



Lower Salt Creek Watershed-based Planning

WELCOME!

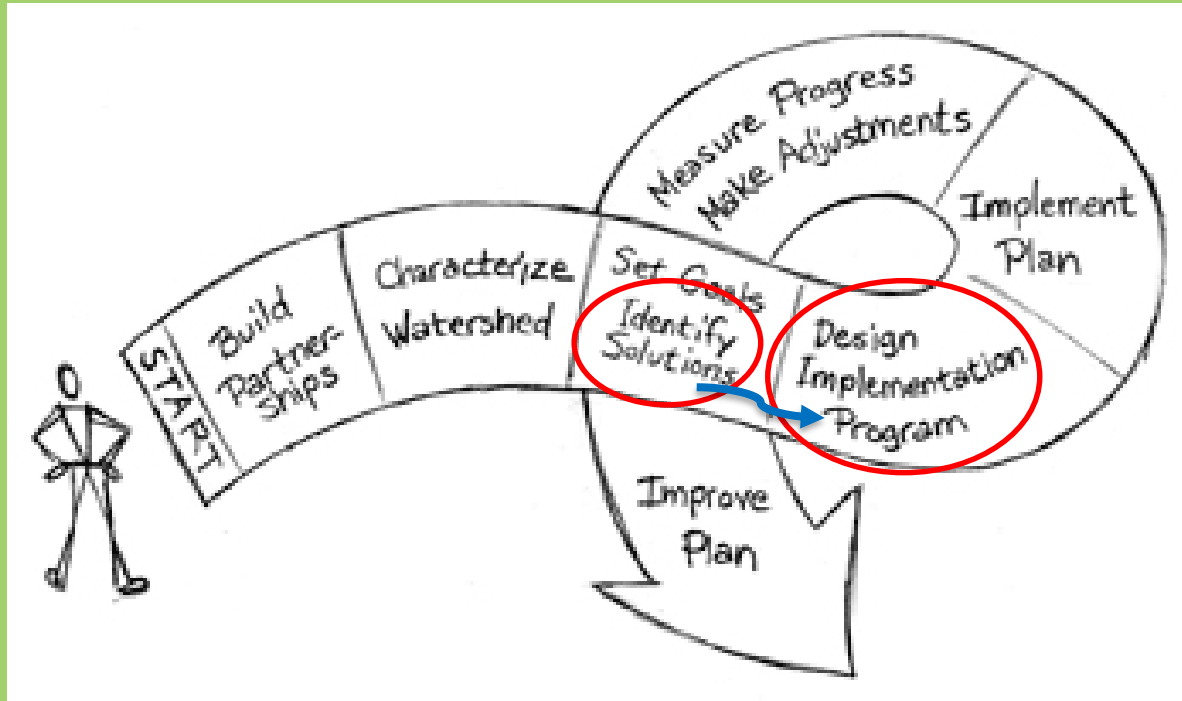
Village of Westchester

October 5, 2017

Agenda

- Welcome and Introductions
- Local Spotlight
- August meeting: recap, questions
- Watershed Resource Inventory: update
- Nonpoint Source Pollution Control BMP Projects, Programs, Policies
- Monitoring Success
- Next Meeting: Thursday, Dec. 7, 1:00 p.m.
- Activities, News, Announcements

Watershed Planning Steps



From *Handbook for Developing Watershed Plans to Restore and Protect our Waters* (USEPA, 2005)

Watershed planning is an iterative and adaptive process...

