TCMA Chloride Project
Education and Outreach Committee Meeting #4

Meeting Agenda
March 11, 2014
10:00 a.m. – 12:00 p.m.
MPCA office, room 6-3

Outcome: Review winter maintenance assessment tool. Receive input regarding education/outreach (non-traditional) BMPs to consider for incorporation into the tool. Leave with a shared understanding of how this tool can help us to meet water quality goals.

1. TCMA Chloride project update – Brooke Asleson, MPCA
2. Overview of Winter Maintenance Assessment Tool - Connie Fortin, Fortin Consulting
3. Group discussion of additional non-traditional BMPs to consider
4. Next steps for EOC

TCMA CHLORIDE PROJECT UPDATE

Minnesota Pollution Control Agency
Brooke Asleson

Goals & Shared Vision

- Understand the public safety needs & limitations
- Understand the environmental condition
- Evaluate those conditions against desired water quality goals
- Set realistic and achievable goals
- Develop a collaborative strategy to meet those goals

TCMA Chloride Management Plan

- Assist local partners to better manage the balance between the clean water and road safety

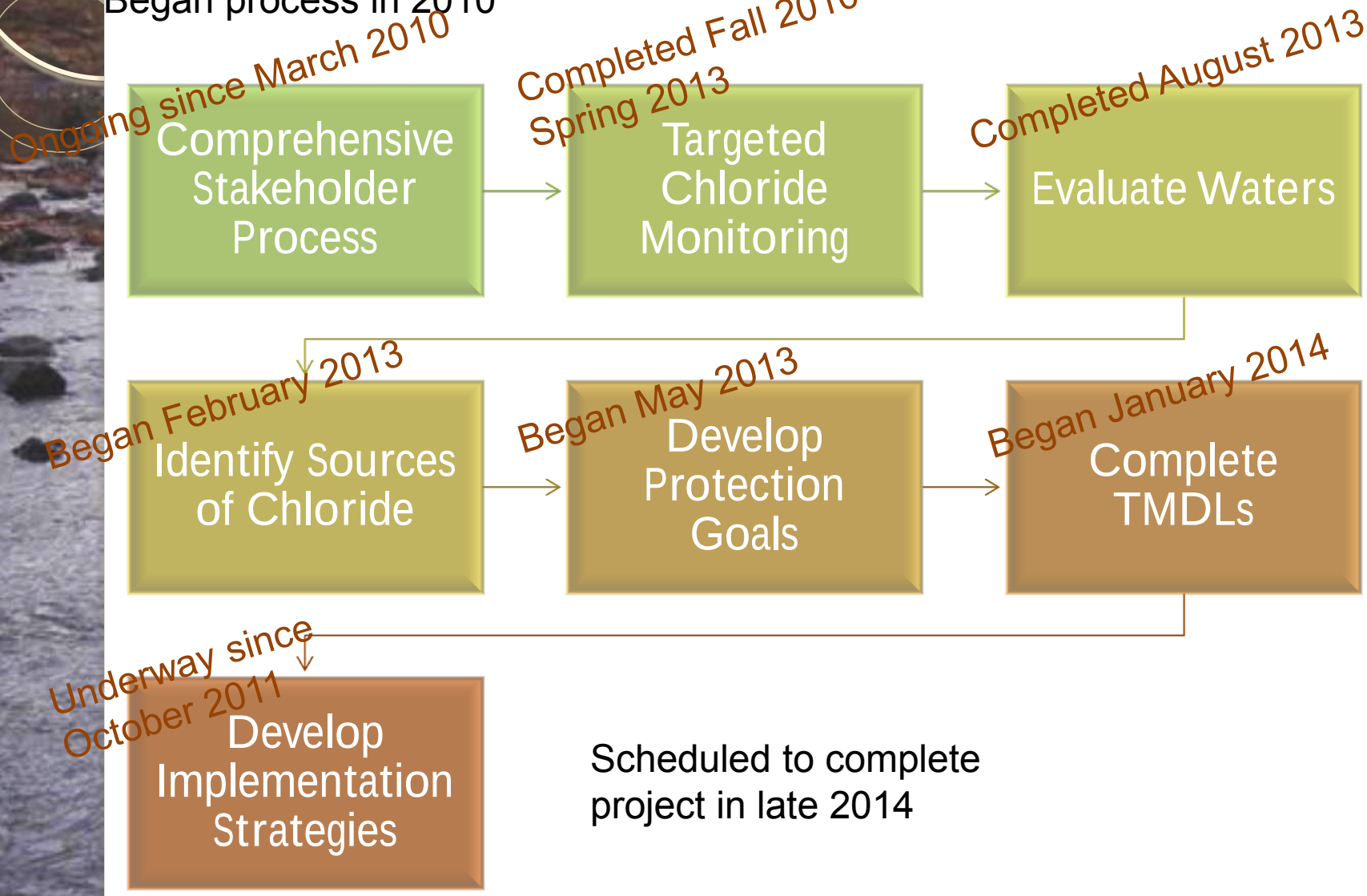
How?

- Develop Chloride Management Plan for the 7-county metro:
  - Complete Chloride TMDLs for all impaired waters
  - Set goals to protect the remaining surface waters
  - Layout implementation strategies to achieve water quality goals

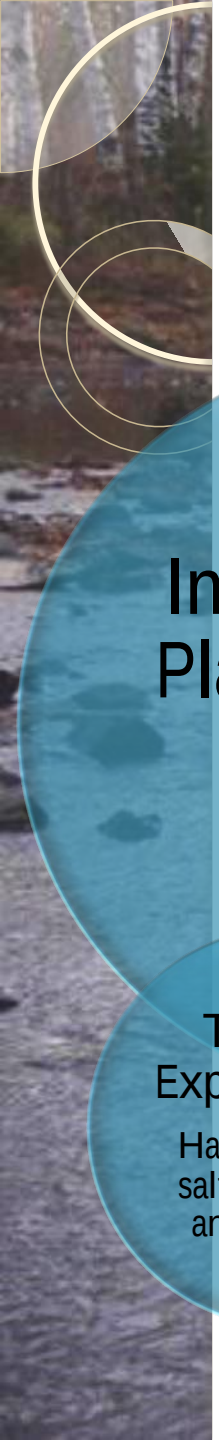
This is a partnership process driven by the stakeholders

TCMA Chloride Project: Timeline

Began process in 2010



Scheduled to complete project in late 2014



Inter-Agency Advisory Team

MPCA, MnDOT, Met Council, BWSR, DNR, USGS, U of M

Monitoring Sub-Group

MPCA, DNR, Met Council, USGS, local partners

Implementation Plan Committee

Winter Maintenance Professionals, Cities, Counties, MnDOT

MPCA project team

Technical Advisory Committee

WMOs, WDs, Cities, Counties, MnDOT

Outreach Group

WMOs, WDs, MS4s, road salt applicators, Citizens

Technical Expert Group

Hands-on road salt applicators and suppliers

Education & Outreach Committee

MPCA & local education specialists

Outreach & General Communications

- MPCA Road Salt & Water Quality Website
- October 2011 - Poster at WRC
- August 2012 - Salt Dilemma Display
- Jan. 2013 - EPA's Stormwater Pollution Prevention Webinar Series: Road Salt Pollution Prevention Strategies
- Numerous press releases and media interviews since 2010
- Presentations at Road Salt Symposium annually since 2010

Project Monitoring Plan

- Monitoring Sub-Group
  - Advised on monitoring methods
  - Collected chloride data
  - Shared results with MPCA
- Includes 74 Lakes, 27 Streams & 8 Stormsewers
- Fall 2010 – Spring of 2013
- Involves several local partners:
  - Capitol Region WD, City of Prior Lake, DNR, Met Council, Minnehaha Creek WD, Minneapolis Parks and Recreation Board, MPCA, Mississippi WMO, Ramsey County Environmental Services, Ramsey-Washington Metro WD, Rice Creek WD, Three Rivers Park District, USGS

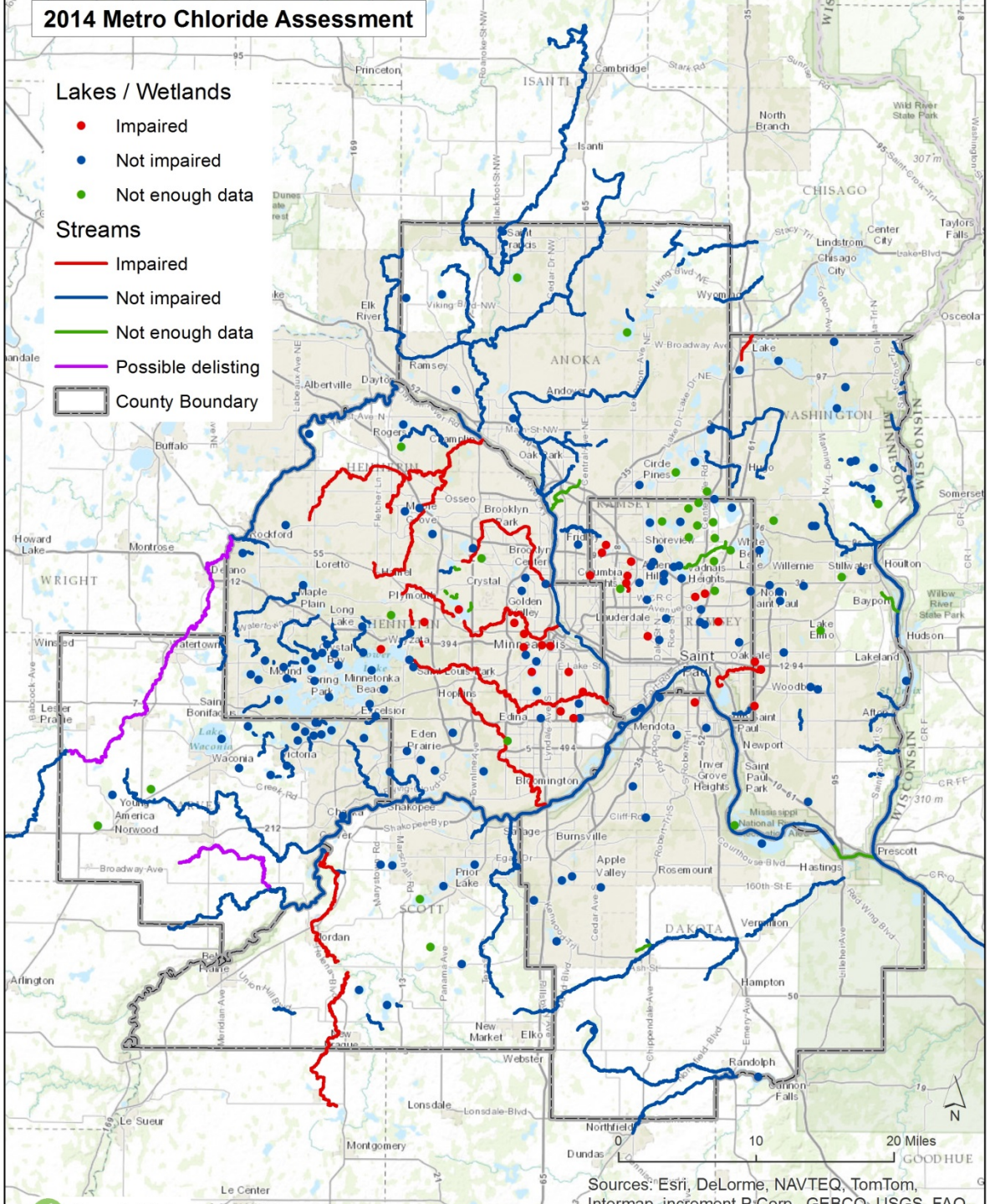
Final Metro Chloride Assessment (Oct. 2013)

