

Good ideas from winter maintenance workshops

Nobody knows the tricks of snow plowing better than you who do it. We often hear good ideas for removing snow at our T.I.C. workshops. If you've attended, you may have heard these ideas first hand, asked questions, and shared some of your own tricks. Here are some winter maintenance ideas.

Pre-snow planning

Planning plow routes, setting priorities, and putting plans on paper makes you more efficient. It also helps elected officials answer those inevitable constituent complaints.

Elkhorn's street maintenance folks developed their plan seven years ago. They started with a sample plan from UW-Extension Engineering's **Snow and Ice Control** course. It took about a week and a half of work to modify it for Elkhorn. The plan categorizes all streets as 1) *priority* (plowed first and maintained throughout a storm), 2) *secondary* and 3) *neighborhood*. To address citizen complaints about waiting to get plowed out, the plan has trucks start plowing from different points, rotating from storm to storm.

Each plowing route (with drawings) is in the office computer and in the truck. This makes it easy for a substitute driver to take over a route. While some routes look bigger than others, says Michael Early, Elkhorn's Streets Foreman, they all take about the same plowing time. Road width and drifting make the difference.

The plan classifies snowstorms by type and tells what to do for each. It lists all equipment and tells how to plow cul de sacs and remove windrows downtown. It lists dos and don'ts (like don't help push out stuck cars) and what equipment a truck must carry as required by their insurance—fire extinguishers and safety kits, for example. The plan gives everybody guidance—bosses and drivers. And the insurance company loves it, Early says.

Each year streets administrators update the plan based on their experience and present it to elected officials. In fall they hold a half-day snow school and go over the plan with everybody—including backup drivers from other departments. All regular plow drivers drive the route before the first snow.

❄️ Right turns clear streets faster Howie Krieski, Stevens Point's superintendent of services, has developed a plowing plan in which his wingplow-equipped trucks make mostly right turns. The driver plows all the way around each block instead of straight across a section. "It saves time and clears the intersection with one pass by dumping the snow at the curb as it goes around the corner," says Krieski. Since the method requires backing across streets, it is best used at night when there is little traffic or on lightly traveled streets.

❄️ Training makes a difference Two-man plow teams and driving apprenticeships are history, thanks to tight budgets. And there's only so much you can learn on a parking lot obstacle course. So how do you train new plow drivers? In Portage County all new drivers are accompanied by an experienced person for their first 40 hours behind the wheel.

"Legally, if they have a CDL you can turn them loose," says Dale Peterson, the county's state patrol superintendent. "But there are a lot of little things that they need to learn through experience." Things like: how fast to plow a shoulder, slowing down for bridges, how fast to drive while salting, and how to take the wind into account when salting.

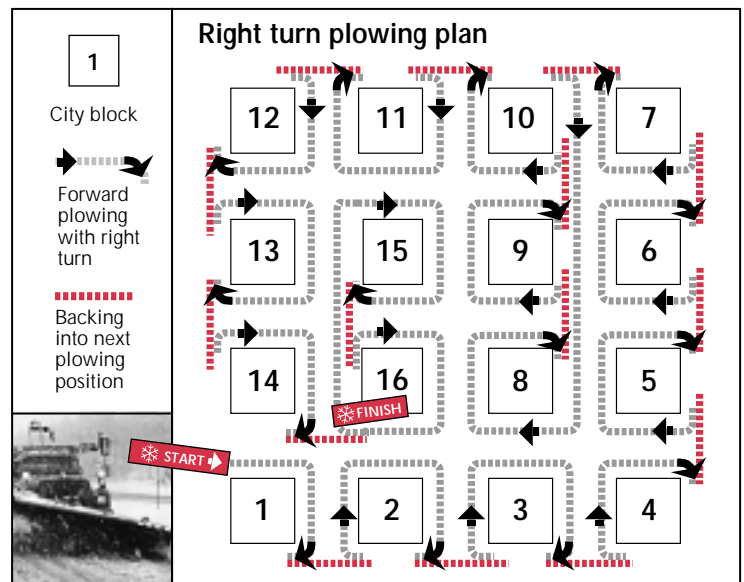
The two talk about the route and its problems. The experienced driver charts the trips and judges when the new driver is fit for duty. Peterson estimates that 40 hours equals about 10 snowstorms. When staff levels and snow conditions permit, they assign the training crews to work straight time rather than overtime.

Plowing advice

Recent Winter Maintenance Workshop participants shared many good ideas about how to plow efficiently.

❄️ Plowing cul de sacs Cul de sacs, with their many drive-ways and limited terrace space, are a plowing nuisance. In West Bend the city doesn't plow them at all; private contractors do. They come in with loaders, which are more maneuverable than trucks, and mound the snow in the cul de sac's center. When the piles get too high they truck the snow away. Contractors charge \$75/hour and it takes them about 15 minutes to plow each of West Bend's 65 cul de sacs, according to Streets Superintendent Richard Heisler.

Plowing cul de sacs is easier in the Town of Vernon near Waukesha because mail and newspaper boxes are grouped at the entrance. "It gives us more room to move and store the snow and we don't blow the boxes over with snow or the



The driver works a multi-block section, starting at #1, plowing around the corner just till the snow is distributed through the radius, then stops and backs across the street (red line). At this point the driver begins plowing the next block. After all the blocks are done, the entire perimeter gets plowed.

plow any more," says Lee Titze, town director of public works. Box placement is in the town's subdivision code.