Local Spotlight

- Westchester's Water Quality Protection Initiatives



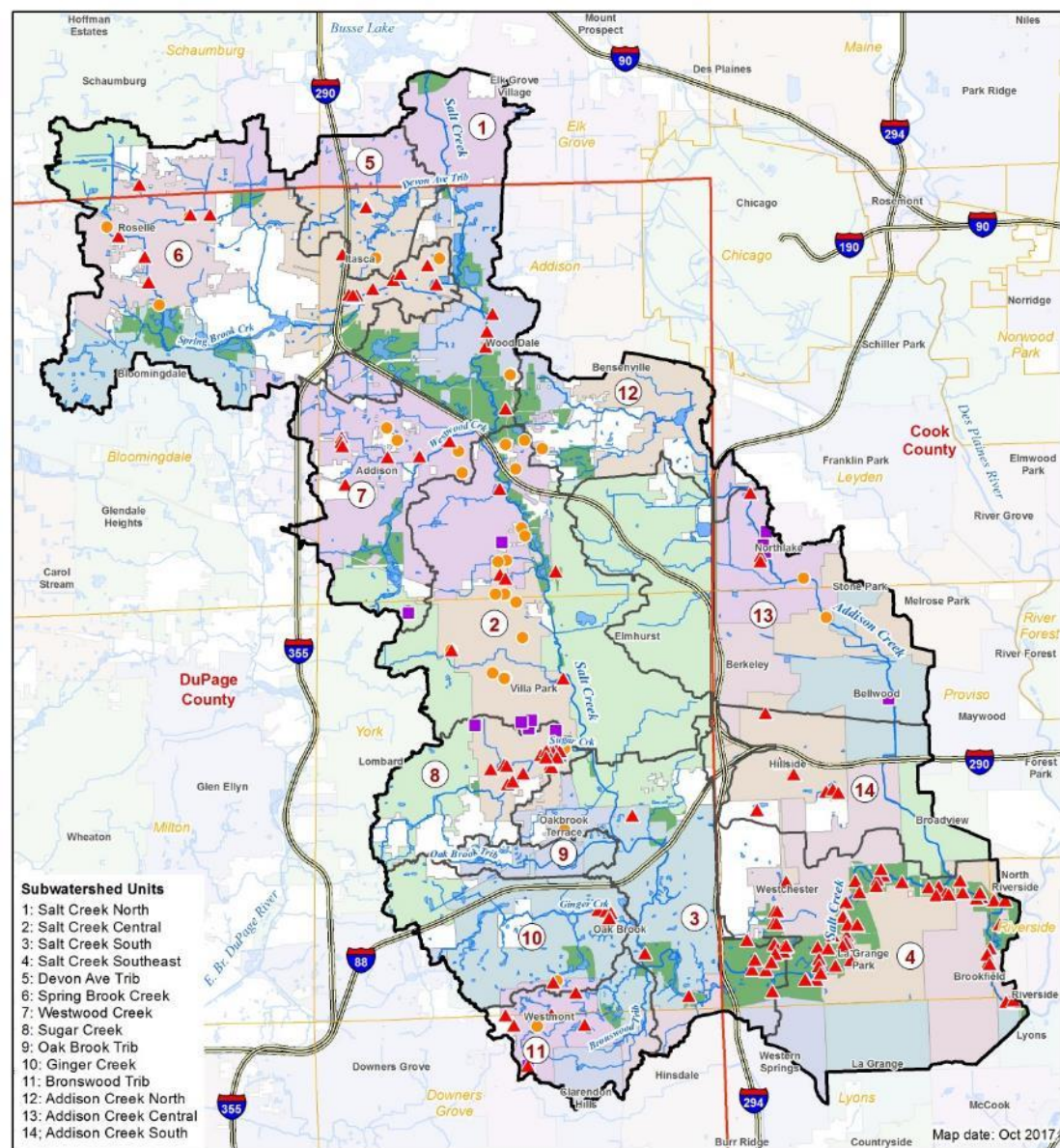
Watershed Resource Inventory: updates

Nonpoint Source Pollution Control BMP Projects, Programs, Policies

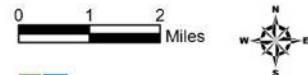
Lower Salt Creek Watershed-based Plan

BMPs Identified

- Participants: 31
- BMPs Identified:
 - ▲ Opportunities: 143
 - Underway: 14
 - Completed: 36



Lower Salt Creek BMPs Identified (October 4, 2017)



