
Welcome
Alex Fuchs
PHOTOGRAPHY

Sensible Salting

Best Management Practices (BMP)

Why do we salt the roads?

- To maintain safety for the traveling public.

Why should you utilize Sensible Salting?

- To minimize the unnecessary use of salt which in turn reduces the unnecessary release of chlorides into the water.

Why should you implement Sensible Salting?

- More Effective, Efficient, Equitable & Environmentally Friendly Snow & Ice Control

McHenry County Sensible Salting Workshop:

- 11 Years in McHenry County (2009)
- APWA IL Road Scholar Program, Effingham IL (Every 3 years)

Other Local Workshops to Attend:

- Lake County Deicing Workshop
- Kane County Deicing Workshop
- DuPage County Deicing Workshop

Classes will:

- Expand Knowledge of Preparation and Training
- Increase Understanding of Winter Weather
- Better Use Traditional & Alternative Chemicals
- Consider What Equipment is Available
- Enhance Communications With the Public
- Improve Current Training Methods/Calibration

The world has greatly evolved in the past 20 years… What does that mean for winter operations?

- Technology
- Equipment
- Communication
- Chemicals
- Weather
- Internal Company Practices

Is your company promoting new ideas and techniques? What are they?

Good Salt Storage

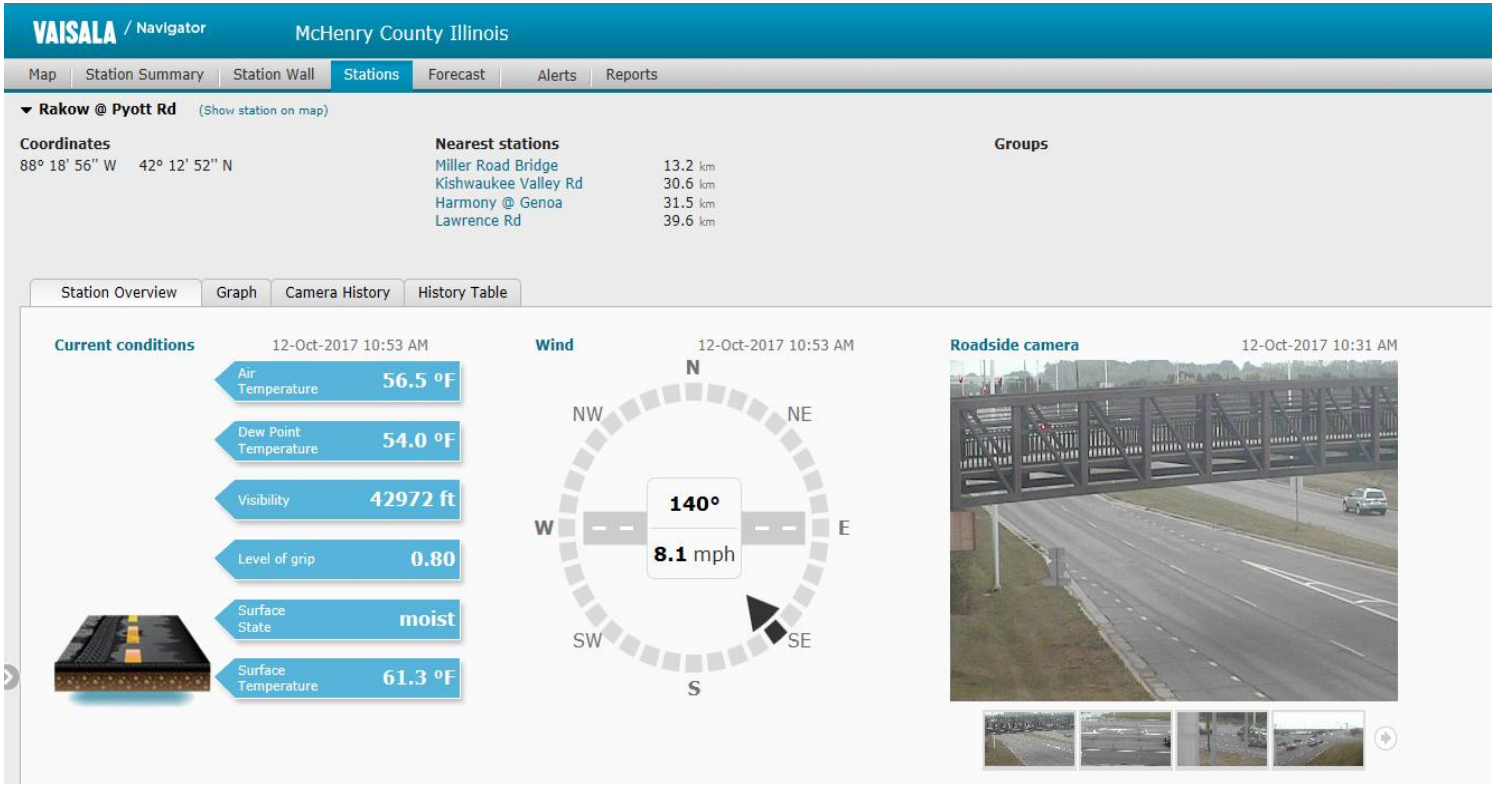
- Inside storage
- Sufficient capacity
- Outside piles covered
- Impermeable pads
- Good housekeeping