- Assessed 335 lakes, wetlands, & stream/river reaches*

  *represents roughly 10% of all waters in the Metro
- 7-county Twin Cities Metro Area only and just Chloride
- Impairment to aquatic life from chloride concentrations that exceed state water quality standards
  - 44 waterbodies listed as impaired Shingle Creek & Nine Mile Creek TMDLs completed already
    - 35 new to the 2014 list
  - 250 waterbodies meet standards
  - 39 waterbodies had some data, but insufficient
  - 2 waterbodies proposed to be delisted
  - 30% (101/335) of the waters assessed were part of TCMA project monitoring

M e Map

ht


2014 Metro Chloride Assessment
Lakes / Wetlands
Impaired
Not impaired
Not enough data
Streams
Impaired
Not impaired
Not enough data
Possible delisting
County Boundary
0
10
20 Miles
Sources: Esri, DeLorme, NAVTEQ, TomTom,

Source Identification

- Researched existing studies and information
- Refined estimate of Parking Lot & Sidewalk application rates for MN
- Working with MPCA staff to identify all permitted entities with potential chloride discharges
  - Includes Waste Water Treatment Plants (water softening)
  - Industrial dischargers
- Others potential sources to consider:
  - Septic Systems (only where there are issues)
  - Fertilizers (literature values)

Protection Goals

- Protecting waters from continued degradation is crucial
- Consensus from IPC & TAC is to focus on the BMPs rather than a number as goals (numeric vs. performance based)
- Working with TAC to determine how to best implement a performance based approach

Performance Based Approach

- Primary objective is to get all winter maintenance programs performing at a level that is using minimal amount of salt
- Prevention is the only option for reducing salt loadings (removal is not viable)
- Same BMPs for protection as for impaired waters
- Winter Maintenance Assessment tool in development is critical to assisting as a planning tool for this approach

Performance Based Approach

- Coordinating with MS4 program to ensure compliance with NPDES requirements for the TMDLs
- Will begin working with TAC to work out the details
  - What will the goals be?
  - Will there be different levels of goals?
  - How will we know when goals are met?
- Collecting water quality data will be critical to determining if implementation of BMPs is resulting in improved water quality

Next Steps – next 6 months

- Complete modeling for TMDLs
- Work with TAC & IPC to develop goals for performance based approach (to be used for Protection and TMDLs)
- Prepare draft TMDLs and Management Plan for stakeholder review and input
- Create & Test Winter Maintenance Assessment Tool prototype

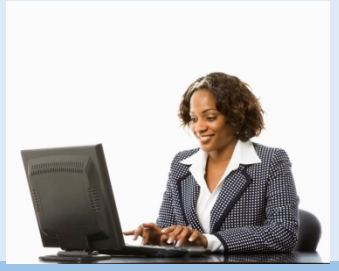
QUESTIONS???

Winter Maintenance Assessment Tool

Connie Fortin

FORTIN CONSULTING, INC.
serving the environment

Vision



To develop the logic for a computer based tool that will provide a way for winter maintenance organizations to:

- Document their current practices
- Chart a path towards improved practices (salt reduction)
- Develop a strategy unique to their operation

What makes this different

- In the past Chloride TMDLs we have made a static list of Best Practices for all to follow
- Human Nature: None of us want to be told what to do, we want to be able to apply our knowledge to our situation and make the best decisions

Target Audience:

Winter maintenance supervisors
Twin Cities Metro Area

Areas of Maintenance:

- High speed roads
- Low speed roads
- Parking lots
- Sidewalks

How to use the tool

Enter Organizational Information

- Organization Name: City of Roundville
- Department: Public Works Department
- Contact Person: Jim Smith
- Address: 211 Main Street, Roundville MN 55444
- Email Jim@roundville.gov
- Phone 763-111-2222
- Date of Assessment 6-06-2012
- For winter operations 2011 - 2012
- Notes: We do both streets and parks

Select the mode:

- Mode 1: Best Management Practice assessment and prediction.
  - Use: see at a detailed level all of your maintenance practices and how they rate (Excellent, ok, poor)
- Mode 2: Salt use assessment and salt reduction prediction tool.
  - Use: chart a path towards change and see what your salt savings might be. Compare to MPCA salt reduction goals. Make different paths to see how your salt savings might change.
- Mode 3: Both

Mode 1: Best Management Practice Assessment and Prediction

- Requires very little prep time and data entry, just need a good overall knowledge of your winter maintenance operation
- About 100 multiple choice questions

69. We select the appropriate material for the pavement temperature

Now?	In next 5 years ?	Practices	code	Salt savings calculation?	Citation	Comments
			★	NO		
	✓	Always	3			For example rock salt does not work well at pavement temperatures below 15 f.
✓		Most of the time	2			
		Don't adjust our product selection based on pavement temperatures	1			
		Don't know	1a			

Efficiency Section: Deicers Subsection

12. What materials do you calibrate for?

Now?	In next 5 years?	Practices	code	Salt savings calculation?	Citation	Comments
			★			
		For every product used that flows differently	3			Matt M, City of St.Paul 3/13 calibrate for one, tried some calibration for second procuct didn't see flow difference so didn't calibrate
✓	✓	For most commonly used product(s)	2			Steve S. UMD. Calibrate for 2 probably will calibrate for more in future 3/13
		Don't' calibrate	1			

Wikipedia?

- The group has suggested that users are allowed to (but not forced to):
- look at background information, citations, rate calculations
- Add information for others to look at

Now?	In next 5 years ?	Practices	code	Salt savings calculation?	Citation	Comments
				NO		
		Always	3			For example rock salt does not work well at pavement temperatures below 15 f.
		Most of the time	2			
		Don't adjust our product selection based on pavement temperatures	1			
		Don't know	1a			

Reports

- Summary of current practices
- Summary of predicated changes

Current Winter Maintenance Practices
City of Roundville Winter of 2011-2012
For maintenance of: High speed roads, low speed roads

ADVANCED BEST PRACTICES

2. How many anti-icing systems do you calibrate: All

34. Where do you anti-ice: All areas where we salt

62. Do you use a salt/sand mix: uncommon

66. Are you using liquids for deicing: Yes

76. Do your snow piles melt into your salt or salt/sand piles: No

133. Do you have a written winter maintenance policy: yes

137: How often do you update your policy: each year

BEST PRACTICES

1. How often do you calibrate your spreaders: Yearly

35. When do you anti-ice: On a regular schedule

134. Does the crew understand the winter maintenance policy: some of them

172. How do you dispose of truck wash water. Sanitary sewer

POOR PRACTICES

3. How many liquid pre-wet systems do you calibrate: less than half

36. How do you treat frost: Apply granular after frost is formed

63. As you increase liquids do you decrease granular: No

75. Do you prevent moisture from entering your salt shed: Poor quality buildings

77. Any leaching out of your storage area: Yes

173. Where does your salt storage runoff go. Storm sewer

Summary:
30 Poor Practices
80 Best Practices
20 Advanced Best Practices

Entry # 114
Joe Smith
8-18-2013
763-444-5555
joe@roundville.gov

Legend:

- Poor Practice
- Best Practice
- Advanced Best Practice

Predicted Changes in Winter Maintenance Practices

City of Roundville Winter of 2011-2012

For maintenance of: High speed roads, low speed roads

Improve Best Practices

35. When do you anti-ice:

current:On a regular schedule

Predicted:Before a predicted frost or snow

134. Does the crew understand the winter maintenance policy:

Current: some of them

Predicted: All of them

Improve Poor Practices

3. How many liquid pre-wet systems do you calibrate:

Current: less than half

Predicted: more than half

75. Do you prevent moisture from entering your salt shed:

Current: Poor quality buildings

Predicted: Ok quality buildings or a mix of good and bad buildings

173. Where does your salt storage runoff go.

Predicted: Storm sewer

Predicted: collect and reuse in brine

Summary:

30 Poor Practices

80 Best Practices

20 Advanced Best Practices

5 Year Prediction:

15 Poor Practices

80 Best Practices

35 Advanced Best Practices

Entry # 114

Joe Smith

8-18-2013

763-444-5555

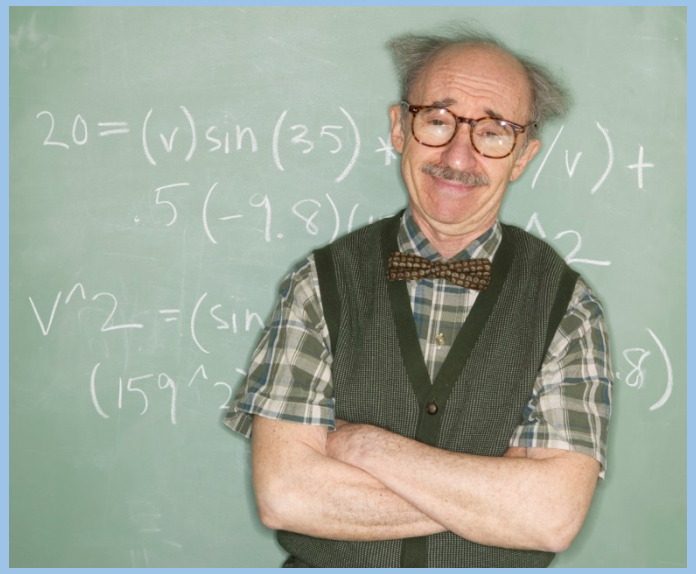
joe@roundville.gov

Legend:

- Poor Practice
- Best Practice
- Advanced Best Practice

Mode 2: Salt Use Assessment and Salt Reduction Prediction Tool

- Requires user to supply more detailed data



The Questions

- About 25 data entry questions
- Some multiple choice questions (which will not be repeated if they have selected the “both” mode).