Chicago Metropolitan Agency for Planning



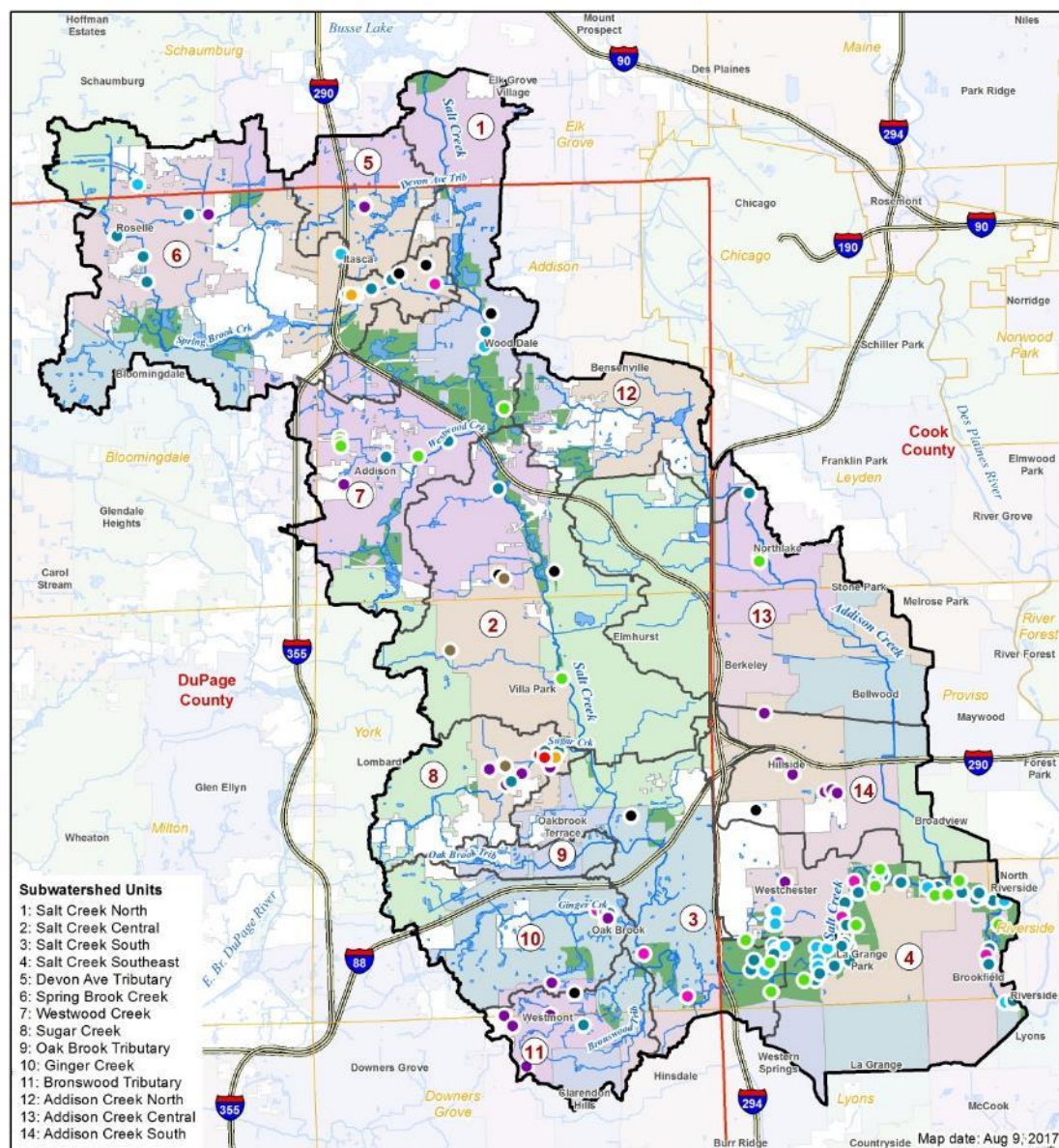
BMP Opportunities

BMPs Identified by Municipality

Municipality	Opportunity
Addison	9
Brookfield	9
Elmhurst	1
Hillside	7
Itasca	11
La Grange Park	9
Lyons	3
Northlake	3
Oak Brook	10
Roselle	7
Villa Park	21
Westchester	8
Westmont	7
Wood Dale	3
Total	108

