

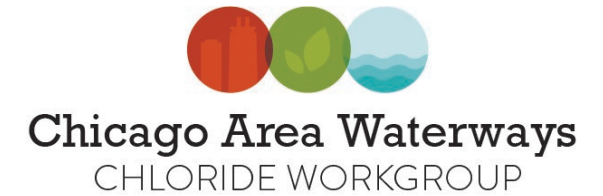


# Chicago Area Waterways

## CHLORIDE WORKGROUP

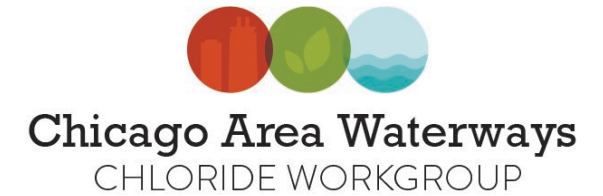
March 20, 2024 at 1pm  
Workgroup Meeting  
In-Person, Village of Niles

# Meeting Agenda



- Welcome and Introductions
- Approval of December 2023 Meeting Minutes
- TLWQS Reminders
- Salt Smart and You Exhibit Available
- Street Sweeping and Chlorides Presentation by DRSCW Staff
- Liquids Lessons Learned Draft
- Training Opportunities Discussion
- Workgroup Member Check-In
- 2023-2024 In-Person Workgroup Meetings

# Workgroup Members



Village of Lynwood  
Village of Skokie  
City of Chicago  
Village of Wilmette  
Village of Orland Park  
Village of Park Forest  
Village of Homewood  
Village of Crestwood  
City of Evanston  
City of Oak Forest  
City of Palos Heights  
Village of Lansing

Village of Midlothian  
Village of Tinley Park  
Village of Richton Park  
Village of Flossmoor  
Village of Niles  
Village of South Holland  
Village of Glenwood\*  
Village of Lincolnwood\*  
Cook County DOTH  
Skyway Concession Company  
(Chicago Skyway)  
MWRDGC

Ozinga Ready Mix Concrete  
Ozinga Materials  
Midwest Marine Terminals  
Citgo  
Stepan Company  
Morton Salt  
IMTT

**\*New Members since  
Annual Meeting**

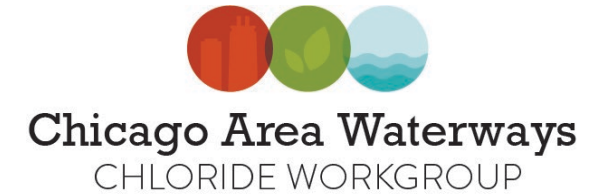
# Petitioners Still Deciding

- Country Club Hills
- Dolton
- Oak Lawn
- Noramco

## Outside TLWQS Watershed:

- Morton Grove
- Winnetka

# Board Members and Officers



President: John Schaefer – Village of Homewood

Vice President: Edgar Cano – City of Evanston

Treasurer/Secretary: Joel Van Essen – Village of Orland Park

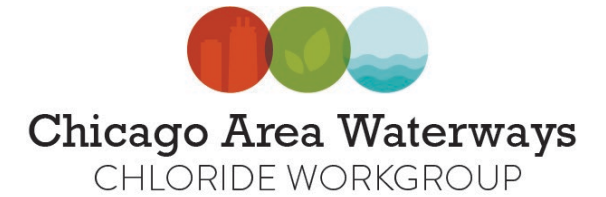
At-Large: Ed Staudacher – MWRDGC

At-Large: Pat Bonham – City of Chicago

At-Large: Roderick Ysaguirre, Village of Park Forest

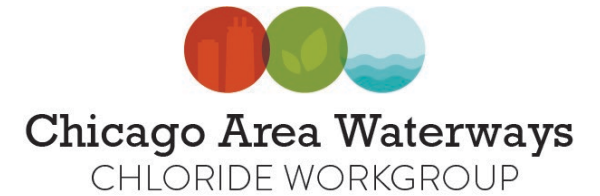
At-Large: Vacant

# Approve December 2023 Meeting Minutes



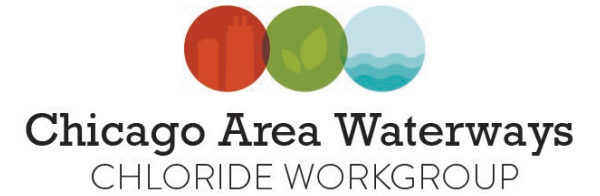
- Minutes sent out in meeting packet

# TLWQS Reminders



- **Second Annual Report due to WORKGROUP by June 1, 2024**
  - Workgroup's Status Report due July 1, 2024 and to be able to complete that report, we need your second annual reports by June 1, 2024
- Include in Annual Report impediments to implementing BMPs
  - The workgroup needs to report on this – if there any impediments for your organization to implement the BMPs, please include it in your report
  - If you have any solutions to any problems you've faced, please include that too!