74. How do you store your salt in the winter?

Now ?	In next 5 years?	Practices	code	Salt savings calculation?	Citation	Comments
			★	YES calculate in winter storage		High salt savings here
✓		Bulk salt pile uncovered	1	1 to 3 = 7% 1a to 3 = 7% x tons of salt typically stored (from input screen)		.125 to 2.5% of the initial weight of an uncovered stockpile is lost per year by leaching for each inch of rainfall on that pile. From Environmental stewardship practices, procedures, and policies for highway construction and maintenance requested byAASHTO, prepared by venner consulting and parsons brinckerhoff 2004. cited in this is the hogbin research. Hogbin, L.E. "loss of salt due to rainfall on stockpiles used for winter road maintenance." RRL report 30, road research lab, crownthorne, UK (1966), in burtwell, M. "Assessment of the performamce of prewetted salt for snow removal and ice control" Transportation research record 1741, trb , washington DC (2001)
		Pile tarped but not strictly maintained	1a			Foudray: Says tarps is not good. Too hard to keep in place. get caught in pile or equipment doesn't work well to protect salt from elements. 12/12/12 cargo boxes can be rented for about $100 per month. Work and look much better than tarpsPut wood along sides to help prevent loader damage to container.
		pile tarped & strictly maintained	2	2 to 3 = 5%		Bob vasek mndot, says tarp is ok if done right. 12/12/12 Woody woodruff Retired mndot mankato 2/18/13 thought minimal loss during winter 5-7%. Barry underdahl city of invergrove. 5% loss from tarped to indoors
	✓	Bulk salt pile indoors or in container	3			Lee flandrich city of st.paul park 2/18/13. All of the salt in the salt sand pile that was not used during the winter and stored over the summer wouid be gone by fall. Had to start over with the mix. (3 scoop block sand, 1 scoop pea gravel, 1 scoop salt) Over the winter months the loss would be minimal 5-7% guess.

33. How many miles of your salted surfaces are being anti-iced?

Now?	In next 5 years?	Practices	code	Salt savings calculation?	Citation	Comments
10	50		h,l	YES	**use this question in rate reduction report only**	large salt savings
		Enter % amount	3	25%	Minnesota Snow and Ice Control Field Handbook for Snowplow Operators 2005	will have to calculate the % change from anti-icing today to anti-icing in near future. Using this percent change (x%) we can do the math: 25% reduction over x% of the route = Y% savings. For example if today we anti-ice 10 % and in the near future we plan to anti -ice 30% x = 20% so 25% of 20% = 5%decrease in salt use.
				50-80%	The FHWA document Planning for Snow and Ice Control states that the use of anti-icing results in a 50 to 80 percent reduction in chemical application required to achieve the same result.	this seems high…? SEE NOTES ON NEXT PAGE

Before the Storm: Anti-icing

INTERNAL CALCULATION

25% is the estimated savings

Calculate your application rate for deicing
A = application rate for deicing
B = A-(A*25%) = application rate for deicing areas that have been anti-iced

How many miles are anti-iced?
C = total miles
D = anti-iced miles

De-iced miles without anti-icing
E = C-D

Total salt use with anti-icing =
F = (D/C)*B + (E/C)*A

Total salt use without anti-icing =
G = A*C

Total salt savings =
G-F

This does not take into account salt use for anti-icing, nor the number of passes after a storm.

City of Roundville Salt saving potential for one year based Winter of 2011-2012 and predicted changes

For maintenance of: High speed roads, low speed roads

2011-2012 Information

5000 tons salt stored
4000 tons salt/sand stored
salt/sand 30/70 mix
1000 gallons brine stored

2000 tons salt used
1500 tons salt/sand used
500 gallons brine used

$70.00 per Ton of salt
$1.00 per gallon of brine

80% salt used on low speed roads
20% salt used on high speed roads

Prediction based on changes

Total = 234.6 tons of salt likely to be saved

Reduction Potential = 11.7%

Had these changes been made for the winter of 2011-2012**, Roundville would have saved $16,422** in salt purchases and used only 1,765.4 tons of salt

Entry # 114
Joe Smith
8-18-2013
763-444-5555
joe@roundville.gov

Salt Savings Potential for One Year

City of Roundville Parks Department 6-06-2011

List of predicted changes

BEFORE WINTER:

0% reduction potential

DURING WINTER:

0% reduction potential

ACCURACY DURING THE STORM:

10% Reduction Potential

*0 Ground Speed Controllers with MDSS>10 Ground speed controllers with MDSS>10% Salt Savings on salt applied salt

EFFECTIVENESS DURING THE STORM

0% reduction potential

REDUCE WASTE DURING THE STORM:

22.05% reduction potential

Bulk salt pile uncovered > Bulk salt pile indoors > Salt Savings 17% of salt in storage

Salt/sand pile uncovered> Bulk salt pile indoors > Salt Savings 17% of salt in sand pile

Receive shipments outdoor with good clean up > Receive shipments indoors > Salt savings .05% of salt ordered

Use up all salt at end of winter > give away salt at end of winter> 5% of total salt purchased

RECOVERY OF SALT:

0% reduction potential

Legend:

- Poor Practice
- Best Practice
- Advanced Best Practice

The analysis in this mode is limited by:

- Available published research
- Willingness of maintenance organizations to provide unpublished research or educated guesses of salt reductions based on changes in a particular maintenance practice
- It is incomplete
- To make it better it should be continually updated as research is done
- We can use the voids to request research or fund research projects

….But it is better than anything the industry has ever had

What can it accomplish?

- Increased awareness of current practices
- A clear list of places where the organization is doing well or could improve
- In rate reduction mode, a list of predicted practice changes and the associated salt savings

Why this is a better approach

- It looks at small areas of winter maintenance where improvements can be made, much more manageable
- Provides insight into current operations
- Allows a flexible approach for improving winter maintenance (ex.: maybe you can't purchase new equipment, but you could alter plowing routes)
- Offers insight that is unique to winter maintenance practices of parking lots, sidewalks, low speed roads, and high speed roads
- Offers a unique collection of many salt reduction informational resources (written and communicated)

Stakeholder Process

Research for this project started in 2011 and has continued into 2014

- Road Salt Symposium survey. The 200 attendees at the 2013 Road Salt Symposium were surveyed for unpublished research information that could be used in the rate reduction section of the tool.
- Literature Searches. Many hours of internet research was done to mine data that exists on the salt savings potential of various maintenance practices.
- Phone calls, phone interviews with members of the advisory team and industry experts to gain insight into various winter maintenance practices.
- Email correspondence with members of the advisory team and industry experts to gain insight into various winter maintenance practices.
- The implementation plan committee formed and led by the MPCA consists of a broader range of professionals dealing with water quality and winter maintenance. This group has approved the concept of the tool and contributed to refining it at a higher level.

The technical expert team has been formed that reflects maintenance leaders in Minnesota. These leaders represent winter maintenance of high speed roads, low speed roads, parking lots, sidewalks, deicer sales and equipment. This team has reviewed all of the logic in the questions, input screens and reports. The members are:

- Tom Broadbent -EnviroTech Services
- Bob Vasek- MnDOT
- Mike Greten -Dakota County
- Mike Scherber-Hennepin County
- Craig Eldred -City of Waconia
- Ryan Foudray -Prescription Landscape
- Joe Wiita-Scott County
- Brian Brown-Three Rivers Park District
- Kevin Nelson-City of St. Paul
- Mike Kennedy-City of Minneapolis
- Matt Morriem-City of St.Paul
- Jeff Warner -Force America
- Mark Fischbach-MnDOT

How it might be hosted?

- A stand alone software program
- On MPCA website
- Organizations can access and use it
- MPCA doesn’t see results unless user hits submit to MPCA button

NOT SURE THE BEST WAY BUT:

- users will want to save their data/session so they can go back in and change wrong answers or finish their analysis a different day
- Next year go in and make changes so don’t have to answer all questions again

Possible uses for MPCA

- Ask organizations to use tool on their own to improve winter maintenance operations
- Ask organizations to voluntary submit reports so MPCA can see where the industry is with the various practices.
- Require organizations that want level 2 certification(in development) to submit reports to MPCA.

- Could accompany annual report for MS4s within an impaired watershed, or perhaps a separate report could be generated that will meet permit requirements.
- Use the concept of this tool, and develop it for other industries and other pollutants as a way to customize a practical path for pollutant reduction.

