

- Be sure to properly size the dry volume capacity in the hopper versus liquid holding capacities when purchasing on-board prewetting systems. It is vital that the total truck weight capacity is considered, as liquids add considerable weight to the overall load.

## Direct Liquid Application for Deicing

Straight liquids are most commonly used for anti-icing, pretreating salt piles and prewetting on board the truck. However, it is becoming more common, especially in warmer winter conditions, to de-ice with straight liquid product. This is an advanced winter maintenance activity. Called “direct liquid application,” or DLA, this deicing technique is more difficult and should only be attempted by those very familiar with the use of liquid deicers in other areas of winter maintenance. It is possible to create a more slippery surface if straight liquids are used improperly for deicing.

- Attempt liquid-only deicing only after you have mastered the anti-icing and prewetting uses of liquids, and have the proper equipment for the liquid deicing operation.
- Having sufficient pressure on the streamer nozzles, so that the liquid penetrates the snow or ice and spreads out below the snow and ice, is the key to effective deicing with liquids.
- Spraying a liquid deicer on top of compacted snow or ice can increase the slipperiness of the surface.

## **After the Event**

Learn from each storm. Each event provides an opportunity to evaluate what was done, how well it worked and what could be changed to improve operations. Information exchange is the best way to speed up positive changes in winter maintenance. At the end of each event, post or discuss the results of your operation so the entire crew can be informed. When the entire crew is informed and included, change happens faster. Examples of what to track and discuss include: driver statistics such as route length, the type materials used, the amount of material used, and the recovery time. Other things to consider might be the liquid to granular ratio, the type of plow blade, new road surface or other new equipment and/or procedures being tested.

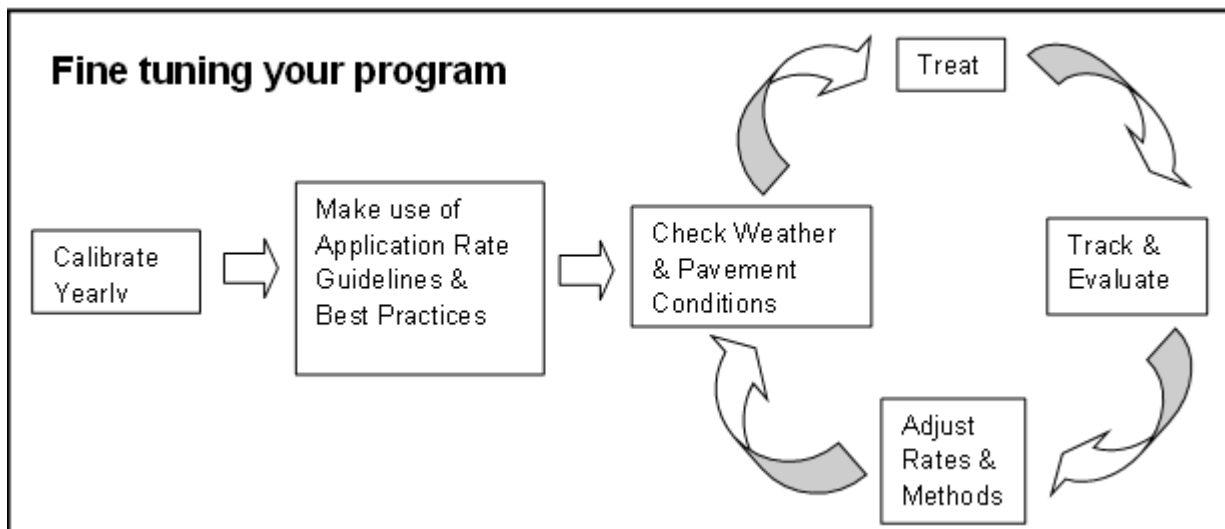


Figure 11: Maintaining a Progressive Winter Maintenance Operation

### Key points for after the event

- Use forms such as those shown in the Appendix E of this manual to record and track your material use.
- Report any hazards such as low hanging branches and raised utilities.
- Ensure that all unused granular salt and salt/sand mixtures are stored properly.
- Refine your procedures and material use based on the “end of storm” meeting, and observations from operators.
- Wash vehicles after ensuring they are as empty as possible.
- Direct the wash water to collection/reuse areas or the sanitary sewer system. Do not direct wash water to septic systems or storm drains. Michigan’s DEQ Water Resources Division provides a guidance document on truck washing at municipally owned truck stations. See Appendix D, under salt storage and handling.

### Key points for after the season

- Ensure that all unused granular salt and salt/sand mixtures are stored properly and records are kept of the amount of each product remaining.
- Clean and maintain truck tanks, brine making systems and pumps according to manufacturer specifications.