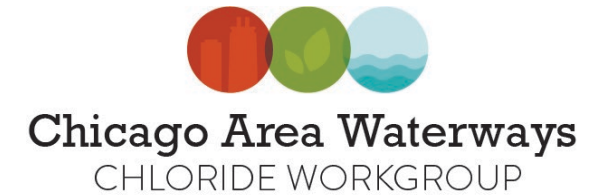
# TLWQS Reminders



- All organizations need to use the Workgroup's Template for the Annual Report
  - If using a consultant, please make sure they are aware of this and share the final template with them
  - Templates were emailed out and are available on Workgroup Website
  - Make sure you're completing both the Report Document and Spreadsheet – both the Report Document and Spreadsheet contain items that are required to be reported on per the TLWQS Permit/Order



# TLWQS Documentation Reminders



- Call Out Information Needed:
  - Summary of snowfall data.
  - List of all callouts.
  - Quantity and type of precipitation during the callout.
  - Application rate for each type of material used during the callout.
  - Quantity of each material used for each callout.
- Other Information Needed:
  - Materials and Total Amounts Used
  - Application Rates
  - Training Provided
  - Update Equipment List if New Equipment Added or Old Equipment Retired
  - Material Storage Information Updated if Needed
  - Capital Purchases Update
  - Workgroup Participation for 2023-2024

# TLWQS Reminders



- Other Reminders:
  - All equipment calibrated by November 30<sup>th</sup> each year
  - All staff trained by November 30<sup>th</sup> each year

# Salt Smart and You Exhibit Available



Chicago Area Waterways  
CHLORIDE WORKGROUP

- Salt Smart Exhibit for Libraries, Municipal Centers, Community Centers
- 8 Double Sided Panels make up the exhibit
- Each Panel has English and Spanish







DuPage River Salt Creek Workgroup



Chicago Area Waterways  
CHLORIDE WORKGROUP

# Chlorides in our Waterway: Road Salt and Street Sweeping

Stephen McCracken

Alex Handel

The Conservation Foundation

3/20/24



# Objectives

- Quantify chloride/salt capture by street sweeping
- Evaluate the feasibility of street sweeping as a practice for reducing in-stream chloride concentrations
- Is it worth pursuing “credits” for communities that sweep currently?

# Street Sweeping

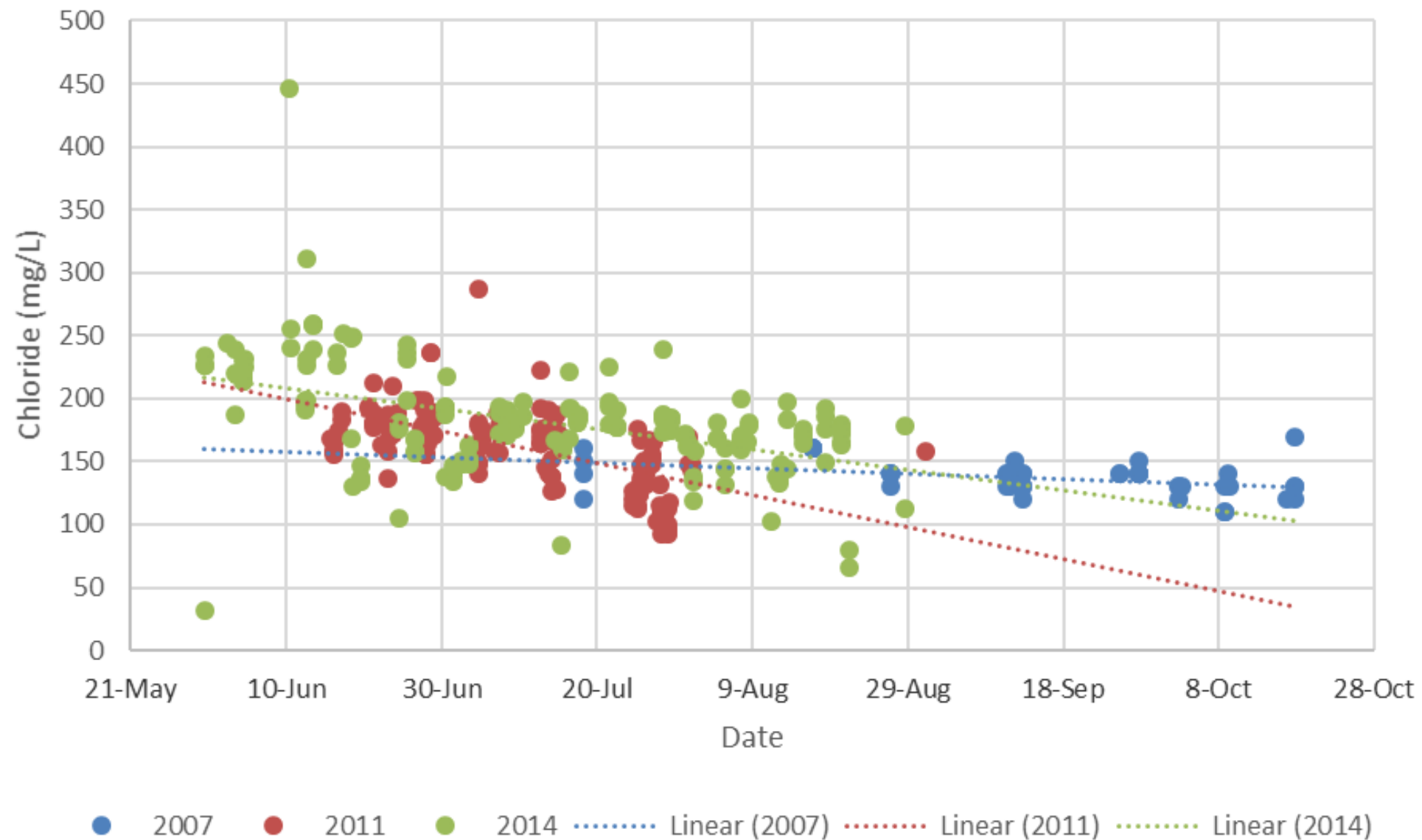
- As well as aesthetic impacts street sweeping does capture multiple pollutants
  - TSS
  - Metals
  - TP
  - PAHs