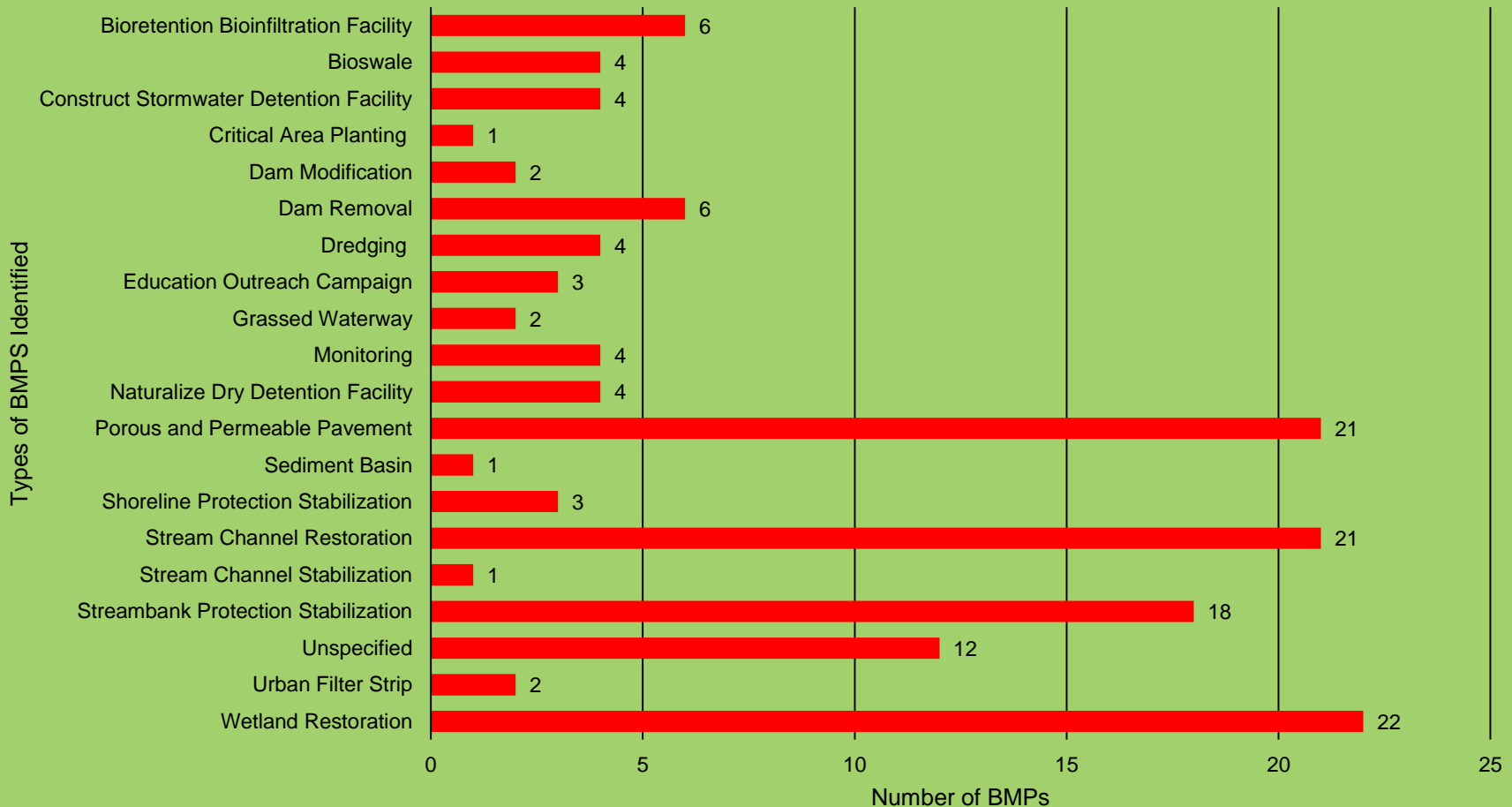
NOTE:

- Unincorporated: 2
- Forest Preserves: 33



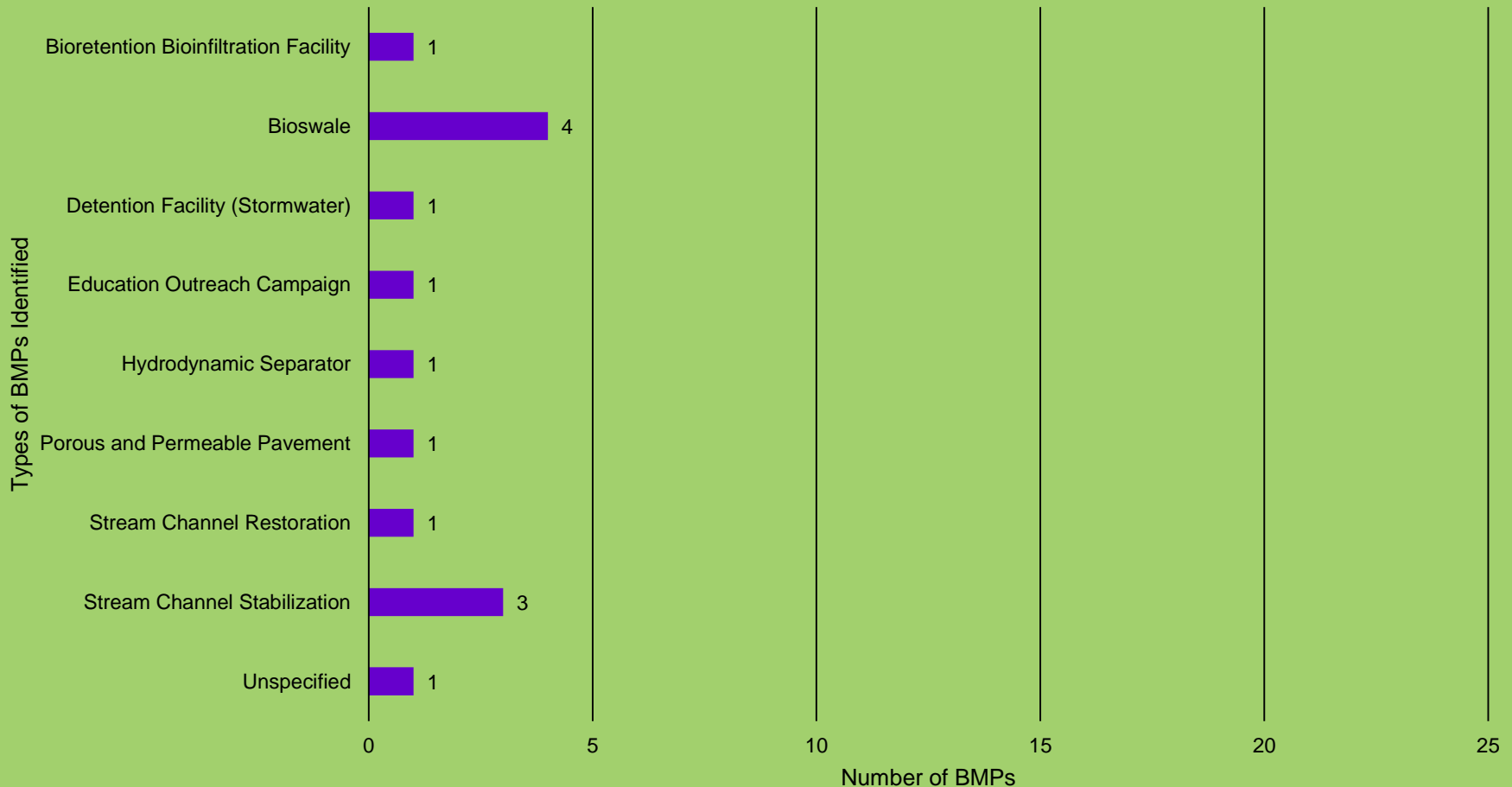
Online submittals via BMP Identification Survey

Lower Salt Creek BMP Opportunities (as of October 4)



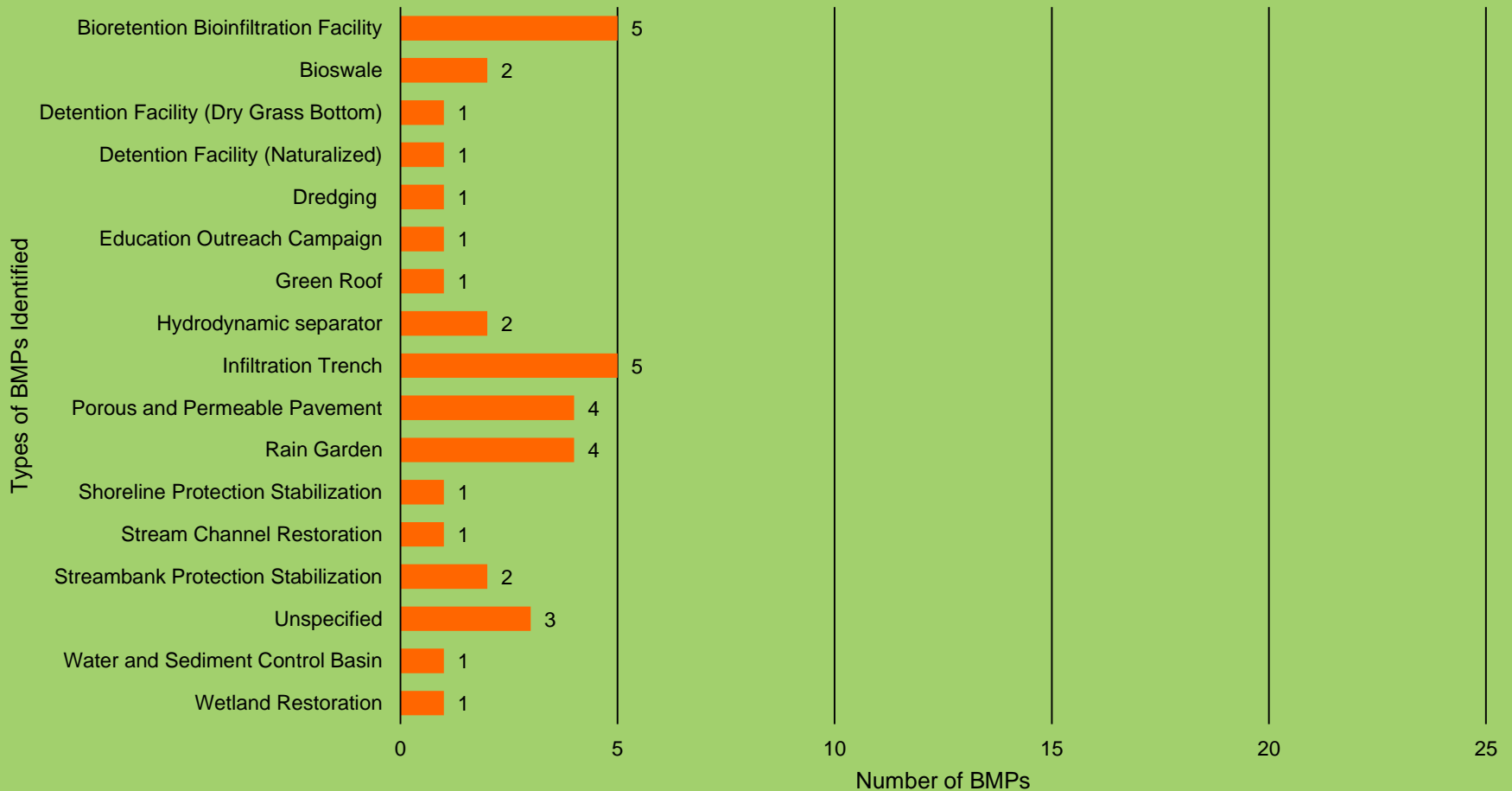
Online submittals via BMP Identification Survey