More Visibility & Scrutiny By Public

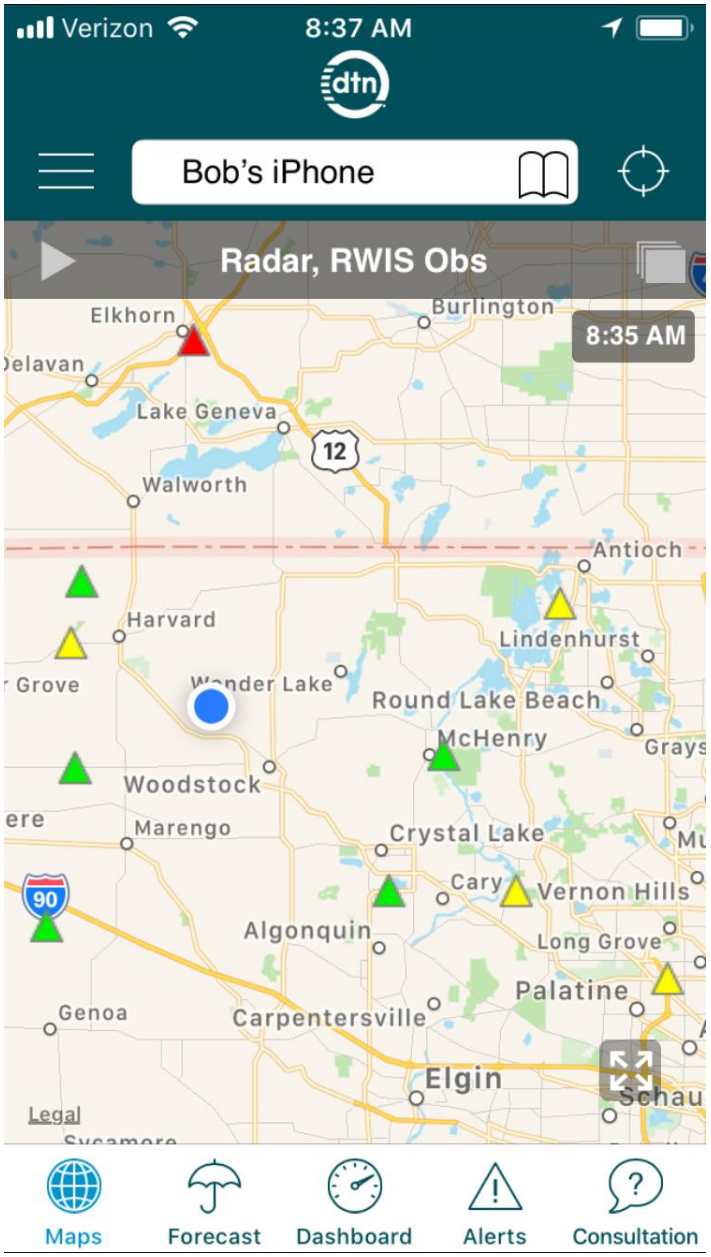
Public Perception

Real Time Information

RWIS stations



Real Time Visual Images As Well



BENEFITS IN YOUR TOOL CHEST

Road pavement sensors
Infra-red thermometers

Snow Fence

- Snow fences reduce the need for additional road salting
- Blowing snow is a big cause of ice on roads, because it melts onto surfaces that have been cleared, stealing the solar heat surfaces may have absorbed during the day
- Road surfaces protected by snow fences routinely stay about 15 degrees warmer than unprotected roads

SNOW FENCE
WHY??

Sample Payment Calculation

Since the price of corn fluctuates substantially from year to year payments to farmers will be based on a per acre basis (length and width of the living snow fence). Payments to farmers are currently set at $1,000 per acre.

Here are some examples:

Leaving 12 rows of corn (30 inch row spacing) for 2000 feet is the equivalence of 1.3 acres. Therefore the payment would be $1,300.00

Leaving 16 rows of corn (30 inch row spacing) for 1100 feet is the equivalence of 1 acre. Payment would be $1,000.00

At the end of the contract term (March 1) the farmer is allowed to harvest any of the remaining corn for themselves which could yield an additional 50 to 60 bushels.

Signs recognizing participating farmers will be provided at the farmers request.