## E Branch DuPage River Chloride Concentrations in the Summer Months





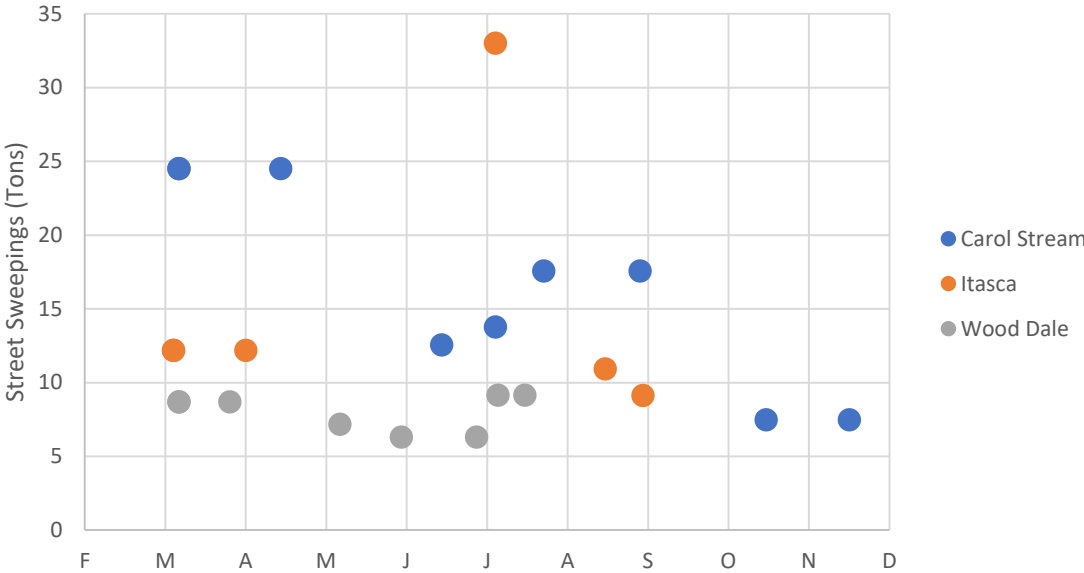
- Carol Stream, Itasca, and Wood Dale (2022 only)
- Agencies provide composite samples of street sweeping material
- Samples are tested for chloride concentration
- Total mass of street sweeping material each cycle (courtesy of LRS), and chloride concentrations calculate chloride mass
  - $\text{chloride conc.} \left( \frac{\text{mg}}{\text{kg}} \right) * \text{Street sweeping mass (kg)} = \text{chloride (mg)} (\div 1000000 \text{ for kg})$
- Lane miles from agency sweeping plans, and chloride mass for each cycle gives chloride per lane mile
  - $\frac{\text{chloride(mg)}}{\text{lane miles}} = \text{chloride per lane mile}$
- Average chloride per lane mile, lane mile per sweep, and sweeps per year determine average estimated chloride and road salt totals
  - $\frac{\text{chloride}}{\text{lane mile}} * \frac{\text{lane mile}}{\text{cycle}} * \frac{\text{cycles}}{\text{year}} = \text{annual chloride}$
- Road salt is typically ~60% chloride by mass. Road salt mass is calculated but dividing chloride mass by 0.6
  - $\frac{\text{chloride (mg)}}{0.60} = \frac{\text{Road Salt (mg)}}{1}$
- Water quality exceedances are calculated by dividing the mass of chloride by the exceedance threshold to determine volume of water affected.
  - $\frac{\text{Chloride(mg)}}{\text{WQS} \left( \frac{\text{mg}}{\text{L}} \right)} = \text{L of water in violation} (\div 3.785 \text{ for gallons})$

Agency	Sweeper Type	Cycles/Year	Lane Miles
Carol Stream	Regenerative air	8	300
Itasca	Mechanical brush	15 (streets) + 8 (Lots)	67+22
Wood Dale	Mechanical brush with vacuum assist	12	105

