

TRANSPORTATION



OVERVIEW,

BENEFITS OF TRANSPORTATION,

CONSEQUENCES OF TRANSPORTATION,

SOLUTIONS

TRANSPORTATION

Modern societies need access to safe, efficient, reliable transportation for:

- **Communities** - residential development, economic growth, jobs, and tax base
- **Businesses** - access materials or labor, deliver goods and services to customers
- **Households** - work, school, shopping, medical care, social events/entertainment

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Along with positive benefits, transportation systems can have negative impacts:

- Direct impact from construction
- Impervious surfaces increase runoff and potential flooding
- Runoff can direct pollutants into nearby rivers, streams, lakes and wetlands
- These issues are not unique to McHenry County

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Common pollutants include:

- Suspended solids
- Chlorides and other deicing agents
- Nitrogen and phosphorous
- Heavy metals

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Fortunately there are option to help mitigate negative impacts:

- Green Infrastructure/Low-Impact Development (LID)
- Complete Streets
- Native Plants in Rights-of-Way
- Invasive Species Control
- Street Sweeping
- Catch Basin Cleaning
- Snow and Ice Management

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Green Infrastructure/Low Impact Development: *The State, County, municipalities, and townships should implement green infrastructure/low impact development into roadway projects to reduce flooding, improve water quality, enhance habitat, and create natural beauty in the county.*

- Landscaping with native vegetation
- Rain gardens, planter boxes and bioswales
- Permeable paving systems
- Street trees
- Complete streets

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Establish Native Plants in Rights-of-Way: *The County, municipalities, and townships should establish native vegetation on road rights-of-way to reduce flooding, improve water quality, expand pollinator habitat, and create natural beauty in the county.*

Section discusses:

- Benefits of native vegetation
- Establishment of native vegetation
- Maintenance of native vegetation

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Invasive Species Control: *The State, County, municipalities, and townships should control the spread of invasive species along their roadways.*

Section discusses:

- What invasive species are
- The damage that can be done
- Strategies for control
 - Early detection and eradication
 - Cleaning mowing equipment

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Street Sweeping: *The County, municipalities, and townships can protect water quality and maintain the appearance of roadways by implementing or expanding street sweeping practices.*

Section discusses:

- Types of street sweeper vehicles
- The function to remove debris, nutrients, and pollution
- Strategies for optimal removal of nutrients and pollutants
- Safe disposal practices

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Catch Basin Cleaning: *The County, municipalities, townships and applicable businesses can protect water quality and protect infrastructure by implementing or expanding catch basin cleaning practices.*

Section discusses:

- The function of catch basins to prevent clogging and remove pollutants
- The benefits of catch basin cleaning
- Strategies and timing for optimal removal of pollutants
- Safe disposal practices

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Snow and Ice Management: *The State, County, municipalities, townships, and applicable businesses can use Sensible Salting practices to manage snow and ice while reducing excess applications of chloride based deicers and protecting water resources.*

Section discusses:

- Importance of snow and ice management for safety
- Contamination of surface water and groundwater from salt and other deicers
- Need for Sensible Salting
- Description of Sensible Salting practices

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SENSIBLE SALTING

“The use of Best Management Practices for snow and ice management that maintains safety for pedestrians, drivers, vehicles and property while eliminating the unnecessary use of salt to minimize impacts to water and the environment.”

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SENSIBLE SALTING

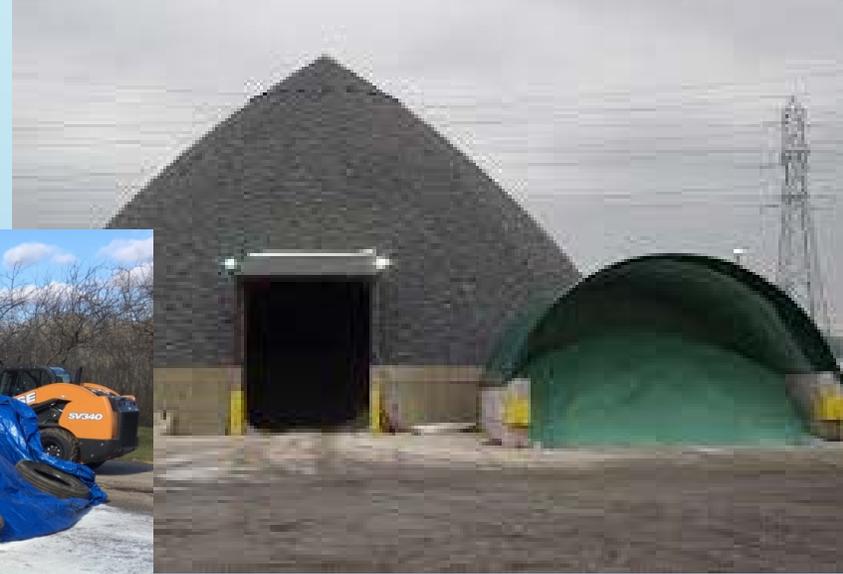
Section discusses:

- Importance of snow and ice management for safety
- Contamination of surface water and groundwater from salt and other deicers
- Need for Sensible Salting
- Description of Sensible Salting practices

Sensible Salting

- Proper Storage
- Calibrating equipment
- Only applying enough product to be effective
- Tracking Weather
- Applying correct product for road temperature
- Anti-Icing vs. De-Icing
- Using liquid applications before events
- Use of carbohydrates (beet juice)
- Pre-wetting
- Training and Certification

Proper Salt Storage



Best



Better



Wrong

Calibrate Equipment



- **Calibrate Annually**
- **Correct application rate**



Photo: Scott Kuykendall

Use Correct Application Rates



More Like This



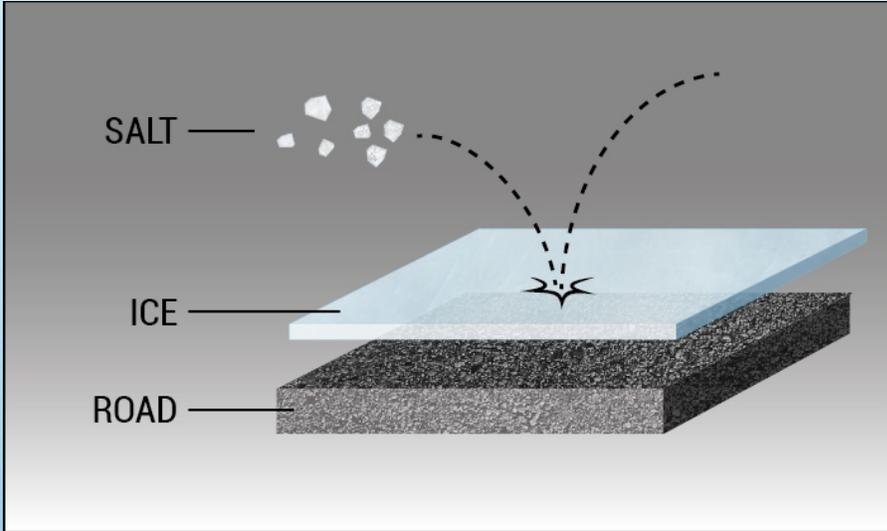
Right

Wrong



NOT Like This

REDUCE SALT USE



Pre-Wet Salt

- **Activates the Salt**
- **Improves Effectiveness**
- **Reduces Bounce**

**Use Correct Product
for Pavement Temperature**



REDUCE SALT USE

Anti-Icing – Liquid Application Prior to Storms



Photo: Scott Kuykendall

- Prevents bonding
- Simplifies snow removal
- Reduces need for additional salt applications

REDUCE SALT USE

Liquid De-Icing – Liquid Application During Storms



- **2018/2019 Season, MCDOT tested “All Liquid Route”**
- **MCDOT Supermix (85% Salt Brine, 10% Organic, 5% Calcium Chloride)**
- **route yielded 38% reduction in road salt usage for season**

Sensible Salting Training

- This is the 11th year McHenry County has provided Sensible Salting Workshops
- Workshops have trained over 850 people from various municipalities and organizations

Classroom Training



Hands-On Training



REDUCE SALT USE

Living Snow Fences



- **2020 MCDOT and 3 Farmers created Living Snow Fences**
- **Improves Safety - Reduces drifting, mobilizations, salt use**
- **Road surfaces routinely 15 degrees warmer**