

Idea Exchange

Diversity is the way to go with mowing equipment

"What we want is diversified types of mowing equipment," says Tom Dahlke, Waushara Cty Highway Commissioner. "We have 2- and 4-wheel drive tractors; two gang, side and rear mount mowers, flail-type and rotary-type. They all have different advantages." Dahlke was the shop foreman before becoming commissioner so he appreciates good equipment. Here is a summary of what he's chosen for managing roadside vegetation.

Tractors

"We use all John Deere tractors," Dahlke says. "Parts and service are available nearby and they have been very reliable over the years." The county has eight tractors with mowers to maintain 499 miles of county and state roads.

All tractors have seatbelts, canopies and rollover protection structures but no cabs. Cabs drive the cost up and the glass is at risk from branches when the mowers work in ditches and right of ways.

The county uses both 4-wheel drive and 2-wheel drive tractors. The 4WDs go better in wet or uneven ground, but they cost more initially and to run, and they weigh more. The extra weight can cut into softer soils and leave ruts. The 2WD tractors work more on state highways where they don't go as far off the road because the state limits mowing.

Dahlke prefers hydraulic drives for running the mowers now that tractors have them at both side and rear. They are phasing out their power take-offs since they require a lot of maintenance.

Mowing equipment

"We have a good selection of mowers so we can take on the different conditions on the county's roadsides," says Dahlke. "We like to have a mix of 2- and 3-blade rotary mowers because they can cut bigger brush farther off the road. Flail-types we use more on the state highways, where there's less brush." They also have some rotary mowers mounted on an arm to mow behind guardrail and on slopes. Most are Tiger Mowers, but Dahlke says he sets specs then chooses the lowest bidder.

Mowers take a beating on the roadside, so they need frequent maintenance to blades, bearings, gear boxes, PTO shafts, etc. The work is done in-house and they keep the mowers 10-15 years.

The county also has a "brush hog" that mounts on their back hoe for cutting bigger brush. "We use it in the winter," says Dahlke. "The brush cuts a lot nicer when it's frozen."

You can reach Tom Dahlke at 920/787-3328 for more information.



A mower mounted on an arm helps maintain vegetation behind guardrail.



The growing season will be here soon. What's your policy about managing vegetation? Have you reviewed it lately for yourself and with your crew? "Often we don't realize that how we maintain the roadside is just as important as fixing potholes, filling cracks, and maintaining the shoulders in protecting the facility and providing a safe, pleasant experience for drivers," says Dick Stark, WisDOT landscape architect.

A mowing policy should address driver safety, vegetation management and health, and operator safety. Here are some recommendations and reminders from Stark:

Sight lines Cut vegetation so drivers can see traffic signs and on-coming traffic at intersections. As a rule of thumb, mow out a triangle with sides 150-300 feet long on the approach road and about 300 feet long on the crossing road. If the area is below grade and vegetation won't block the view, you can skip mowing.

Healthy turf Tight budgets mean you will likely mow your roadsides just once or twice a season. It's tempting to give the grass a "buzz cut" so it stays trim-looking longer. However, mowing short can work against you by reducing root systems and weakening the entire plant. Mowing to 6 inches or longer will keep plants healthier. They will look better and control erosion more effectively. Another advantage of mowing long is that the

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Crossroads

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mower is less likely to turn rocks or other debris into missiles.

Mowing slopes It seems strange but mowing when the ground is frozen can help prevent damage to fragile roadside slopes, especially sandy ones. If slope damage is a problem, consider whether they really need mowing at all. Staying off steep slopes protects the vegetation and prevents erosion, and it helps keep operators safer, too.

Weed control Mowing short, especially when it exposes bare ground, lets invasive species gain a foothold. Healthy plant roots and tops discourage weeds, and keeping weeds out is a lot more effective than trying to get rid of them later. In most cases, mowing will not be effective at controlling weeds. It can even make them worse in species that can sprout from the roots.

"On DOT's roadsides, native grasses and wildflowers have grown up in unmowed areas," says Stark. "They are more robust because they're best adapted to local conditions, and do a good job of warding off weedy invaders where they're well established."

Clear zone Keep the area next to the road free of larger vegetation (trunks over 4 inches in diameter) so errant vehicles have a safe recovery area. Four inches is about the largest trunk that will break off when a vehicle hits it, rather than causing severe damage and injury.

Herbicides Mowing, cutting, and herbicides are common ways to control woody plants on roadsides. Mowing and cutting work in the short term but may introduce problems. When mowers shred woody stems instead of cutting cleanly, more surface area is exposed to invading insects and diseases. These can spread to desirable plants nearby.

On some species, cutting can produce more stems than before. Often, herbicides will control more efficiently, longer, and at less cost than cutting. One product, Krenite-S, is applied to foliage just before it begins to turn color in the fall. It does not cause brown-out but prevents the plant from leafing out the following spring.

Basal bark treatment involves spraying herbicide all around the lower stem. It can be done at any season but has the advantage that it can be applied in cold weather when plants are dormant and crews may have more time. Several products can be used. (Garlon 4 and Chopper are two.) This method works best on stems smaller than 3-4 inches in diameter. Use the "hack and squirt" method on larger trees: cut into the bark's cambium layer all around the trunk and squirt herbicide into the open-



Mowing long, to 6-8 inches, keeps desirable plants healthier and discourages weeds.

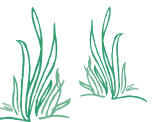
ings. Sometimes the chainsaw method works best. Prevent resprouting by treating the stump with herbicide. The product must be applied quickly to be effective. Even a day later may be too late.

Operator Safety "If you don't have roll-over protection on your tractors, get it!" says Stark. Roll-overs can occur even on fairly mild slopes, or a wheel can drop into an unmarked culvert entrance and flip the tractor.

Wildlife Roadsides are home to many wildlife species. By not mowing from April 1 to July 15 except where necessary for safety, you can let them complete their nesting cycles undisturbed. WisDOT follows this policy.

Aesthetics "Many people like the manicured look, but we receive more comments from people who appreciate the varied forms, colors and textures of trees, shrubs, wildflowers, and grasses in the unmowed areas," says Stark. If your policy is to leave some roadside areas unmowed, they should look intentional. Gently flowing, curved lines are more pleasing than jagged, interrupted lines which viewers find disturbing and unpleasant. "It may help the operator if he can visualize the unmowed area as the positive rather than the negative part of the roadside scene," Stark advises.

Dick Stark presented this and more information on vegetation management at an ETN session on Right of Way Maintenance last October. If you have questions, you can reach him at: 608/266-3943 or richard.stark@dot.state.wi.us.



Flowing, curved mower paths make roadsides more attractive.