Town of Vernon no longer plows private driveways except in extreme emergencies, Titze says. When there were more requests for the service than they could fulfill, the town quit doing it. The town newsletter let everybody know.

❄️ Parked cars To deal with cars parked in the plow path, Titze has another trick. The town has no police department, but Titze can legally write citations. The town board approved ordinances against parking in snow routes, private plows leaving snow windrows in streets, garbage removal, and other nuisances, then deputized officials to enforce them.

Tickets are \$25. If they aren't paid, the town asks WisDOT to restrict drivers license renewal or car registration. "I put 12 to 15 warning tickets on illegally parked cars at the beginning of every snow season," says Titze. "And then usually I only have to give about one actual ticket." Titze also has the authority to have the vehicle towed.

❄️ Wing plows clear urban streets Although some people are still reluctant to use them, wing plows are working well on the urban streets of Stevens Point, West Bend and Portage County.

"We bought our first one in 1987 and the operator reluctantly began to use it," says Richard Heisler of West Bend. "He quickly began to see its benefits. Now all 17 patrol trucks are equipped with wings." Drivers realized that the wings cut plowing time and made the job easier, especially in clearing intersections. West Bend's efforts to level manholes has also helped. (See story in *Idea Exchange*, page 2.)

In Stevens Point wings clear most city streets in two passes instead of three, says Howie Krieski. A fiberglass rod mounted on the wing end helps drivers judge its distance from the curb or parked cars. Point's plow drivers also were reluctant at first. "Now you can't get the wings away from them!" says Krieski. They don't use the wings on gravel streets till they are frozen, he says, to preserve the surface.

❄️ Plowing shoes Portage County saves wear on wing blades and conserves gravel shoulders by fitting wings with commercially available plowing shoes. The \$50 metal piece is bolted on the plow's bottom to reduce pressure on the blade. "They're reasonably priced compared to the volume of shoulder gravel you would lose otherwise," says Dale Peterson of Portage County. In West Bend they put protective shoes on the outside edge of the wing and both edges of the front blade. "The wear goes on the inexpensive shoe rather than on the moldboard plow," says Richard Heisler.

❄️ Underbody blades, pro and con Using underbody blades cuts salt use and gets slow-moving graders off the road, says Dale Peterson, state patrol superintendent for Portage County's Highway Department. The extra downward pressure, compared to front-mounted plows, helps them bite through the ice, he says. That pressure also wears the blades out so they have to be replaced after each storm, he admits. The county has underbody blades on five trucks used to

maintain state highways and plans to put them on all major salt routes eventually.

"They're real 'knee jammers,'" says Jim Harer, St. Croix County patrol superintendent. "They're really only useful on one or two storms a year, and the rest of the time they add weight and bulk to the truck." In his relatively rural county they prefer using graders with serrated blades to remove compacted snow and ice since salt sits in the grooves made by the blades and quickly cuts through to the pavement.

Spreading and wetting sand and salt

When people see sand on the roads, they can tell that maintenance is being done, says Jim Harer of St. Croix County. He uses sand mixed with 5% to 10% salt most of the time on county roads. The spreader located at the inside corner of the truck is set to turn very slowly. Traffic action quickly kicks the sand into the travel lanes. They spread the sand more widely on hills and curves and at intersections.

Automatic controls help Stevens Point drivers spread salt and sand more economically. "We've really noticed a savings in our use of salt and sand," says Howie Krieski. This is the fourth year they've used the controls on their trucks. While it took the drivers a while to get used to the new way of spreading, the better control is worth it.

Using pre-wetted salt along with automatic spreaders makes salt use even more efficient, according to Portage County's Dale Peterson. Wet salt sticks to the ice instead of bouncing into the ditch so trucks can drive faster while applying it. Wetted salt starts to work faster, and wetting it with calcium chloride helps it work better in colder temperatures.

They wet the salt in the loader bucket while loading the truck. On the newest equipment, truck-mounted brine tanks wet the salt as it leaves the chute. Peterson likes the new brine tanks because they are easy to clean after the storm.

Keeping storm records

So, how did yesterday's plowing operation go? How many trucks were on the road? How long did it take to clear the roads? You're so busy getting the job done, it can be hard to track the details. Yet, the public is interested and reporters often ask these questions. If serious accidents occur, this information will be helpful if a lawsuit develops. The data also can help with later snow plan reviews.

In Stevens Point they fill out a simple form after each storm event. It includes beginning and ending times for the storm and for plowing salt routes and regular routes, along with current and forecast temperatures, and whether salt or sand was used. There's also room to note any special occurrences.

If you'd like more details on these ideas, contact the sources: Michael Early, Elkhorn, 414/723-2298; Jim Harer, St. Croix Co., 715/796-2227; Richard Heisler, West Bend, 414/335-5060, Howie Krieski, Stevens Point, 715/346-1540; Dale Peterson, Portage Co., 715/345-5230; Lee Titze, Town of Vernon, 414/662-3001. For a copy of Stevens Point's snowfall data reporting form, contact the T.I.C. Use the form on page 7, or call 800/442-4615.