In Cooperation With:

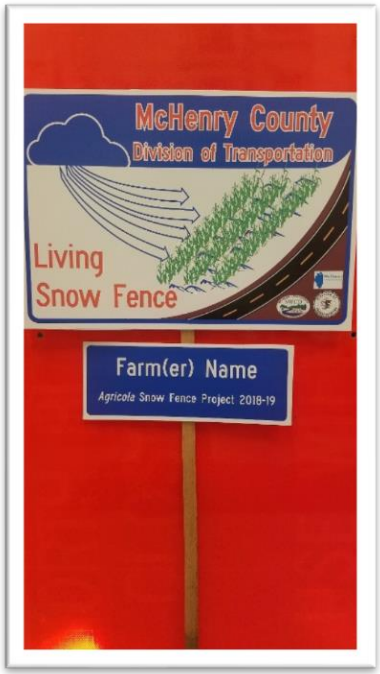
McHenry County Farm Bureau

McHenry-Lake County SWCD Soil & Water Conservation District

McHenry County Division of Transportation

MCHENRY COUNTY DIVISION OF TRANSPORTATION
16111 Nelson Road
Woodstock, IL 60098

MCHENRY COUNTY LIVING SNOW FENCE PROGRAM



2018-2019 Winter Season Kishwaukee Valley Rd.

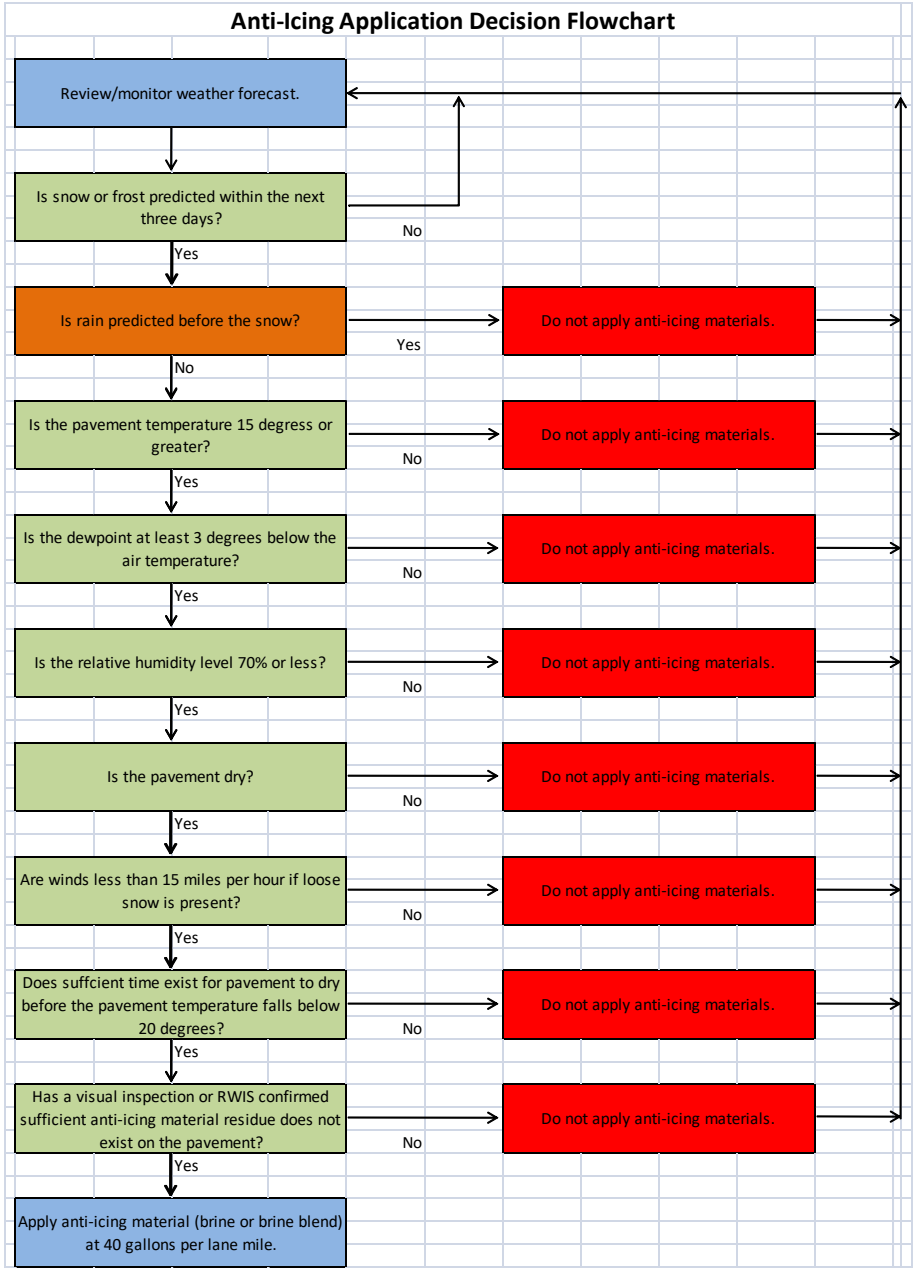
Brine Making, Blending & Anti-icing

Salt Brine and Liquid Chemicals

When To Anti-Ice

- Scheduled- Bridge decks
- Frost is predicted- Bridge decks, hills, curves, shaded areas
- Snow forecasted- As much as possible
- Weather service treatment recommendation

Anti-Icing prevents snow from freezing and bonding to a surface.