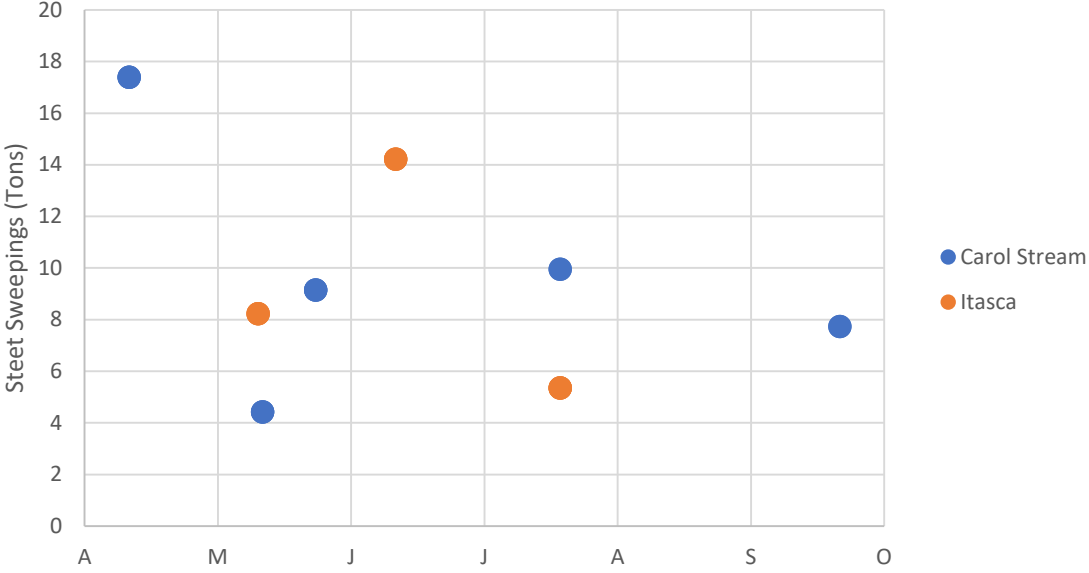
Parameter National Criteria (Federal)	Chronic (mg/l)	Acute (mg/l)
Chloride (total)*	230	860
Illinois State Standard	(mg/l)	
Chloride (total)*	500	
IPS Threshold	(mg/l)	
Chloride (total)*	120	

\*Based on given concentrations of sulphate and hardness  
Federal value under review