Possible uses for Winter Maintenance Organizations

- Use tool to assess at a detailed level, their operations
- Use as a teaching tool to supervisory staff, forcing each person to think about the questions asked and comparing it to their routine practices.
- Compare results with organizations of similar size or traffic
- Set a baseline for operations & a goal for improvements
- Use by organization like APWA, Street Superintendents Association, MNLA or others to recognize and award top achievers in an unbiased format.
- Comply with MPCA requests, perhaps easier than writing a report.

Questions?

Connie Fortin
connie@fortinconsulting.com
763-478-3606

Michigan State University: Grounds Facility

133. Do you have a written winter maintenance policy?

Now?	In next 5 years?	Practices	code ★	Salt savings calculation?	Citation	Comments
				NO		Small salt savings
		No	1			may not want this many questions on policy…will weight the score
		Yes	3			Should have thought out your winter mainteiance activities in advance. Given the amount of equipment, crew, priorities and so on to give best customer

Before Winter: Policy Communication subsection

133. Do you have a written winter maintenance policy?

Now?	In next 5 years?	Practices	code ★	Salt savings calculation?	Citation	Comments
				NO		Small salt savings
		No	1			may not want this many questions on policy…will weight the score
		Yes	3			Should have thought out your winter mainteiance activities in advance. Given the amount of equipment, crew, priorities and so on to give best customer

Before Winter: Policy Communication subsection

133. Do you have a written winter maintenance policy?

Now?	In next 5 years?	Practices	code ★	Salt savings calculation?	Citation	Comments
				NO		Small salt savings
		No	1			may not want this many questions on policy…will weight the score
		Yes	3			Should have thought out your winter mainteiance activities in advance. Given the amount of equipment, crew, priorities and so on to give best customer

Before Winter: Policy Communication subsection

148. How often are crew and supervisors trained on conservative use of salt?

Now?	In next 5 years?	Practices	code ★	Salt savings calculation?	Citation	Comments
				NO		
		Crew is trained occasionally	1			
		Most of the crew is trained each year	2			
		Entire crew is trained each year	3			Ryan F would like the training questions more combined. 4/13

Before Winter: Training subsection

149. Do crew and supervisors understand the long-term impacts of salt on our waters?

Now?	In next 5 years?	Practices	code ★	Salt savings calculation?	Citation	Comments
				NO		
		No	1			
		Yes, Some of them	2			
		Yes, Everyone	3			Ryan F would like the training questions more combined. 4/13

Before Winter: Training subsection

150. Do supervisors participate in or attend training with crew?

Now?	In next 5 years?	Practices	code ★	Salt savings calculation?	Citation	Comments
				NO		
		No	1			
		Sometimes	2			Ryan F would like this combined with other questions 4/13
		Yes	3			

Before Winter: Training subsection

153. Do you educate your customers about salt, the environment and what you are doing to be pro-active?

Now?	In next 5 years?	Practices	code ★	Salt savings calculation?	Citation	Comments
				NO		
		No	1			
		Some	2			
		Yes	3			

160. Do you actively promote lower speed, safer customer behavior during winter?

Now?	In next 5 years?	Practices	code ★	Salt savings calculation?	Citation	Comments
				NO		
		sometimes	2			Tv, newspaper, radio announcements, signs, email, web alerts to relay road, sidewalk, parking lot safety tips to users
		No	1			
		Always	3			
		We reduce speed limits when necessary	3a			the faster the traffic the sooner the dry salt is blown off the road. Can we have a winter speed limit during salting to help keep salt on road. Any research to show if this would help.

Before Winter: Regulations subsection

161. Do you actively promote proper storage in your community? (beyond your operations)

Now?	In next 5 years?	Practices	code	Salt savings calculation?	Citation	Comments
			I	NO		
		No	1			
		yes	3			Offer private contractors a chance to donate left over salt to you so they don't use it up at end of the season., make an ordinance for anyone storing salt in your community. Educate others.

172. How do you dispose of truck wash water?

Was w?	Plan next 5 years?	Practices	code	Salt savings calculation?	Citation	Comments
			★	YES		
		Remove salt from truck wash water, keep salt water, discharge clean water	3a			Would probably have them enter how many gallons of brine (what concentration) they filter and reuse and calc. how many pounds of salt that saves to make brine
		Remove salt from truck wash water, keep salt water, reuse clean water	3b	.		
		Dispose of wash water in sanitary sewer(goes to treatment plant)	2			
		Dispose of wash water in storm sewer(goes to lake,	1a			

After Winter Section: Salt Recovery

173. Where does your storage runoff water go?

Now?	In next 5 years?	Practices	code	Salt savings calculation?	Citation	Comments
			★	NO		
		Collect runoff from storage area and reuse in brine system	3	.		State of virginia now doing this 11/13
		Allow runoff into pond with no connections to other surface or ground water systems	2a			Salt water that leaves salt shed, salt apron, loading area and so on.
		Direct runoff into sanitary sewer ?	2b			

After Winter Section: Salt Recovery Subsection

(cont.) Where does your storage runoff go?

Now?	In next 5 years?	Practices	code	Salt savings calculation?	Citation	Comments
			★	NO		
		Allow runoff into storm sewer	1a			
		Allow runoff onto landscape	1b			
		Allow runoff into pond with connections to either surface or ground water systems	1c			

After Winter Section: Salt Recovery Subsection

174. Do you encourage research and development: to catch/filter salt before it enters our water, surfaces that do not need salt, ways to melt w/o chemicals?

Now?	In next 5 years?	Practices	code	Salt savings calculation?	Citation	Comments
			★	NO		
		yes				
		no				

After Winter Section: Salt Recovery Subsection

174. Do you encourage research and development: to catch/filter salt before it enters our water, surfaces that do not need salt, ways to melt w/o chemicals?

Now?	In next 5 years?	Practices	code	Salt savings calculation?	Citation	Comments
			★	NO		
		yes				
		no				

After Winter Section: Salt Recovery Subsection

177. Do you desalinize (take salt out) from ground water sources?

Now?	In next 5 years?	Practices	code	Salt savings calculation?	Citation	Comments
			★	NO		
		yes	3	.		
		Encouraging others to remove salt from ground water	2			
		no	1			

After Winter Section: Salt Recovery Subsection

178. Do you remove salt from the discharge water at the water treatment plant?

Now?	In next 5 years?	Practices	code	Salt savings calculation?	Citation	Comments
			★	NO		
		yes	3	.		
		Encouraging others to remove salt at the water treatment plant	2			
		no	1			

After Winter Section: Salt Recovery Subsection

TCMA Chloride Project

Education and Outreach Committee Meeting #4

Attendees: Brooke Asleson, Rachel Olmanson, Angie Hong, Leslie Yetka, Melissa Bokman, Sage Passi, Kathleen Schaefer, Kellie Thom, Erica Sniegowski, Jeanne Prok, Mollie Thompson, Connie Fortin

March 11, 2014, 10am-12pm, MPCA office, room 6-3

TCMA Chloride Update: presentation (Brooke)

Comments/discussion during presentation

- There is guidance on how to collect consistent chloride data. There has not been a lot of data collected from the deepest part of lakes.

- **Concern:** There have been some emails challenging testing methods in a lot of cases, concern if chloride impairments are accurate. **Response:** MPCA is preparing official responses to all comments. Methods used for lab analysis are accurate, standardized. **Concern:** Is the method of a single grab sample at certain depths accurate for chloride? **Response:** Yes, this is an accurate way to collect data, not anticipating any changes in protocol. Methodology for collecting the data is consistent and standard, everyone uses it. There is no erroneous data; monitoring data was collected properly, confident that data is accurate, collection done appropriately.

- **Concern**: Metro-wide chloride reduction, where do we stand on public safety? Last two winters were bad, will there be fines? How will this be monitored and controlled, will usage be reported/monitored? **Response:** The goal is to collaborate with winter maintenance, never want to compromise public safety. Use less salt, but still maintain public safety. Will not do a metro-wide reduction, each watershed will do own TMDLs, every impairment will have separate TMDL, and this is an EPA requirement.

- **Concern:** Plow drivers do not know where watershed boundaries are. How do they know what rate to use? **Response:** Not assigning reductions for specific TMDL. Goal is to make progress and want everyone to be making progress.

- What BMPs do we want folks to be using? Use better practices, but no detailed regulation, because every city/county/etc. is different. Everyone will come up with their own plan to reduce salt usage. MnDot already at a high level for reducing salt usage. There will not be a specific percent reduction/no fines. Partner with MnDot and come up with a practical/unique approach. Support Mndot and other winter maintenance experts.

- Interactive map has been developed (ArcGIS): link on MPCA chloride website.

Winter maintenance assessment tool presentation (Connie)

- The tool is going to use a flexible approach, organizations can pick and choose.
- Have been working with technical experts in developing the tool. All questions have been brought to a technical committee for input and approval.
- Target audience is winter maintenance supervisors in the TCMA. Don't expect plow drivers to use tool.
- Information will be entered in to the tool, three different modes to choose from.
    - **Mode 1**: BMP mode: asks questions, no prep time, multiple choice questions (star symbol: means that this question will be asked to everyone). Tool will generate a BMP report which shows green (excellent practices), yellow (good practices), red (poor practices) answers, also includes a summary section. Questions ask about practices that are used presently and also ask for predictions for future (5 years). There will also be a details button associated with questions. This will include background information that relates to the specific questions. Second button: input information (calibration info). Will be able to add data, since data set is not complete.
    - **Mode 2**: assessment and prediction tool. Mode 2 will assess current salt use and salt reduction prediction tool. This mode will include about 25 questions, requires concrete info to be entered. Calculates salt savings based on responses. Equations used to calculate savings are accurate. A report will also be generated: summary of what was inputted, calculates how much salt will be saved, numbers not based on an average, based strictly on practices and data that they input. Not based on year-to-year variations in weather. Second part of report: more detailed breakdown. There will be some explanation with report on what percentages actually mean. Rate reduction: not a lot of research on salt savings. Polled people at road salt symposium to submit savings. Not accurate or complete, but better than anything else that exists. Input button: gather more data as people start to use it, larger dataset.
    - **Mode 3**: both.
    - Training classes: small steps to improve performance and accuracy to decrease to waste. Report on 5 year plan: summarizes what they said they are going to do.

