# Salt Pollution in Ohio & Steps Toward Managing the Problem

Sensible Salting Workshops

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Ohio EPA



## **Background Information**

- Winter road salting pioneered in New Hampshire in 1938
  - Adopted as practice in 1945
  - Widespread since 1975 (10 million tons annually)
  - Now at ~ 20 million tons annually
  - Ohio is 3<sup>rd</sup> in tons applied
- Long-term Environmental Impacts Coming to Light
  - Trend of increasing chloride concentrations in rivers and lakes across the northern tier of states and Canada
  - Induced permanent stratification in some lakes
- Salt applied in excess of travel safety
- New technologies and BMPs exist to reduce salt application but maintain safety levels



#### Environmental Protection Agency



#### **Road Salt Use by Year**



#### Salt Concentrations are Trending Up

*Miami Conservancy District – Ground Water* 

Large River Segments, Great Miami Watersh



Miami Conservancy District blog, October 13, 2021

Once salt is in water (drinking or waste) it cannot feasibly be removed!





Time Period

#### **Spatial Extent**



## **Implications of Increasing Salination**

- Injurious to aquatic life
  - Continuous effect across the domain of concentrations
  - US EPA chronic criterion of 230 mg/l under-protects
- Public and private water supplies are being impacted
  - Drinking water standard is being threatened or exceeded
- Corrosive to infrastructure
  - Pavement, concrete and steel
  - Collection and distribution systems
  - Lead leaching from plumbing

#### Macroinvertebrate Scores and Chloride Concentrations



Chloride mg/l



## **Managing Pollution from Diffuse Sources**

#### **Structural Measures**

Live-edge plow blades \_\_\_\_\_\_ 
Brine tanks
Pavement sensors
Calibration equipment

#### **Non-Structural Measures**

Local ordinances Regulation Incentives (e.g., 319 funding) Liability waivers Service levels Statewide management plan (MN) Education and outreach

#### **Extent of Present Management**

Covered storage of salt piles Secondary containment of brine (spills)





# MCM 6: P2GH Performance Standards

- Train employees on SWPPP and stormwater pollution prevention at least once per year
- Establish a maintenance program, including maintenance schedules, for your MS4
- Ensure proper disposal of wastes removed from the MS4
- Provide salt piles w/ cover and brine tanks w/ bollards and/or secondary containment





### **Chloride Management Plan**

- Proactive approach
- Resources to help organize, coordinate, and promote education and outreach
  - Tap existing expertise
  - Contract training
  - Initial period; need to encourage long-term funding
  - Areawide agencies, conservancy districts, local SWCDs
- Incentivize BMP & technology adoption
  - Fund training events
  - Cost share for equipment
    - H2Ohio initial round; proactive
    - WRRSP may also be an avenue
  - Ohio EPA business model
    - Longer-term



### **Discussion and Questions**

Municipal Application



*Private Application (up to 50% of the load)*