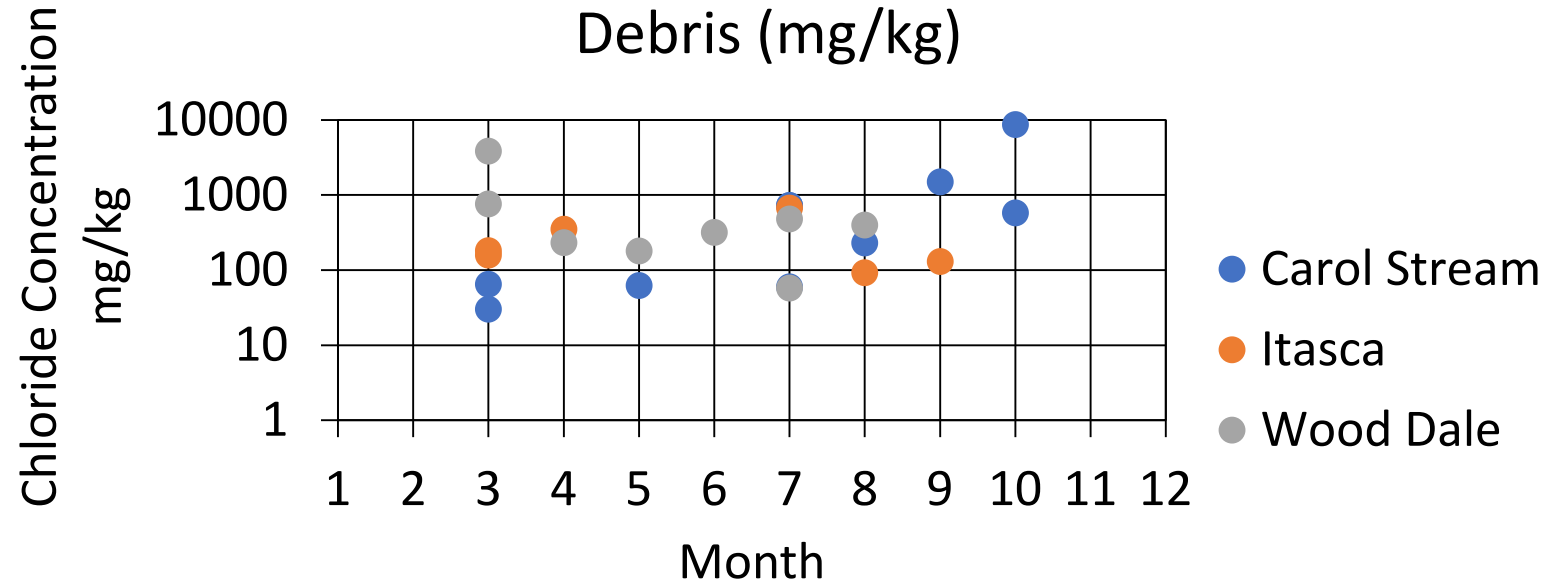
Street Sweeping Mass 2022



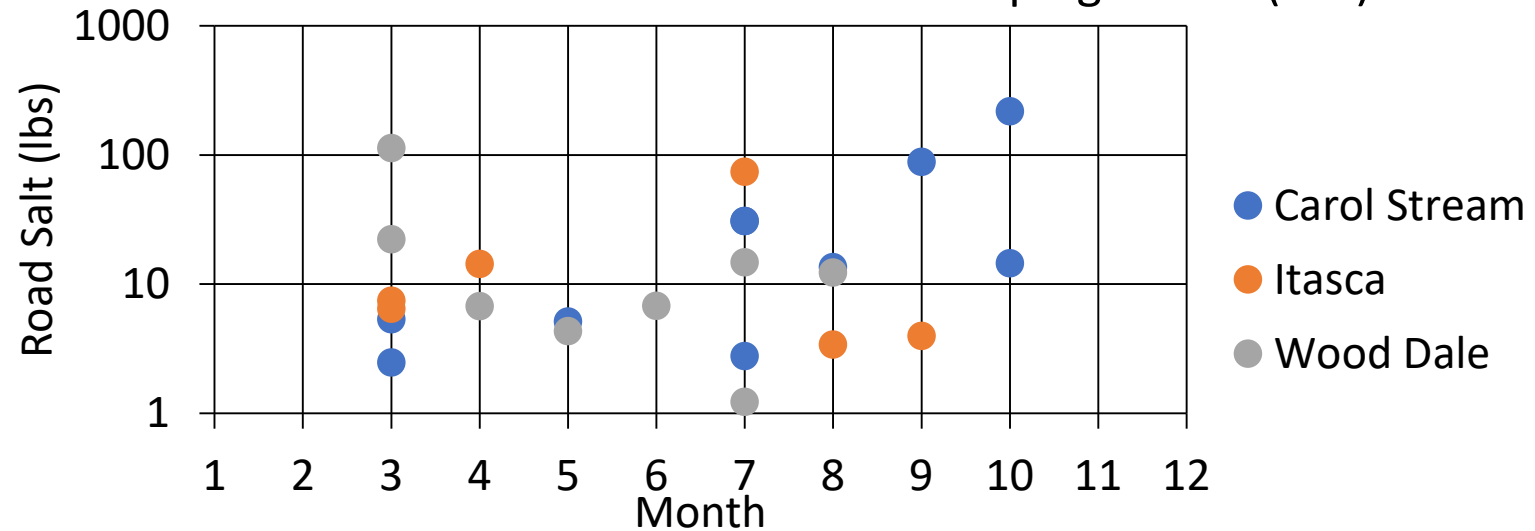
Street Sweeping Mass 2023



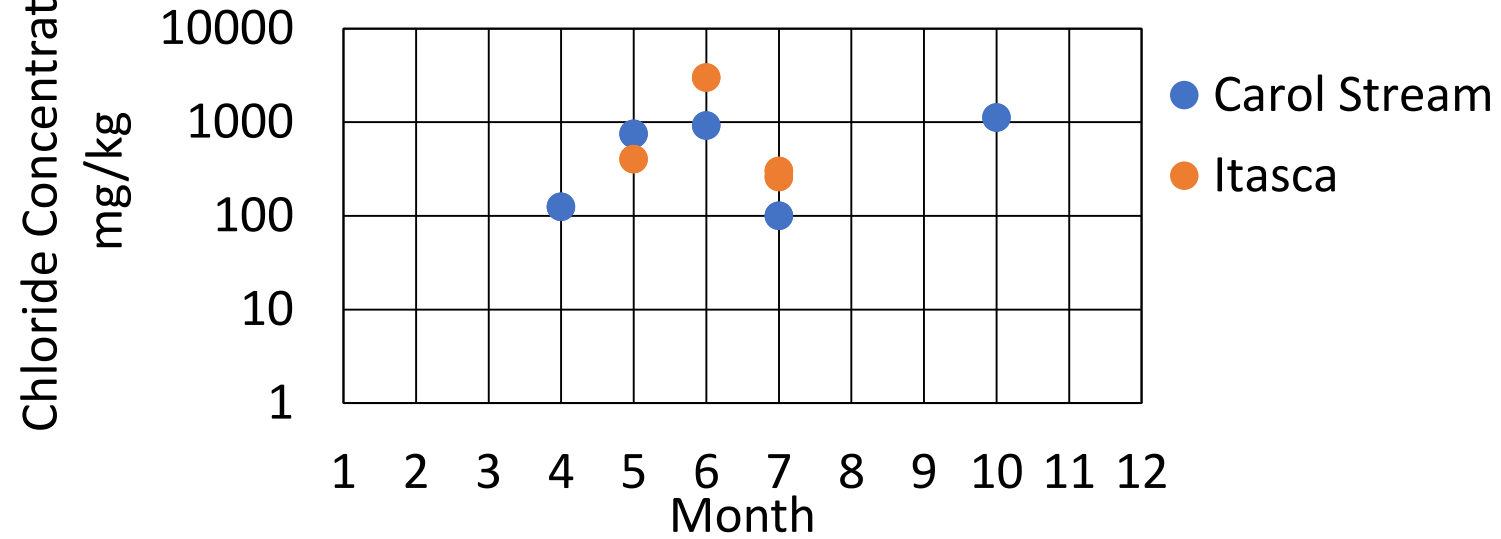
## 2022 Chloride Concentration in Street Sweeping Debris (mg/kg)