Discussion about how the tool will be used, how the data will be used, and how the tool will be accessed.

- Goal is to use this as a planning tool, using the tool will not be a requirement; data will not need to be submitted to MPCA.
- Hopefully the tool will help people make more informed decisions and lead to the best reduction potential.

- Will the data that is entered go into database? This is a web-based tool, not connected to PCA; the PCA will not directly receive the data. Maybe people could choose to email report and share info. However, right now this tool will be hosted off-site. Once it's created, maybe it will be hosted on a website, but data is not integrated into MPCA database.

- Plan to use this tool for training, also planning to train people how to use the tool.

- Could it be an app? Just web-based tool for now. Will be an off-site, public website that people can use.

- How is this funded? This is funded through the MPCA, through a period of time, hired contractor through June 30, 2016. Will decide how to proceed once contract is up.

- How long will development of tool take? Need to test out with technical experts, first year will be development. After the first 6 months it will hopefully be mostly done, after that work out bugs. Year after that will be more of a maintenance mode, have contractors support it.

- Do WDs/WMOs have people on the testing team? Not yet, technical advisory team will be first round of testers. There are winter maintenance experts on Connie's team, supported, come up with plan to get more folks to test it in the future, more wide-spread testing in the future after original group provides feedback.

- The tool will be a great way for winter maintenance folks to see how they're doing and look at predictions for the future. Train supervisors, areas of concern. Could be baseline. How can organizations learn from others?

- Reports can also be generated.

Discussion about education questions (handout: education committee slides). Are questions clear, should more questions be added, are we missing anything? What will be the most effective ways to train people on how to use the tool?

- All questions have been approved by everyone on the technical team. These questions are related to education and review.

- Tool is set up so that you will be able to go back and change answers, don't have to start over.

- TMDLs: implementation strategies, usually consultant will run model: list of BMPs that will reduce the most, this tool will allow people to do this on their own. Want to be practical and educational.

- There are a lot of yes/no questions. More questions, relate to more activities. Could questions be more in depth?

- What if question is skipped? Will the person using the tool be able to answer all the questions? Ideally the supervisors will be answering questions. May have to call different people and ask.

- Wording of some of the questions: some people may choose not to answer some (if they don't know).
- Some questions could have the option to answer N/A. Good to have a way to track why questions weren't answered, maybe could be part of the report (come back and enter more data).

- Questions don't change based on answers provided. If doesn't apply, could leave out other related questions. Don't want to add another layer of complexity to the tool, the way that it is set up is the simplest way to code it.

- Rather than questions that say "Do you….?" instead say "Do you/or your organization….?"

- What if they decide to skip it? Haven't brought it up yet, something to think about.

- Question 174: Do you encourage research and development: to catch/filter salt before it enters our water, surfaces that do not need salt, ways to melt w/o chemicals? This question should be asked to lead technical person at organizations. Encouraging within staff/Mndot? Drivers come up with great ideas, salt solutions program. Questions directed towards head technical person in organizations. Who would cities be encouraging? Question needs more of an explanation, or examples should be included with this question (174).
    - Examples could include: city of Burnsville: idea for research for lower salt options (ex). People could click to see more details. Bringing ideas to city council. Maybe engineer could encourage.

    - Crystal: 319 project, porous pavement, city encouraging research.

        - Supervisor may not know answer. May need to add collaborative language to this question. Change language, Connie can run it by group, designed questions so they can just click, focus on parking lots, sidewalks, and roads.

        - May need to have more specific questions for cities. Way to shift away from yes/no questions, to get people to think about what they could be doing. Could click on information button if they want to see more. Helpful for people filling out survey, list various research money for local agencies.

- Addition question to be added: do you apply for grants/funding to do research? This question could include more information, info button: list all possible funding sources.

- If you give Connie example, she'll put your name and date on it, so it can be cited. Ability to call people and ask more about it. Follow up info and resources of where people can get information. If not attending training, when is the next training? No option: separate box that may come up with info that would be helpful, example of winter maintenance. Screen up front, that when you click on it what happens, or not necessarily click but if mouse goes over, bring up.

- Orientation about how to use tool, recognize value. Asking them to spend time answering the questions. What is the best way to introduce this tool to workers? What is best way to introduce

tool? Computer training/link? Make tool so people don't lie when answering questions. Have a couple people try out tool, see how it goes. Weekly meetings, best results (GIS training ex). People need support, may be better for people to do as a group, especially at the beginning. Constant communication is helpful, funding? Most economical path.

- Question 177: Do you desalinize (take salt out) from ground water sources? This questions could be thought of as more of an educational question to bring awareness, can't remove salt, again may need to include additional information, roll-over mouse feature, info could pop up.

What can we do to reach private applicators? Discussion of additional questions to include that will target private applicators.

- Could focus questions based on type of roadway: counties/MnDot (high/low speed). Could ask on input screen on how salt is divided over maintenance areas.

- Are there enough questions in here about private applicators? Need to get people thinking about private applicators. Add questions to target private applicators/think about? Another information box could pop up.

- Other possible question: Are you trying to bridge gap with private sector? Private sector probably won't use tool as much, completely unregulated group. There is no certification process they have to go through.

- Need cities to be hiring people that are certified. Could write into city code, allow them to do business within the cities, similar to pesticide application, could be similar for salt applications.

- Question to add to tool: Do you have city rule that requires private applicators to be certified?

    - Have any cities tried to do this? Haven't heard of any cities doing it, how would it be enforced. Counties don't have the same power as cities. Don't have category for city questions (low-speed roads). N/A, info button, examples, example of how the language is written, could tie in to tree, pesticide applicators. New Hampshire has it in law. This may be introduced in the future, PCA could introduce a bill, SIMA (Snow and Ice Management Association) has contacted PCA numerous times. SIMA: parking lot and sidewalk winter maintenance will give them protection from slip and fall lawsuits. Provide protection so they won't be sued, if follow protocol.

- Training that 9-mile did with school district: safety trainings with all schools.

Other possible questions to include.

- Have you conducted any trainings? (N/A as option).

- Do you host trainings?

- Are you willing to collaborate with WD's to organize trainings? SFM, Bloomington public schools, watershed hosted trainings. School maintenance.
- Do you collaborate with schools/churches/businesses etc.?
- Do you do any outreach to get to homeowners?

- Question 153: Should change the word customers to something else, should use a term that is more general, or define what a customer is.
- Do you do outreach for your residents/constituents/facility users? MnDot is always educating.
- Do you educate constituents about public safety? Separate, about how much salt is used at home. BMPs should put in MS4 permits, info in city newsletter about using less salt (snow/ice).

What types of audiences will be using the Winter Maintenance Tool?

- Usable for multiple audiences in terms of tool.
- Road distinction, identify major audiences that don't fit into these categories that are big contributors to salt usage.
- Adapt tool so that it could be used by a broader audience.
- Right now the tool is set up so that anyone can use it, available on a website for anyone.
- Questions selected: parking lot vs road. NA option, can't limit to just cities. Counties could also put out educational resources/outreach.
- Cities want flexibility to improve scores in areas that may not be normally looked at (education/outreach). Questions should be static, not optional. Any new questions should be run by group.
- Training opportunities available on tool. Put in links to training, or list which organizations have training. How will it be kept up to date? Listed MPCA, MPWH, generic website links.
- Do you host trainings for other local agencies/private applicators in area? For ex. School districts, churches, etc. Bring up trainings, examples.
- Do you have in-house training? Getting ready for winter day. House it at the city level, good idea, encourage. LTAP: cities provide training (parking lots/sidewalks): in-house training.
- Question to target education of homeowners about proper salt use. Falls under: do you education customers. Newsletter: target people who are putting salt on their driveways.

Next steps for Education and Outreach Committee:

- Email Connie/Brooke examples that you want to see included in the tool, could include brochures/video/trainings. Send comments by 3/25, Brooke/Connie will compile and send back for final review. Then Connie will take comments and work with tech team to integrate. Can include the audience that the example would apply more to.

- Think about a positive ways to introduce tool, see value in, not regulation. This is a planning tool.

- Funding for training? Maybe host 1-2 trainings, train-the-trainer?

- Education Committee will meet 1 or 2 more times to discuss train-the-trainer and any other ideas.

TCMA Chloride Project
Education and Outreach Committee Meeting #3

Meeting Agenda
April 12, 2012
9:00 a.m. – 12:00 p.m.
MPCA office, room 2-B

Outcome: Review work done on chloride communication/outreach to date, determine what is still needed/missing, and evaluate the EOC's future as a group.

1. Review/Comment on MPCA's updated chloride website: http://www.pca.state.mn.us/index.php/water/water-types-and-programs/minnesotas-impaired-waters-and-tmdls/tmdl-projects/special-projects/metro-area-chloride-project/twin-cities-metropolitan-area-chloride-project.html#tips
2. MPCA's new materials – postcard & *draft* YouTube video for next winter release.
3. Any other new materials not on updated MPCA chloride website?
4. TCMA Chloride project & general road salt communication/outreach moving forward (MPCA comm. Plan attached – looking for input, **how else can MPCA help you?**)
5. Road Salt State Fair display – **would you be interested in having a display that you could use at events?** I have attached our mock-up from last year for your consideration.
6. EOC's future – TCMA project, potential 2012 LCCMR partnership and in general (long-term vision)

TCMA Chloride Project

Education and Outreach Committee Meeting #3

Attendees: Brooke Asleson, Barb Peichel, Connie Fortin, Claire Bleser, Paula Liepold, Leslie Yetka, Katie Humprey

April 12, 2012, 9am–12pm, MPCA Office, Room 2-B

Comments on MPCA's updated chloride website:

- Create buttons for each audience on the website under resources tab.
- Add funding opportunities to website
    - Safety-workers comp group (SFM), OSHA has grants for handheld applicators, other tools, cost share opportunities. Anything you can do to minimize slip & fall incidents- for workers & public safety.