Lower Salt Creek BMPs Underway
(as of October 4)



Online submittals via BMP Identification Survey

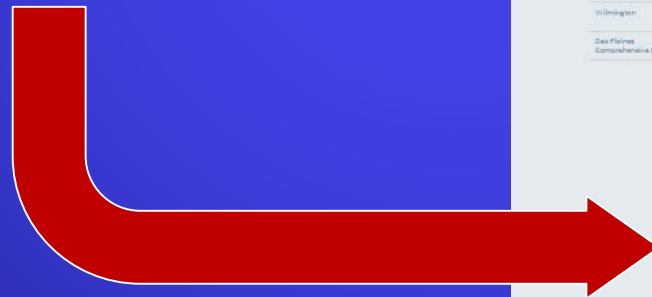
Lower Salt Creek BMPs Completed
(as of August 7)



Lower Salt Creek BMP Identification Survey

Access via button on LSC
page on CMAP website:

<http://www.cmap.illinois.gov/programs-and-resources/ita/lower-salt-creek>



or

<https://LowerSaltCreek-BMPsurvey.metroquest.com>

The screenshot shows a web browser window with the URL <http://www.cmap.illinois.gov>. The page title is "Lower Salt Creek - CMAP". The main content area is titled "Lower Salt Creek Watershed-Based Plan". It features a map of the watershed area, a "Take the survey" button with the text "CLICK HERE TO BEGIN", and several text sections including "Public Engagement" and "BMP Identification Survey". The "BMP Identification Survey" section states: "The identification of potential best management practice (BMP) projects and programs is one of the most important steps of the watershed planning process. BMPs included in EPA-approved watershed-based plans become eligible for grant funding under Section 319(b) of the Clean Water Act through Illinois EPA's Nonpoint Source Pollution Control Program. CMAP has set up an interactive, online mapping survey where stakeholders can identify proposed BMPs and provide additional details for the inclusion in the Lower Salt Creek Watershed-based Plan. The identification of past and currently underway water-quality related BMPs is requested through the online survey as well. Click on the button below to get started!"

Pollutant Load Reduction Estimates

Pollutant Load Modeling



STEPL

- Spreadsheet Tool for Estimating Pollutant Loads
- EPA provided tool to model pollutants from different land uses and streambank erosion
- Compiled on a watershed/ subwatershed scale
- Also estimates potential reductions
- Limited to N, P, TSS, and BOD





DUPAGECOUNTY

STORMWATER MANAGEMENT

Lower Salt Creek Watershed Plan

Estimates of Pollutant Load Reductions



Love Blue. Live Green.