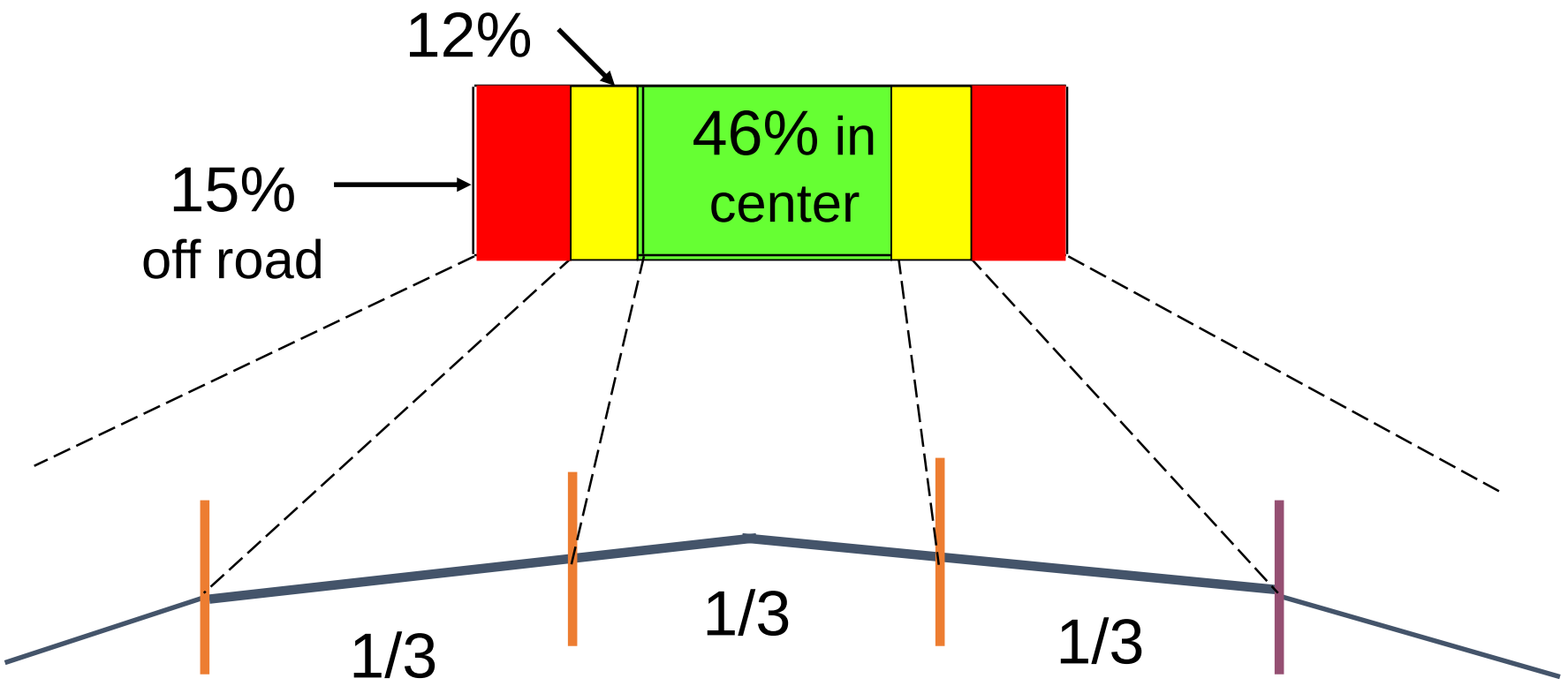
Want Your Material To Work?

Get It Wet!

Why Pre-wet?