Updates

- Nine Mile Creek Watershed District developing a 3 hour workshop for schools
    - Most schools contract night plowing but do their own during the day
    - Workshop will target grounds supervisors, facilities managers
    - Will use MWMO small sites videos, including entrance zoning, and slip and fall exercise.
    - Developing poster (cheat sheet) to hang up in schools, site evaluation exercise: natural and physical environment.
    - Focus on Hennepin County first, then will open up the training to the metro area.
    - Eventually take workshop state-wide (SFM has an annual conference in May).
- Mississippi Watershed Management Organization (MWMO) has updated small sites video; Andy has 500 copies of the old video if anyone wants some let Andy know.
- Connie: SIMA involved in insurance and liability discussion (article in newsletter)

Discussion about existing 319 funds

- Contract expires this year, leaving contract open if left over funds are available
- Need to spend funds by Sept. 30, 2012
- How are others planning to fill this gap?- Fortin Consulting is applying for next round of 319, if awarded those funds will likely not be available for 1 year after awarded.

How will we obtain accurate data on material usage and what will this data be used for?

- Not a good reporting method of material usage, most agencies don't know because they don't have access to equipment- could improve if we had funds available for upgrading with AVL/MDSS, can be expensive.

- Kirk Pape at MnDOT runs the AVL/MDSS program at MnDOT. Initial costs are burdensome, there is a monthly fee. Could Kirk send out a letter to cities to introduce the MDSS system?

§ All counties will have this equipment available soon through state aide. MnDOT will have all trucks outfitted in 5 years, some cities already have this system installed, Nine Mile and Minnehaha.

§ Have a list of tracking systems for contacting cities regarding their tracking method for TCMA chloride project. (Ask Connie if she can put this on paper for us).

§ Let local WMO know about meetings with cities to partner with us on the request/message.

§ Have cost share opportunities available, Nine mile has put $100,000 into improvements. What are cost savings?- Cottage Grove may have an estimate. This information would be useful for conversations, website, TCMA project, want to share this information with everyone.

§ Dakota County would be a good example. Look to see if they are eligible for an award, or come up with criteria for an award of recognition within any watershed district, see if we have anyone who meets this.

§ Road Salt Symposium recognizes cities, but misses anyone they don't know about.

    § Connie is developing an assessment tool for organizations to utilize which will evaluate their current practices and see where everyone is at.

§ The TCMA project implementation plan will give access to clean water funds for 7 county metro area. LTAP funding existing for new, creative ideas.

§ Usage survey could be really useful as a needs assessment, prepare questionnaire & send to team for review. Should include an action in there, have you considered this action.

Discussion on potential partnership with LCCMR in 2012

    § LCCMR: discussion about the need for a refresher course, or level 2 training for maintenance crews.

    § MPCA, Fortin Consulting and MWO submitted LCCMR proposal to address this need to update the existing training.

- Also looking at removing water softener sources of chloride. Goal is to work with stakeholders to develop a long-term sustainable way to institutionalize the training program.

- LCCMR proposal was submitted in April and included a rough outline of continuing training, expanding training, an automated TMDL tool, offer training to new audience (first cut is the committee, citizen appointees and legislators).

- Organizational assessment tool will potentially have a huge impact on the industry.

    - Would be in place July 2013; will hear back from LCCMR in June, which would then require developing a detailed work plan and establishing partners.

    - Would be beneficial to see a concerted effort to package these trainings, more of a collaborative approach. Might be a better sell for the township or smaller cities to show how the funds would be spent, but would want commitment ahead of time.

    - Paula will work on developing strategies on how to package the trainings and will send to the group for review.

What are the current training costs and what are our future training needs?

Training Costs

- MWMO is willing to pick up the cost of the trainings for the 1 year gap, but how will we deal with this?

- RWMWD asked people what they would be willing to pay for training; $20-25 was the range they suggested. People are willing to pay for this in places where it has become the norm.

- Extension currently charges $35 for the training, but they are not as successful as the WMOs as promoting it.

- Training budgets for cities have been cut recently. The estimated cost of doing the training for 1 year is $45,000; this estimate includes 30 classes and updated material (Minnehaha WD has money to contribute).

- MWMO is doing a cost share program for their cities to do trainings. 6 organizations, if each added $5,000 into a training fund they could offer 18 trainings for the year that you would choose. Is that a reasonable amount for the certification training? Would have to be included in the 2013 budget for a lot of watersheds.

- Coalition of organizations like NEMO, would need a coordinator, who would do that – Connie?
- Rain garden workshops stared out as free with food and now they are charging and still have great turnout.

- Train-the-trainer? Kathy teaches for $350 through LTAP, but is not result in a certification, exact same class.

Training Needs

- Where is LTAP on updating the winter roads manual? – Claire encourages others to request this be updated. Kathy is updating it and it has been submitted.

- LCCMR proposal included an update to these materials, maybe we should all contact our legislators to support this proposal. Nine Mile has no problem to fund the training.

- What about creating a cohort, packing the training to be more appealing for funders? WMOs host the trainings, then MPCA funds trainers. If we have some cities committed to attend the training that will send 1/3 of their staff on a continual basis to receive the training. Link to DNR clean water group. Seems like if there is a good local promoter (WMO) there is good turnout.

- For Minnehaha the training is a bit more haphazard, would be nice to have a more consistent, collaborative approach. Include rain garden maintenance, lawn care and road salt.

- Three certifications: winter maintenance of roads, parking lots & sidewalks, and turf. If you want a schools crew training contact Claire, differs from regular training in that they focus on daytime, entrances. Combining small sites maintenance and parking lot & sidewalks training. Would be the same for hospitals, churches, etc.

- Would rather put the trainings on for a larger audience and not limit the area to watershed area. Training is most effective in groups of about 40-50 people, there is more opportunity for discussion. If groups are larger (65+) it may help to have assistants to help with lead discussion.

- Occasionally there are private companies that want their own training. Could maybe offer training to companies who have 40 staff that want to be trained.

- Important for supervisor to be present at trainings, accountability helps with the group dynamic, supervisors hear the issues and it also shows the importance of the topic.

    - Evaluations number one comment is to have supervisors at the trainings.

    - Louise added an insert to her brochure that has helped get more response from supervisors.
- For churches: add a letter to the brochure explaining why it's important (personally sign). May need to include a sheet of best practices for getting folks to these trainings.

- MIDS looking at using trainings for allowing credit for TMDLs.

How do we keep track of who attends trainings and how do we continue to recruit people for trainings?

- RWMWD keeps track of mailing lists so they know who has sent staff to the trainings, and determine who is consistently attending trainings. RWMWD will be starting a recognition award program- award for constantly doing the right thing.

- How can we determine who's not going to trainings? Claire cross referenced the certification list and asked how many drivers each city and county had, and said that you have x number of drivers that still have not attended. She sent an email and was able to get everyone trained.

- Use the science to determine target areas.

- A stronger metro watershed association would be helpful; approach metro MAWD to see if they can somehow support this effort. Claire is presenting at MAWD conference. Maybe someone has an intern that could do this for the metro.

- Could use list serve of district administrators and send out message about the work going on and next steps.

Results of the survey (reported by Leslie) and discussion of potential communication/outreach strategies

- 700 results that haven't been reviewed it in detail yet. Who is going to analyze this data?

- People don't know how much product to use, but they do understand that they shouldn't use too much.

- 40% said they use products that work at cold temps, next was based on environments.

- 67% get information to them via email, 33% said website. Most get information from the store where they purchase the product.

- Everybody goes to gas stations, somehow provide incentives to get a big gas station chain to put a sign out that has the message, we don't use salt to protect water. Could help us educate the public with a demonstration site. Creative energy should be focused here.

- Paula received a call from Star Tribune about doing a story on the survey, should we do a story now and after about the results (Katie Humphrey)?

- Connie and Brooke will work out the details of analyzing the data; Andy's group might be able to help**.**

- Build this information into the website, homeowner section. Add tips to products like shovels

- Contact stores about adding messages.

- Reach out to local media to interview about road salt.

TCMA Chloride Project
Education and Outreach Committee Meeting #2

Meeting Agenda
December 7, 2011
1:30 p.m. – 4:00 p.m.
MPCA Board Room

Outcome: Create a list of proven strategies to principal audiences for chloride education. Begin discussion of ways to share those strategies with others. Share ideas about communication messages.

1. TCMA Chloride project update and introductions
1. Strategies for chloride education (for each audience – public road applicators, private applicators for commercial properties/parking lots, policy/decision makers, and citizens/homeowners). What's worked well? Share items you brought. How can we best share these strategies with others? What do you want to try in the next year? What are barriers to educating these audiences?
2. Communication messaging – (assuming some folks have and some folks want to provide information this winter to the general public, what are our 1-3 main messages we want to get across to folks? Do people also have a catchy phrase to use along with that?)
3. Next steps for EOC (meeting dates and topics, etc.)

TCMA Chloride Project

Education and Outreach Committee Meeting #2

Attendees
Present: Brooke Asleson, Barb Peichel, Connie Fortin, Claire Bleser, Paula Liepold, Joan Nephew, Anna Kerr, Sage Passi, Sue Burns, Dan Miller, Kathleen Schaefer, Louise Watson, Jenny Winkelman,

Not present: John Bilota, Angie Hong, Shane Missaghi, Kellie Thom, Leslie Yetka, Cori Rude-Young

December 7, 2011, 1:30-4pm, MPCA Board Room

Updates

- MPCA and partners are collecting their second season of chloride monitoring data
- Mississippi Watershed Management Organization (MWMO) – is overbooked for their winter maintenance (level 1) training tomorrow; has a draft of the new video for homeowner winter maintenance; will be releasing videos on cable TV
- Fortin consulting/Freshwater Society – preparing for the Road Salt Symposium (Feb. 2nd)
- Fortin Consulting - working on TCMA project road maintenance recommendations
- MnDOT – providing trainings to staff
- Scott County – holding a training session; communications in county newspapers
- Nine Mile Watershed District – will present in Jan. to a builders association on winter maintenance; folks have reduced rates by 50% based on trainings
- Reminder that MPCA's Phase I feasibility study is available online

Strategies for chloride education – we want to know for each audience (public road applicators, private applicators for commercial properties/parking lots, policy/decision makers, and citizens/homeowners) what has worked well or what types of activities folks want to try. The group picked private applicators for commercial properties/parking lots as the first one to discuss.

