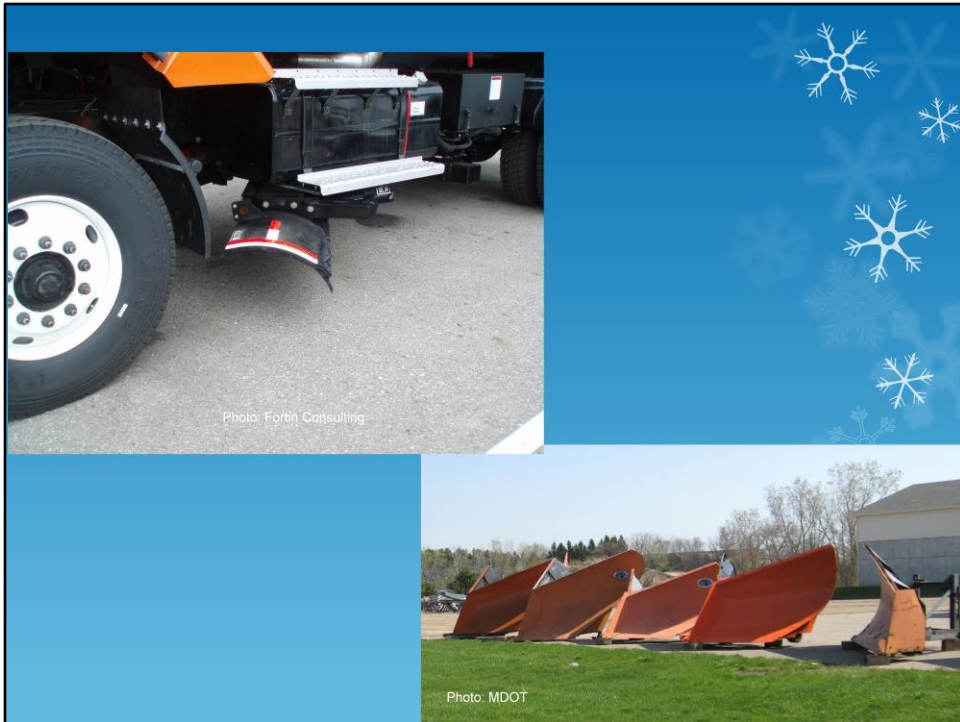


The segmented blades have been given a high rating for improved scraping, more even wear and driver comfort. It would be worth it to try it on one of your trucks and see how you think it performs. If we can scrape better we can salt less.

IOWA DOT : “Field Test Results of Prototype Plows with Multiple Blades 2007” is the source of the above photo. Note the piece of rebar under the blade. This illustrates that the blade is flexible.



Wing plows come in a variety of configurations



Underbody blades give better down pressure than most other options.

The more you plow



The less you have to melt!

The tow plow is an amazing site to be seen. It has been growing in popularity.