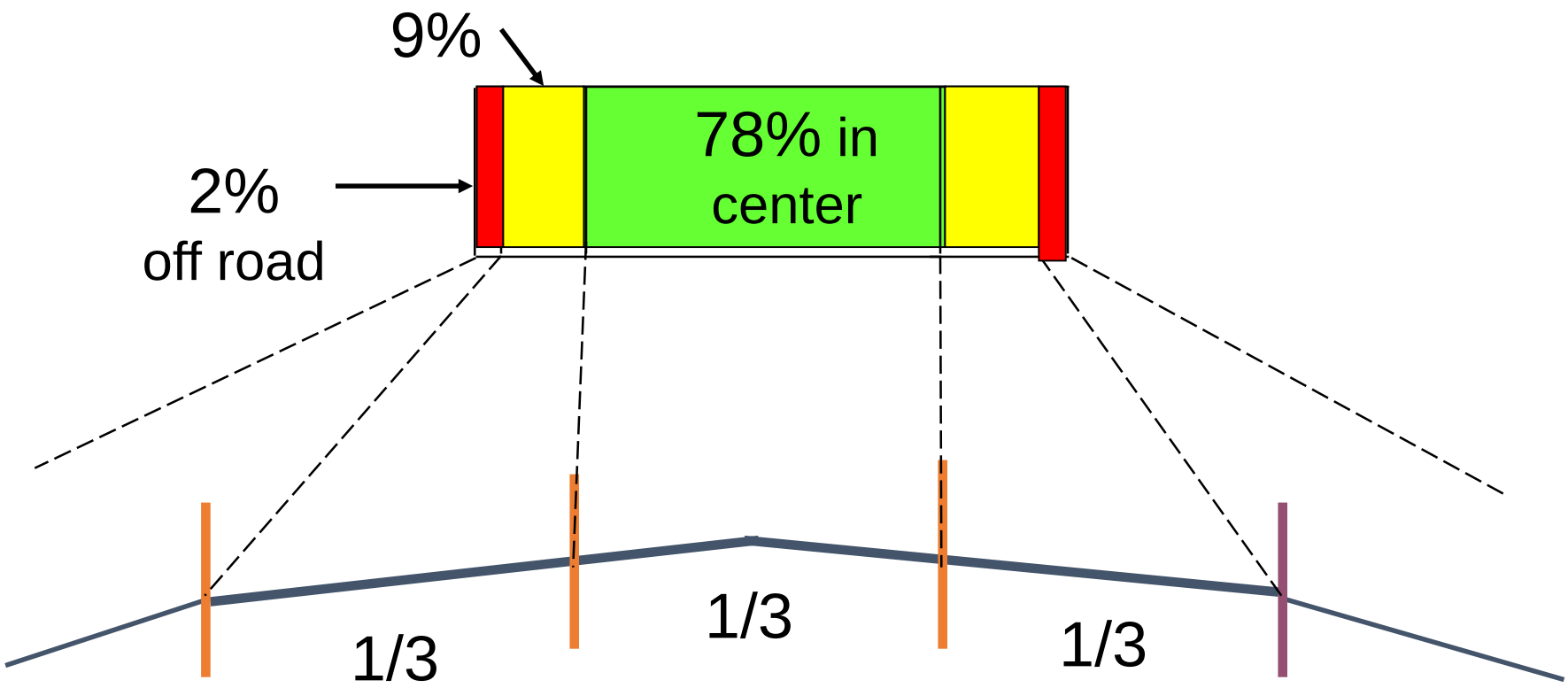
- Minimizes scatter during application
- Keeps 20 to 30 percent more material on the road
- Jumpstarts brine process
- Reduces working temperature of salt
- Reduces Environmental impacts
- Saves money

Typical Scatter Pattern of Road Salt



100% Salt Spread in Center 1/3 of Road

Typical Scatter of Pre-wet Road Salt

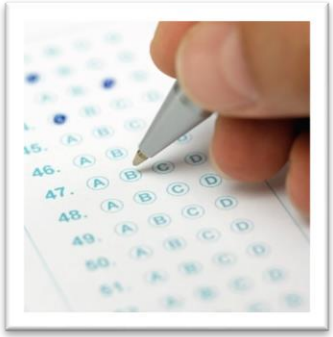


100% <u>Prewetted</u> Salt Spread in Center 1/3 of Road

26% Salt Saved

What does that mean to you?

If your methods are working without pre-wetting, you can turn your Application rates down **26%.**



SAVING BOTH TIME AND MATERIAL

50lbs less salt =
More than10,000 gal of water protected.