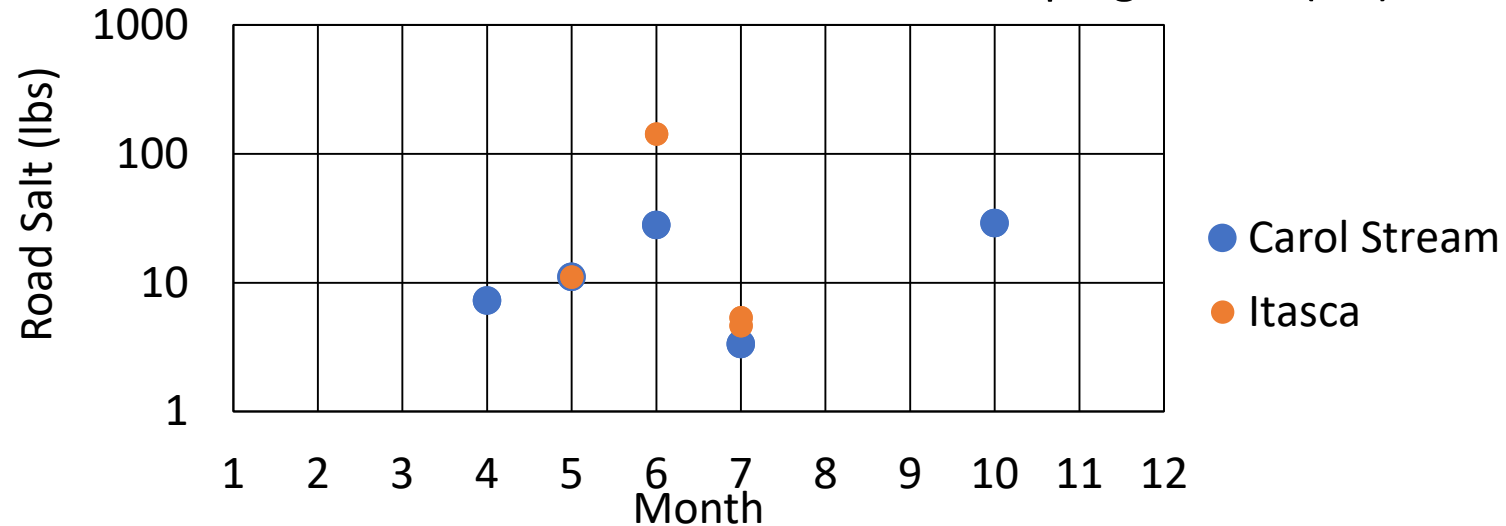
## 2022 Estimated Road Salt in Street Sweeping Debris (lbs.)