Target: Snow and ice removal by private contractors for large parking lots (may include sidewalks):

- There are a number of folks involved in this practice
    - Property Owners/Managers (key people are the Operation Managers & Contract Developers)

- Contractors (key people are the Onsite Contract Supervisor & Staff/Crew applying products)
- Building Staff (key people are the folks applying product to front entrances – may be linked to operations manager listed above)

- Front entrances may not be a part of the contract.
- These properties may vary in size from a bank to a large mall complex.
- There may be a trigger for when people apply product – could be a 1" snowfall for example.

What do we recommend to others that we have tried and we know works?

Trainings (MPCA Road Salt Education – Level 1 Certification) – the website can be found at: www.pca.state.mn.us/programs/roadsalt.html.

- Sending people (all levels) to trainings.
- If you fund other projects (such as rain garden development), then require those folks also attend winter maintenance trainings.

Guidance on hiring winter maintenance professionals

- Brochure on how to hire winter maintenance contractors – hints such as don't just go with the lowest bidder, require them to be certified, etc. (this brochure is currently in development by Nine Mile WD)

Videos

- Share the video for small sites winter maintenance (DVDs available from Mississippi WMO and also link to youtube is available on MPCA website, etc.).

Meetings/Conferences

- Get people to attend the Road Salt Symposium

How recruit/target people for trainings?

- Find out who attended the nursery/landscape winter maintenance workshops and look at their zip codes to find people in your area
- Target the properties in your area and create a list of the property owners/managers (and staff)
- Develop a list of contractors (and staff) in your area that do winter maintenance – examples of private contractors are Simons, Duke, Opus, RPS, Donaldson Company, & Twin Cities Outdoor Services.
- School districts – create a list of groundskeepers and staff

- Start with member cities and find out who they recommend to attend trainings and then have them help you encourage private applicators to attend trainings - particularly if you can get a mayor on board and use his/her name. It is helpful to have the cities contact the properties. Tie this together with other water quality initiatives going on.

- Start by targeting malls, hospitals, universities, etc. that are near waterbodies.
- Could contact condo associations and townhome developments – they have councils (help them with guidance on how to hire winter maintenance contractors).

- Are there contractor associations?

- Look at the list of folks that Watershed Districts permit for construction and use that list to find contractors.

- Note: phone calls work best at getting folks at trainings compared to email or mailings.

- The challenge is how to peak their interest.

What would we like to try?

<u>Trainings/Certifications</u>

- Hold shorter trainings focused for property owners/managers/supervisors. Sometimes staff attend trainings, but the supervisor/manager needs to approve any changes they want to make. City of Eagan staff attended training and wanted changes. Some supervisors have attended trainings.

- Have trainings just for folks who are writing the contracts.

- Link MPCA certification to something like "Green Cities" so there is credit given to folks working with or hiring certified applicators.

- City of Minneapolis for example wants all subcontractors to be certified.

- Would be helpful to tie the educational efforts to their stormwater permit – both in the good housekeeping and educational sections – would be good to give them credits towards their Total Maximum Daily Load (TMDL) projects if their staff were certified. Could provide specific education strategies that could be tied to load reductions for chloride. Chloride can be reduced in use, but can't be removed.

<u>Guidance</u> on hiring winter maintenance professionals

- Provide an example of a draft contract (for example, having the contract be based on work done instead of amount of product applied and making sure people are certified-that they have attended a training, not just low-bid) to share. Folks that might have something are Donaldson Co, RPS, and SIMA (Snow and Ice Management Association), and Twin Cities Outdoor Services.

- MPCA created some draft language that we may be able to build off of. Nine Mile WD is working on some guidance too.

Events

- Advertise at the MN Nursery and Landscape Association (MNLA) meetings – need to talk with planning committees to get a speaker slot.

- Have a presentation and poster of the basic problems and solutions and share those at events as talks or as a booth. MNLA, Green Expo, SIMA events, etc.

- Green Expo (in January) – MNLA is the lead organization. They have a pre-conference day of certification courses so we could see if we could include training in this slot. But it would have to be advertised and cost might be an issue (MNLA events can be costly).

Additional strategies

- Work with League of MN Cities on their insurance trust – reducing costs to cities and liability too – a science based plan.

- Use contractors that have changed practices and have them share these lessons learned peer-to-peer at expos, trainings, etc.

- Do a feature story for TV/Radio/Newspaper of why contractors have made decisions to use less chloride.

- Have apps for cell phones that provide calculations about how much product to use on their areas.
- Have people use the Road Weather Information Service (RWIS) to provide nearby state highway pavement temperatures which could be pretty similar to their parking lots.

- Provide hand-held pavement sensors and/or hand-held spreaders or coupons/discounts on them. These are available at auto part stores. Could be provided to those attending trainings.

    - Note from Connie - the first MPCA 319 grant had a budget item for door prizes and we used this as the grand prize along with shovels and ice scrapers, and car scrapers. We thought it might boost attendance but didn't seem to matter. However they did love the door prizes.

- Provide hand-held spreaders instead of the "scoop" for people adding deicer at building entrances. One example of a vendor is Earthway. These could be provided to folks attending trainings too.

- Offer grants (for example, watershed organizations could offer grants to folks trying anti-icing practices, etc.)

General Comments

- Pick four main things to focus on for the next year and try those and then share experiences because we can't do everything.

- Make the following available online – newsletters, brochure, video, factsheets. Would a general news release be helpful? Maybe.

- There is value in giving a consistent message to the public.

Communication messages – assuming some folks have and some folks want to provide information this winter to the general public, what are our main messages we want to get across to folks?

Catchy Phrases

- Low Salt Diet, Salt Free Zones, Snow and Ice Removal with Care, Snow and Ice Removal: Be Careful

- Winter maintenance is a broader idea that encompasses other BMPs such as salt storage

- Deicer (most folks won't understand that), salt (can be confusing for folks with regular salt – although the link to being healthy is interesting – although what if they don't use salt – we still want to talk with them about sand), chloride (most people won't know what that is)

Main messages for general public

<u>What is the problem? Why should I care?</u>

- Salt on roads and sidewalks goes into street storm drains and pollutes waterbodies (lakes, rivers, streams wetlands, groundwater).

- Salt pollutes - road salt (chloride) can kill fish and plants (toxic if the levels are high enough).

- Road salt stops or delays lakes from turning over (then we have to explain why turnover is important)

- Road salt costs millions in infrastructure damage (bridges, buildings, etc.)

- X numbers of lakes/streams in Minnesota are currently listed as impaired for chloride

- Once salt goes enters waterbodies, it doesn't go away (true for lakes, wetlands, and groundwater but not necessarily for streams/rivers)

- Note: most folks don't understand the concept of storm drains and the connection between the land and the water.

<u>What can people do? How can I make a difference?</u>

- Slow down; Drive for the conditions (other tips for drivers?)

- Don't push the snowplows, give them space to drive slowly.

- Shovel first; Remove snow early
- Reduce your use of salt/use less salt for cleaner water

- Save money by using less salt

- Be patient – just because you don't see salt on the road doesn't mean it hasn't been applied and give it time to work. Don't complain to the city, county, or state if the road isn't instantly cleared, give them time.

- Know the pavement temperature/Temperature matters – it may be too cold to use certain products. Would be good to have pavement temperature and trend information on weather stations for all maintenance workers to have easy access but also the public as we get the word out to them.

Other messages

- Don't use sand – it fills up lakes and streams/rivers (or if you do use it for traction in very cold weather, sweep up extra on your sidewalk)

- Some temperatures are too cold for salt to work

- We can use less salt and still provide the same level of service and safety – we just have to do our practices differently.

Media ideas

- Need to share the success stories - showcase how some of the cities have saved money by using less chloride and the safety/level of service is the same or better.

- Could do a Kare11 spot-do you care?

- Do radio spots.

- Connect with celebrities such as TV weather reporters.

- Could have regional hotline for people to report using too much salt? But who would answer that call? Should be cities. Some folks make a record of who these folks are and target them for the next trainings.

- Could do a general ad campaign like the emerald ash borer.

- Use the CleanWaterMN (Watershed Partners) website and link message to the MS4 toolkit

- Do public service announcements (PSAs)

- Use facebook/twitter

- MDH listserve always gets picked up by the 6 o'clock news. MPCA also has a media person to get stories out.

- Do a factsheet like those used for the MS4 toolkit

- Have something similar to MPCA Household Hazardous Waste – example of a website with common messages.

General comments

- Maybe have a message for year 1, year 2, year 3, etc. Or 2 messages we want to get out in the next 6 months.
- As a reminder, Connie is compiling a list of resources for various audiences. But we want to share the best of the best and focus on those strategies.
- MPCA url is too long – website needs updating – maybe we can restructure it so it has more of a focus by audience.
- Tie the concept of shoveling and snow plows for removing the snow/ice mechanically first (before product needed)
- Need to make the connection between roads, parking lots, sidewalks, and entrances.
- Could tie it in with clean water.
- Need to mention safety.
- Need teasers to catch their interest.
- Need to use cultural diverse photos so we can connect to all audiences.
- Make a link to big rivers/streams too not just lakes
- People care about health and safety.
- Need to tie it to drinking water.
- Point of contact at gas stations? Everyone goes to them – good link to driving and salt for sale, but would be a harder sell since they are selling deicing product there and the message could cut into their bottom line.
- How can we do more salt free cities or zones like Quebec?
- Need to do more marketing to the general public so they know there is a problem (then demands on contractors/cities/etc. will be less)
- Need to be specific if we want them to make a behavior change.
- Homeowner connection is at stores – they walk in the door and see piles of salt to buy.

- Since homeowners are likely not the primary source of chloride to water (we assume this), then we need to not only tie what they can do, but the larger picture of how it is impacting the environment from all sources.