CALIBRATION CHART (US)

Agency:
Location:
Truck No: Spreader No:
Date: By:

Gate Opening _____ (inches)
(Hopper Type Spreaders)

				DISCHARGE RATE (pounds discharged per mile)								
	A	B	C	TRAVEL SPEED AND COMPUTATION MULTIPLIER ( )								
Control Setting	Shaft RPM (Loaded)	Discharge per Revolution (pounds)	Discharge per Minute (lb) (A x B)	5 mph (x 12.00)	10 mph (x 6.00)	15 mph (x 4.00)	20 mph (x 3.00)	25 mph (x 2.40)	30 mph (x 2.00)	35 mph (x 1.71)	40 mph (x 1.50)	45 mph (x 1.33)
1			-	-	-	-	-	-	-	-	-	-
2			-	-	-	-	-	-	-	-	-	-
3			-	-	-	-	-	-	-	-	-	-
4			-	-	-	-	-	-	-	-	-	-
5			-	-	-	-	-	-	-	-	-	-
6			-	-	-	-	-	-	-	-	-	-
7			-	-	-	-	-	-	-	-	-	-
8			-	-	-	-	-	-	-	-	-	-
9			-	-	-	-	-	-	-	-	-	-
10			-	-	-	-	-	-	-	-	-	-
11			-	-	-	-	-	-	-	-	-	-

THE ACTUAL APPLICATION RATE (POUNDS PER LANE MILE) **ON THE HIGHWAY IS THE DISCHARGE RATE DIVIDED BY THE NUMBER OF LANES BEING TREATED**

SPREADER CALIBRATION PROCEDURE

Calibration is simply calculating the pounds per mile discharged for each control setting at various travel speeds by first counting the number of auger or conveyor shaft revolutions per minute, measuring the weight of salt discharged in one revolution, then multiply the two to obtain discharge per minute, and finally multiplying the discharge per minute by the time it takes to travel 1 mile. Most spreaders have multiple gate openings; so you must calibrate for specific gate openings.

Equipment needed:

1. Scale to weigh salt
2. Salt collection device
3. Marking device
4. Watch with second hand

Calibration steps:

1. Remove, by-pass or turn off spinner.
2. Warm truck's hydraulic oil to normal operating temperature with spreader system running.
3. Put partial load of salt on truck.
4. Mark shaft end of auger or conveyor.
5. Dump salt on auger.
6. Rev truck engine to operating RPM.
7. Count number of shaft revolutions per minute at each spreader control setting, record.
8. Collect salt discharged for one revolution, weigh it and deduct the weight of the container. (For greater accuracy, collect salt for several revolutions and divide by that number of revolutions to get the weight for one revolution.)
9. Multiply Column A by Column B to get Column C; then multiply Column C by the number of minutes to travel one mile ( ) at various truck speeds to get pounds Discharged per mile.*

##########

CALIBRATION OF AUTOMATIC CONTROLS

Automatic controls may be calibrated using the following steps:

1. Remove, by-pass or turn of spinner.
2. Set control on given number.
3. Tie sack or heavy canvas under spreader discharge area.
4. Mark specific distance on a highway or other paved area, such as 1000 ft. .
5. Drive that distance with spreader operating.
6. Weigh salt collected.
7. Multiply weight of salt by 5.28 (in case of 1000 ft.).

Answer will be salt discharged per mile which remains constant regardless of speed, but calibration must be done for each control setting. Some automatic control manufacturers have "simulators" which eliminate need for on-road operation for calibration.

Calibration

Why?

It is extremely important to calibrate the system to ensure that the desired quantity of material (dry, solid, and liquids for pre-wetting systems) is actually being applied to the road.

Periodic calibrations should also be conducted because changes in mechanical linkages and components may occur and hydraulic systems perform differently as the season progresses.

IDOT Update:

- IDOT maintained 15ft/one pass mowing on most of their two-lane highways
- Mowed out the medians
- Did not mow out the east bound and north bound interstate ROWs