2023 Chloride Concentration in Street  
Sweeping Debris (mg/kg)



2023 Estimated Road Salt in Street Sweeping Debris (lbs)

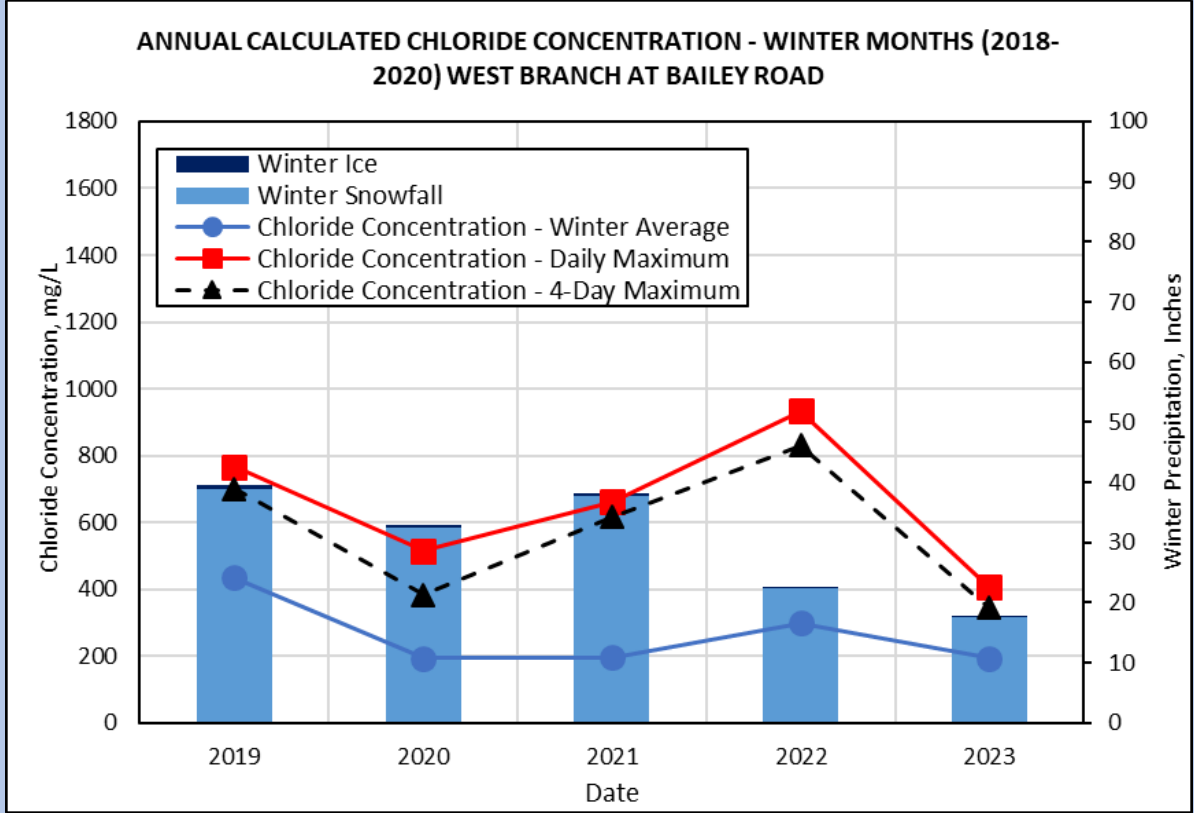
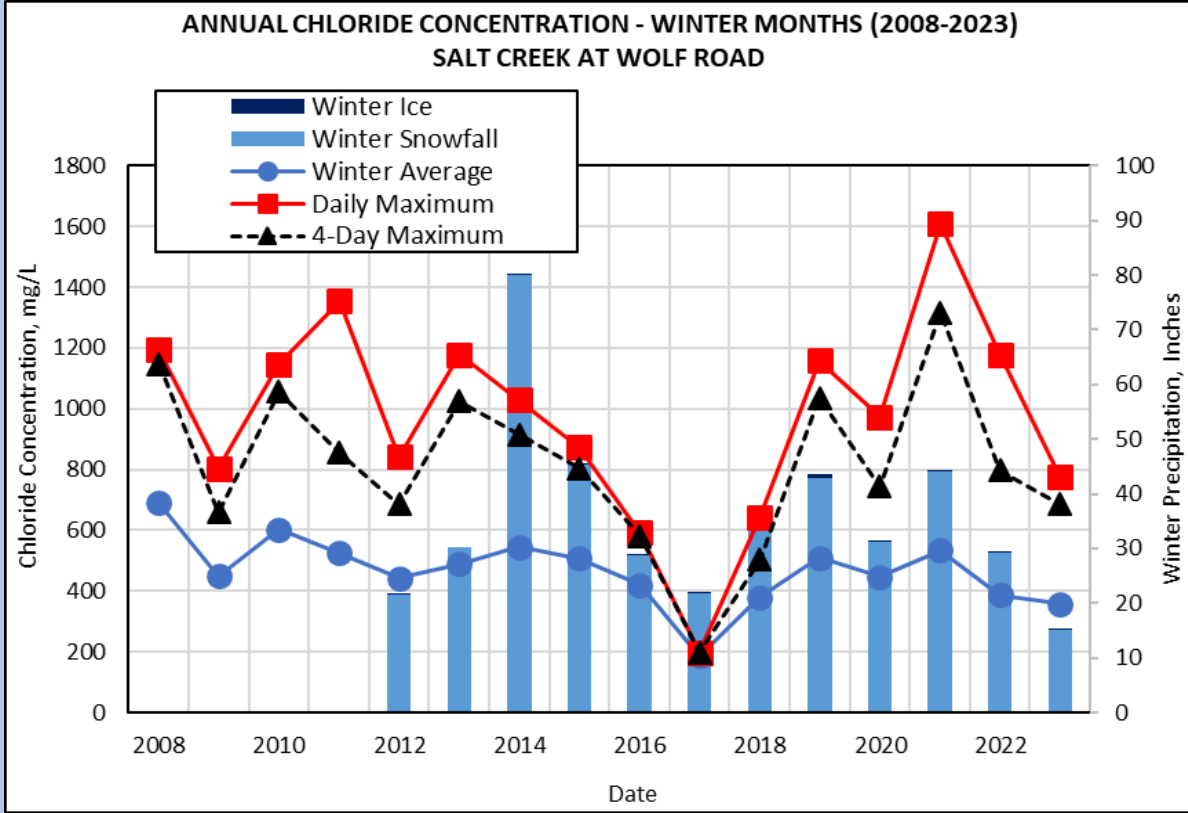


2022			
	Carol Stream	Itasca	Wood Dale
Average g Cl/ Lane mile	38.24	73.95	57.23
Average kg Cl/ Lane mile	0.04	0.07	0.06
Calculated Total Mass kg cl/year	91.78	87.33	60.09
<b>Calculated Road Salt lbs/Lane mile</b>	<b>0.14</b>	<b>0.27</b>	<b>0.21</b>
<b>Calculated Road Salt lbs/year</b>	<b>337.18</b>	<b>320.84</b>	<b>220.77</b>

Agency	Gallons in excess of <u>IL WQS</u>	MG in excess of <u>IL WQS</u>	River MGD
Carol Stream	48,497	0.05	74.19
Itasca	46,147	0.05	92.90
Wood Dale	31,754	0.03	92.90
Agency	Gallons in excess of <u>IPS Threshold</u>	MG in excess of <u>IPS Threshold</u>	River MGD
Carol Stream	202,071	0.20	74.19
Itasca	192,279	0.19	92.90
Wood Dale	132,307	0.13	92.90
Agency	Gallons in excess of <u>Federal Chronic</u>	MG in excess of <u>Federal Chronic</u>	River MGD
Carol Stream	105,428	0.11	74.19
Itasca	100,319	0.10	92.90
Wood Dale	69,029	0.07	92.90
Agency	Gallons in excess of <u>Federal Acute</u>	MG in excess of <u>Federal Acute</u>	River MGD
Carol Stream	28,196	0.03	74.19
Itasca	26,830	0.03	92.90
Wood Dale	18,461	0.02	92.90