Background



CMAP BMP Identifier

- Stakeholders propose potential BMPs

DuPage County SWM

- Size of BMP
- Size of drainage area
- Estimate Load Reductions
- Estimate Cost



Lower Salt Creek



BMPs Proposed as of September 15

- 32 modeled



Permeable Pavers



Bioswales



Constructed Wetland Detention Basin

Lower Salt Creek



BMPs Proposed as of September 15

- 82 BMPs cannot be modeled



Streambank Stabilization



Rain Barrel Programs



Storm Drain Stenciling



Pet Waste Pickup Education

Lower Salt Creek BMPs



Site Specific

- Bioretention
- Streambank Stabilization
- Permeable Pavers
- Filter Strip
- Wetland Restoration

Project Reductions

- Nitrogen: 406 (lbs/yr)
- Phosphorus: 73 (lbs/yr)
- BOD: 767 (lbs/yr)
- TSS: 9.7 (t/yr)
- Very small compared to entire watershed

Lower Salt Creek BMPs



Watershed Wide

- Streambank Stabilization
- Education & Outreach
- Permeable Pavers
- Rainwater Harvesting
- Filter Strips
- Oil & grit / hydrodynamic separators



Klein Creek Solutions



Watershed Wide Reduction Goals

- Illinois Nutrient Load Reduction Strategy 2025 goals
 - 25% reduction in phosphorus
 - 15% reduction in nitrates-nitrogen
- Chloride TMDL
- Sedimentation
- Mercury, PCBs, DDT, Heptachlor, Aldrin, Methoxychlor, and others

Reduction Models

- Nitrogen
- Phosphorus
- TSS
- BOD



DUPAGECOUNTY



STORMWATER MANAGEMENT

Next steps



Complete Models

- Additional site specific BMPs submitted
- Watershed Wide reductions

Set Goals

- Work with stakeholders to develop pollutant reductions
- 5 year and 10 year

Questions?



Mary Beth Falsey

Water Quality Supervisor

DuPage County Stormwater Management

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Information, Education & Outreach

The Nitty-Gritty of Stormwater Public Engagement

DU PAGE COUNTY STORMWATER MANAGEMENT
LOWER SALT CREEK WATERSHED | OCTOBER 5, 2017





Whether it's watershed planning,
NPDES compliance, project
implementation, etc...

The public needs to be **INVOLVED**.

Where Do We Begin?

- ▶ Know Your Audience.
- ▶ Develop Your Tools.
- ▶ Get the Word Out.
- ▶ Communication is a Two-Way Street.

Know Your Audience.



Municipalities, Park Districts,
Forest Preserve District, Elected
Officials, DuPage County
Departments, State Agencies,
Etc.



Businesses, Non-Profits,
Environmental Groups,
Education Institutions, Citizen
Stewards, Etc.



"Population uninterested or
unaware of environmental
implications of their everyday
actions."

Who are the General Public?

Values

Water
Quality

Health

Money

Ordinances

Time

Social Norms

Knowledge

When asked where water from storm sewers drains, only an approximate 45% of people surveyed said it went into local streams and rivers.

Language

Native Plants

Stormwater Runoff

Watershed

Best Management Practices

Green Infrastructure

Non-Point-Source Pollution

Tools are the Next Step.

Publications

- Brochures
- One Sheets
- Newsletters
- Pamphlets
- Booklets

Media

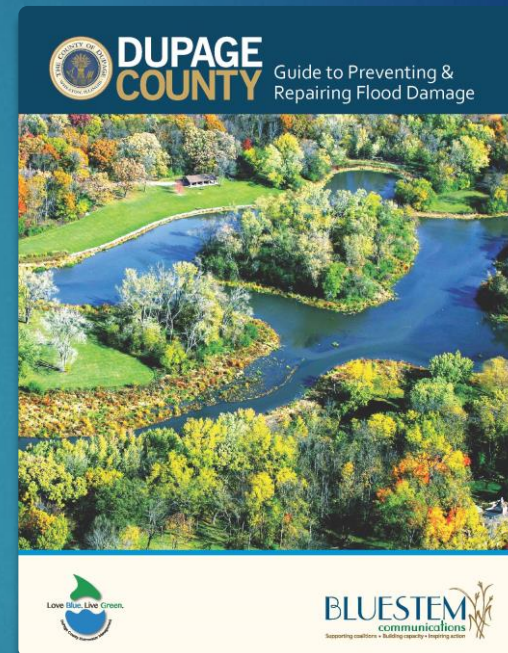
- Public Service Announcements
(Video & Audio)
- Short Form Videos
- Advertisements

Social Forces

- Facebook
- Twitter
- Instagram
- LinkedIn
- YouTube
- Snapchat
- Surveys
- Viral Marketing
- Apps

Publications

- ▶ BMP Brochures
- ▶ Informational One Sheets
- ▶ Monthly E-Newsletter
- ▶ Flooding Guidebook



Media

- ▶ BMP PSAs
- ▶ Flood Control Facility Videos
- ▶ Features



Social Forces

- ▶ Facebook
- ▶ Twitter
- ▶ Instagram
- ▶ YouTube
- ▶ Surveys
- ▶ Hashtags
- ▶ Apps



Now, Get the Word Out.