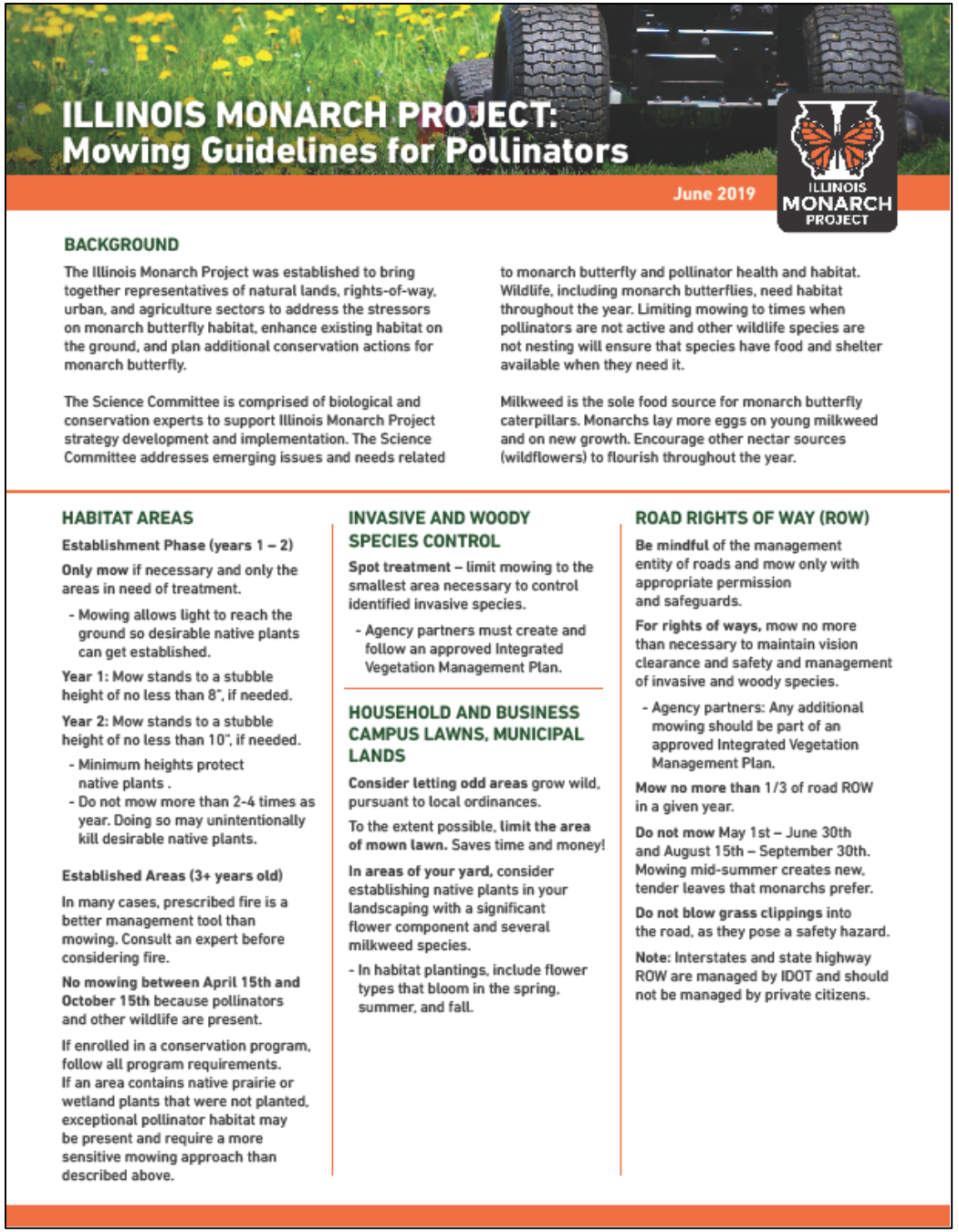
Keep in mind our interstate system ROW is approximately 13% of our total ROW in Illinois. Of that 13%, we did this heavy mowing on approximately 2/3rds. Interstate mowing was also to be mowed as a first priority.

The milkweed populations rebounded as expected and were back to a foot tall or more by the conclusion of the mowing window. In many areas this new milkweed is even blooming.

McHenry County Update:

For two years now we are only mowing the first 10' of our ROW's to help with blowing snow and also allow for the monarch butterflies and pollinators to utilize the rest of the ROW.

We have seen positive reports back with the blowing snow.



ILLINOIS MONARCH PROJECT: Mowing Guidelines for Pollinators

June 2019

ILLINOIS MONARCH PROJECT

BACKGROUND

The Illinois Monarch Project was established to bring together representatives of natural lands, rights-of-way, urban, and agriculture sectors to address the stressors on monarch butterfly habitat, enhance existing habitat on the ground, and plan additional conservation actions for monarch butterfly.

The Science Committee is comprised of biological and conservation experts to support Illinois Monarch Project strategy development and implementation. The Science Committee addresses emerging issues and needs related to monarch butterfly and pollinator health and habitat. Wildlife, including monarch butterflies, need habitat throughout the year. Limiting mowing to times when pollinators are not active and other wildlife species are not nesting will ensure that species have food and shelter available when they need it.

Milkweed is the sole food source for monarch butterfly caterpillars. Monarchs lay more eggs on young milkweed and on new growth. Encourage other nectar sources (wildflowers) to flourish throughout the year.

HABITAT AREAS

Establishment Phase (years 1 – 2)

Only mow if necessary and only the areas in need of treatment.

- Mowing allows light to reach the ground so desirable native plants can get established.

Year 1: Mow stands to a stubble height of no less than 8", if needed.

Year 2: Mow stands to a stubble height of no less than 10", if needed.

- Minimum heights protect native plants .
- Do not mow more than 2-4 times as year. Doing so may unintentionally kill desirable native plants.

Established Areas (3+ years old)

In many cases, prescribed fire is a better management tool than mowing. Consult an expert before considering fire.

No mowing between April 15th and October 15th because pollinators and other wildlife are present.

If enrolled in a conservation program, follow all program requirements. If an area contains native prairie or wetland plants that were not planted, exceptional pollinator habitat may be present and require a more sensitive mowing approach than described above.