2023		
	Carol Stream	Itasca
Average g Cl/ Lane mile	14.242	165.765
Average Kg Cl/ Lane mile	0.014	0.166
Calculated Total Mass kg cl/year	34.181	195.768
<b>Calculated Road Salt lbs/lane Mile</b>	<b>0.05</b>	<b>0.61</b>
<b>Calculated Road Salt lbs/year</b>	<b>125.57</b>	<b>719.21</b>

Agency	Gallons in excess of <u>IL WQS</u>	MG in excess of <u>IL WQS</u>	River MGD
Carol Stream	1,806	0.002	69.03
Itasca	10,344	0.01	74.84
Agency	Gallons in excess of <u>IPS Threshold</u>	MG in excess of <u>IPS Threshold</u>	River MGD
Carol Stream	7,525	0.01	69.03
Itasca	43,101	0.04	74.84
Agency	Gallons in excess of <u>Federal Chronic</u>	MG in excess of <u>Federal Chronic</u>	River MGD
Carol Stream	3,926	0.004	69.03
Itasca	22,487	0.02	74.84
Agency	Gallons in excess of <u>Federal Acute</u>	MG in excess of <u>Federal Acute</u>	River MGD
Carol Stream	1,050	0.001	69.03
Itasca	6,014	0.01	74.84





# Questions and Discussion?



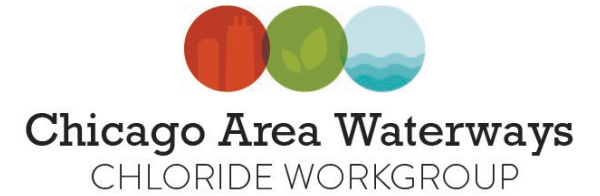


# Liquids Lesson Learned Guide



- Lessons Learned Guide Draft shared with the Workgroup for feedback

# Training from Salt Smart



- Developing a Roads Training Class for Northeast Illinois through Salt Smart in time for Fall Deicing Workshops with two formats
- Coordinated effort from Salt Smart Collaborative, Watershed Groups, and other partners (Lake County Watershed Groups)
- Incorporating local experience and knowledge into training

# Training Formats

## Virtual and/or In-Person Training

- 2-3 hours in length
- Covers all included topics
- Best for organizations still learning to use the BMPs or who want to attend a dedicated training and have ability to ask questions and get answers

## Short 10-30 Minute Modules

- Covers all included topics
- Ability to present on your schedule
- Attend “Train the Trainer” Class this fall to use modules
- Best for organizations with experience with the BMPs who want to train their staff on their own

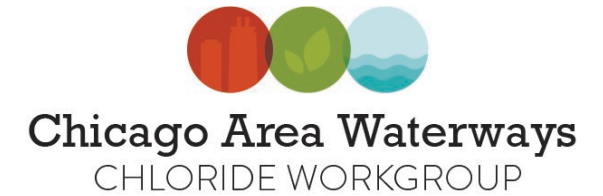
# Training Topics



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- Why Chlorides
- Salt/Deicer Science – how do the materials work?
  - Salt/Deicer needs time to work
  - Goal is to break the bond between pavement and snow/ice to plow vs using salt to burn off snow/ice
- Pavement Temperature, Weather Forecasting
  - Materials and Rate decisions based on Pavement Temperature and Weather Conditions
- Plowing/Mechanical Clearing
- Calibration
- Liquids
  - Anti-Icing
  - Pre-Wetting
  - Deicing with liquids
  - Making Brine
  - Blending Liquids
- Good Housekeeping, Storage, Handling
- Documentation and Reporting
- Winter Operations Planning
  - Snow and Ice Plans, Annual Training, Communication, Evaluation

# Topic and Content Specific Feedback and Input



- What information or practices from your operations do you want reinforced with the training?
- What parts of your winter operations do you or your organization struggle with that training could provide resources, information, or local experiences?
- What other topics or content do you want included in training?

# Modules: What level of detail do your staff need for internal training?



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Example from Clear Roads Training – different slides are labeled by experience and staff type



How would you set up your internal training?

## Slide Legend

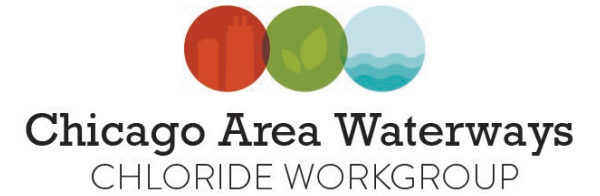
- Entry-level plow drivers
- ▲ Experienced plow drivers
- ★ Supervisors

# Need Content Contributors and Reviewers



- Provide specific input to help staff build the slide set for training
- Share experience to incorporate local knowledge into training
- Review content for accuracy

# Workgroup Member Check-In



- Any questions to the group that were not covered today?
- What Resources do you want from the workgroup?
- What help do you want from the workgroup?
- What connections do you want the workgroup to help facilitate?



# In-Person Workgroup Meetings for 2023-2024



- In-Person Workgroup Meetings
- Dates:
  - June 19<sup>th</sup>, 1pm – Annual Meeting, Location: MWRD's LASMA Visitor Center

# Questions after the Meeting?



## Contact:

Hanna Miller — The Conservation Foundation

Office: 630-428-4500 x108

[hmiller@theconservationfoundation.org](mailto:hmiller@theconservationfoundation.org)