- Imaging is important – shovel and clean water.

- We need to sell the problem.

- Note that the message needs to be tailored specifically for each audience and the medium we are using for communication. For example, if you are targeting churches, malls, or schools, you need to tie that with their interests and goals. Or a 30 second radio spot is much different that a newsletter article.

- It would be helpful to have a main message that we all use that can get tweaked for particular audiences.

The group did not have time to talk about strategies for all the different audiences so Connie summarized some of the best strategies/tools that are currently available.

- Main strategies for other audiences – what is available now that we should share with other educators from watershed organizations, counties, cities, etc.

    - Homeowners – MWMO has a winter maintenance for homeowners video (in draft form) and will be shared on cable TMD - this was shared after the meeting for folks that could stay; also the brochure developed by Nine Mile WD

    - Parking lot/sidewalks – MPCA Level I certification

    - Road maintenance – Road Salt Symposium, MPCA Level I certification, Iowa State list serve

    - Building entrances/sidewalks – MWMO winter maintenance for small sites video (available on youtube/MPCA website)

    - Supervisors (winter maintenance)– gap

    - Brochure on hiring winter maintenance professionals

    - Water professionals – Road Salt Symposium

Next steps (meeting dates and topics, etc.)

- Make homeowner survey available via survey monkey (Minnehaha Creek WD did this already - http://www.surveymonkey.com/s/5XCSJWP).

- How do we get folks interested in the problem? Commit to a few strategies.

- Watershed Partners – folks attending the next meeting to ask about hosting more chloride information.

- Note: MPCA is working on updating their web pages to post educational strategies (videos, brochures, etc.) currently available. We hope this team will then review and add to this content and then help disseminate the information.

- Next meeting will be in 2012.

TCMA Chloride Project
Education and Outreach Committee Meeting #1

Meeting Agenda
October 6, 2011
1:30 p.m. – 3:00 p.m.
MPCA Board Room West

Outcome: Understand the overall Twin Cities Metro Area Chloride (TCMA) project. Identify and prioritize the principal audiences for road salt education. Begin discussion of the educational needs for the principal audiences (if time permits). Provide level of interest in helping survey homeowners on de-icer use. Review existing education and outreach materials/tools for road salt. Discuss next steps.

1. TCMA Chloride project introductions
2. Overview of the TCMA Chloride project (Brooke Asleson)
3. Defining the most important audiences
4. Potential homeowner survey (Connie Fortin)
5. Next steps (meeting dates and topics, etc.)

TCMA Chloride Project
Education and Outreach Committee Meeting #1

Attendees
Present: Brooke Asleson (MPCA), Barb Peichel (MPCA), Connie Fortin (Fortin Consulting Inc.), Claire Bleser (NMCWD), Kellie Thom (MnDOT), Paula Liepold (Dakota County), Leslie Yetka (MCWD), Shane Missaghi (UMN Extension), Cori Rude-Young (MPCA), Joan Nephew (Freshwater Society), Anna Kerr (MPCA), Sage Passi (RWMWD), Sue Burns (MPCA), Dan Miller (Scott County), Angie Hong (East Metro WREP).

Not present: John Bilota (UMN Extension), Kathleen Schaefer (MnDOT), Louise Watson (RWMWD), Jenny Winkelman (MWMO)

October 6, 2011, 1:30-3pm, MPCA Board Room West

Overview

- The meeting purpose was to come to agreement on a prioritized list of audiences for road salt education
- The proposed outcomes were to understand the overall Twin Cities Metro Area Chloride (TCMA) project, identify and prioritize the principal audiences for road salt education, provide a level of interest in helping survey homeowners on de-icer use, and discuss the next steps.
- The TCMA Chloride Education & Outreach Committee (EOC) consists of education specialists that will assist with the development of a "toolbox" of education materials that can be used by organizations to help increase awareness about road salt and water quality issues.
- This is the official EOC team; member list will be posted on the project website.

Introductions- what are people doing as far as road salt/chloride education? Note: not sure we captured everything.

- MWMO developed winter maintenance for small sites video (linked to MPCA website)
- MWMO in the process of developing cable TV video for homeowner winter maintenance with reduced environmental impacts. Should be out this fall.
- CTAP offers calibration training for snowplow operators
- CTAP/MnDOT assists with training for MPCA voluntary certification program.
- Used training video (youtube – winter maintenance for small sites)

- MnDOT has developed their own educational materials (brochures, etc.) that address calls regarding road salt
- Watershed Partners has promoted video
- City of Prior Lake – would like to use their staff to train other cities
- Stormwater-U trainings (winter salt maintenance trainings for parking lots and roads)
- Conducted trainings, outreach, & education to citizens and school kids
- Dakota County Winter Maintenance Training Knowledge, Attitudes, Practices (KAP) Study
- Promotes existing trainings, this topic is not high on the radar for the County
- Fortin Consulting conducts training for MPCA voluntary certification program on Winter Maintenance with Reduced Environmental Impacts.
- Current work on the inventory of road salt/chloride education materials that will be developed for this project (email to folks) - *any additions should be sent to Connie*
- Conducted trainings, provided a cost share program, used Nonpoint Education for Municipal Officials (NEMO) module
- Made sure most of city road salt applicators in their watershed attended a training and were certified; held workshops with businesses, schools, and private contractors (include townhomes); held workshops for residents at REI, attend winter preparation days at the cities that are held for applicators, providing hand-held spreaders to small sites such as hospitals
- Conducted trainings, encouraged snow plow retrofits
- Provided seasonal salt messages for Minnesota Public Radio
- Provided information for the Winter Maintenance Expo
- Present information to school kids
- Working on a Snow and Ice Program for the watershed district
- Radio Public Service Announcements (PSAs) on road salt (seasonal message)
- Held the Road Salt Symposium (with a new session for policy makers this past year)

Overview of TCMA Chloride project – Brooke

- Reviewed Phase 1 results – we started this project in 2007/2008 with a feasibility study and an Interagency Team. The main goal was to find out the status of chloride impairments in the Twin Cities Metro Area (TCMA).

- The main findings of the feasibility study were:
    - the primary source of chloride is road salt (road density was positively correlated with impairments),
    - most of our chloride monitoring data was collected in spring/summer not winter but 80% of the water quality exceedances were happening in the winter and only 20% of our dataset covered that time period,
    - that we for the most part were not monitoring lakes in the deepest part (chloride is denser than water) so that was a need,
    - we have major gaps in some of our watersheds as far as water quality monitoring data for chloride,
    - we need more information on private applicators,
    - we need more accurate application information (application rates were based on purchasing records),
    - more urbanized areas had more impairments, and
    - we needed to follow up with a management plan that focused on addressing impairments in a Total Maximum Daily Load (TMDL) Study, education, and regulation.

- Phase 2 of this project focuses on the development of a TCMA Chloride Management Plan in 2014. It will include strategies for waterbodies that are impaired (TMDL/restoration) and not impaired (protection) for aquatic life due to chloride. It will also include the development of an Implementation Plan and monitoring plan (currently with help from partners, we are monitoring 74 lakes, 33 streams, and 9 stormsewer outlets during the winter for 3 years). The chloride standard will be applied to wetlands and the water quality standard for chloride will include hardness/sulfate. There are multiple teams as part of Phase 2 (see website for more information).

- The resource list of outreach and education materials needs to be completed by June 2012.

Defining the most important audiences – we broke into small groups to discuss and identify the key audiences to focus on for this team effort (such as creating the resource list). We don't have the time and funding during this project to address all the audiences and will focus on pulling together existing materials for everyone to utilize.

Small Group Report out –

1. Primary audiences- citizens, policy makers, and applicators/practitioners (both public and private). Spent a lot of time talking about citizen messaging and how educated citizens could support changes in winter maintenance at the cities and with policy makers, similar to the existing Watershed Partners, NEMO, Stormwater U structure.

2. Road Applicators are the biggest target and would have the highest impact, so the group lumped them all together (versus private/parking lot applicators which would be the biggest challenge and small scale/homeowner and decision makers). Need a consistent message. Leverage partners and resources. Biggest challenge is private applicators. Need to integrate science into messaging. Need to address safety versus application (liability/fear). Note about rates of over-application.

3. Lumped all road applicators (MnDOT, County & City) which would be the most important. Private applicators would also be important (applying to commercial properties of any size) – bidding process may be an issue and how much they are applying. Also discussed drivers/citizens (mostly interested in getting from point A to point B, phone calls) but not a priority. Note about importance of requiring certification/training and what each audience cares about (safety versus water quality).

Note that both Louise Watson and Jenny Winkelman provided feedback about audiences and needs by email since they were unable to attend the meeting.

Potential homeowner survey - Connie Fortin

§ We need to better understand application rates for homeowners in a qualitative way. Would this group be interested in conducting a survey to help fill this gap? Seems like most folks were interested in participating. Please send any changes to the survey to Connie. We could send it to 100 people in your watershed and not just the environmentally-minded folks. We could post it in hardware stores (but how would we get them back). We could Facebook your friends and family. We could put it in the Vermillion newsletter. We could contact Home Depot about purchasing records (but that would need to be split out between homeowner versus private applicators and may not be accurate as far as purchasing versus use per season).

§ Claire has a residential snow & ice care brochure if anyone is interested in adapting it for their use.

Next steps

- When should the next meeting be? We will try to hold it mid-November. Barb will send out doodle poll.

- We will also send out a contact list for everyone on the team.

- It seemed that folks were hesitant to limit the types of audiences for this effort. We are proposing that based on the team's feedback that we concentrate on summarizing and making available the best educational/outreach strategies that folks have tried to reach each of our main audiences (public road applicators, private applicators (commercial properties/parking lots), policy makers, and citizens. We can also spend time discussing where the gaps are and what ideas people have about other strategies. Basically, what is working in the Twin Cities Metro (we want to duplicate already successful educational efforts), what hasn't worked, and what we need to do to address the gaps, and figure out how to make that information available for folks (website, etc.).