INVASIVE AND WOODY SPECIES CONTROL

Spot treatment – limit mowing to the smallest area necessary to control identified invasive species.

- Agency partners must create and follow an approved Integrated Vegetation Management Plan.

HOUSEHOLD AND BUSINESS CAMPUS LAWNS, MUNICIPAL LANDS

Consider letting odd areas grow wild, pursuant to local ordinances.

To the extent possible, **limit the area of mown lawn.** Saves time and money!

In areas of your yard, consider establishing native plants in your landscaping with a significant flower component and several milkweed species.

- In habitat plantings, include flower types that bloom in the spring, summer, and fall.

ROAD RIGHTS OF WAY (ROW)

Be mindful of the management entity of roads and mow only with appropriate permission and safeguards.

For rights of ways, mow no more than necessary to maintain vision clearance and safety and management of invasive and woody species.

- Agency partners: Any additional mowing should be part of an approved Integrated Vegetation Management Plan.

Mow no more than 1/3 of road ROW in a given year.

Do not mow May 1st – June 30th and August 15th – September 30th. Mowing mid-summer creates new, tender leaves that monarchs prefer.

Do not blow grass clippings into the road, as they pose a safety hazard.

Note: Interstates and state highway ROW are managed by IDOT and should not be managed by private citizens.

McHenry County Sensible Salting Workshop

WHO: Public and Private Sector Employees Responsible for Roads, Sidewalks and Parking Lots

DATE: Tuesday 11/5, Wednesday 11/6, or Thursday 11/7 (choose one day only)

*** Each Day's Class is limited to 40 people — so register for your preferred date quickly ***

TIME: 8:00 AM - 2:00 PM *Registration begins at 7:30 AM

!!! NEW LOCATON !!! McHenry County Division of Transportation, 16111 Nelson Rd, Woodstock, IL 60098

Sensible Salting

Removal of snow and ice from pavement is essential for public safety and the local economy. Pavement de-icing products, including sodium chloride (common salt) and other chloride-based chemicals, are widely used and can be effective in maintaining safe travel conditions. Unfortunately deicing chemicals are corrosive to vehicles, roadway surfaces, parking lots, bridges and other infrastructure.

Deicing chemicals kill vegetation and wildlife, degrade aquatic habitat, and pollute water. Research also shows that chlorides from deicing chemicals are increasing in groundwater, thereby contaminating McHenry County's only source of drinking water.

Conventional practices commonly apply excessive amounts of deicing chemicals, far beyond what is needed to maintain safety. These excess applications provide no benefit to the public but come at great economic and environmental cost. Since there are currently no viable alternatives to chloride-based chemicals for snow and ice management, the best option to use them more intelligently.

Sensible Salting

"The use of Best Management Practices for snow/ice control that maintains safety for pedestrians, drivers, vehicles and property while eliminating the unnecessary use of salt in order to minimize impacts to water and the environment."

Workshop Updated for 2019!!!

This workshop will be conducted by the McHenry County Division of Transportation and Division of Water Resources, the Village of Algonquin, and the City of Crystal Lake. Calibration training provided by MDOT staff.

Registration fee includes: course materials, breakfast, lunch, refreshments, and the opportunity to receive Level 1 Certification: Snow & Ice Best Management Practices.

Training Topics Include:

- Application Rates
- Liquids
- Weather Conditions
- Material Storage
- Levels of Service
- Truck Washing
- New Maintenance Methods
- Environmental Effects
- State/Local Law

Demonstration/Hands-on:

- Calibrating Equipment
- Anti-Icing

Who Should Participate:

- Public works superintendents, managers, directors
- Snow Plow Operators/De-icing applicators
- Contractors maintaining private/public walkways and/or parking lots
- Property Managers writing de-icing contracts
- Distributors of anti-icing/de-icing products
- Others responsible for winter maintenance

Need More Information?

Contact: McHenry County Dept. of Planning & Development
Phone: (815) 334-4560

Register Online at
www.mchenryh2o.com

Or mail in the Registration Form as directed below

2016 Attendees:
This is the year to renew!
6 PDH's are available.

Sponsored By...

Registration Form

Workshop Date: Please indicate 1st and 2nd choices

_____ Tuesday November 5, 2019
_____ Wednesday November 6, 2019
_____ Thursday November 7, 2019

Name _____

Title _____

Organization _____

Address _____

City/State/Zip _____

Phone _____

E-Mail _____

Registration Information:

Workshop Registration Fee: $25.00*
*Breakfast, Snacks, Lunch and Refreshments included in fee.

Please make checks payable to:
McHenry County Dept. of Planning & Development

Mail Checks and Registration to:
McHenry County Dept. of Planning & Development
2200 N. Seminary Ave., Suite 208
Woodstock, IL 60098

Payments & registration and must be received by:
Friday, October 25, 2019