Technical Experts

- Municipal Engineers Meetings
- Technical Seminars
- Webinars
- Board Meetings
- Industry Conferences
- E-newsletters
- Social Media

Interested Folks

- Watershed Workshops
- Stakeholder Groups
- Youth Education Programs
- Citizen Stewardship Programs
- E-newsletters
- Social Media

General Public

- Mailers (i.e. inserts, newsletters)
- E-newsletters
- Social Media
- Community Events
- Television
- Newspaper
- Handouts at Public Buildings
- Neighborhood Boards



So, we can reach the public,
but WHY should the public
reach us?

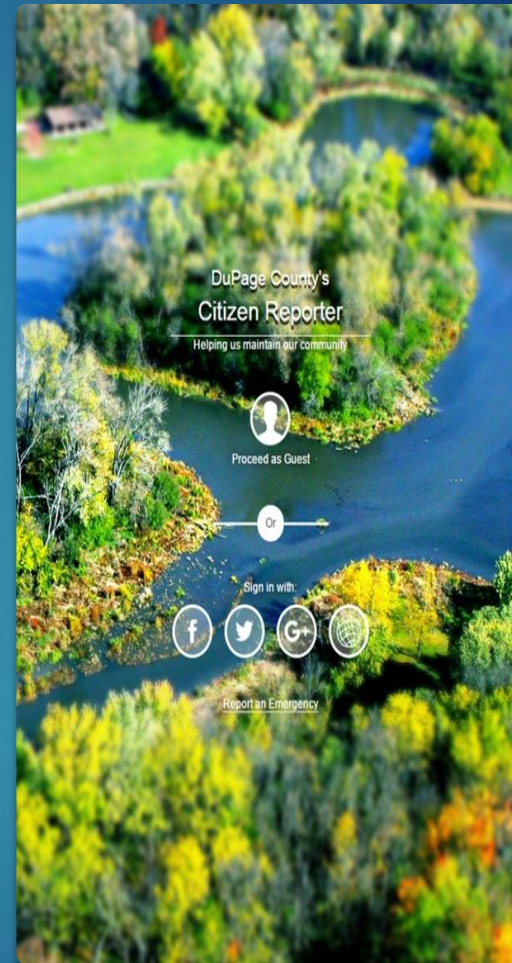
Watershed Planning (Flood Control & Water Quality), Outfall Monitoring, Inspections, Property Management, Illicit Discharge Detection & Elimination (IDDE), Spill Response, Citizen Stewardship, Detention Basin Inventories, etc.

Communication is a Two-Way Street.

- ▶ In partnership with GIS, DuPage County Stormwater Management developed two interactive web applications to open up dialogue between stormwater administrators and the public.
 - ▶ Citizen Reporter App

Citizen Reporter App

- ▶ Observations from General Public
- ▶ Water quality focused
- ▶ Not intended for complaints or emergencies
- ▶ Used to manage responses to large outreach efforts
- ▶ Accessible via mobile or desktop
- ▶ Averaging ~5 reports/week
- ▶ Managed by staff on back end



A Few Notes.

- ▶ This is a cyclical process.
- ▶ Your first draft will never be your final draft.
- ▶ Hand-holding may be required early on.
- ▶ Use the resources available to you!



Mary Mitros

Stormwater Communications Supervisor, DuPage County

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Information, Education & Outreach

Information/Education/Outreach activities should support each of the watershed management goals

See handout...

- Target Audiences
- Existing & Potential Opportunities
- Potential Partners
- Message Delivery Formats
- Other opportunities, ideas?



Progressing to a Sensible Salting Policy in the Salt Creek Basin

- ❖ Deanna Doohaluk – The Conservation Foundation / DuPage River Salt Creek Workgroup



DuPage River Salt Creek Workgroup

Progressing to a Sensible Salting Policy in the Salt Creek Basin

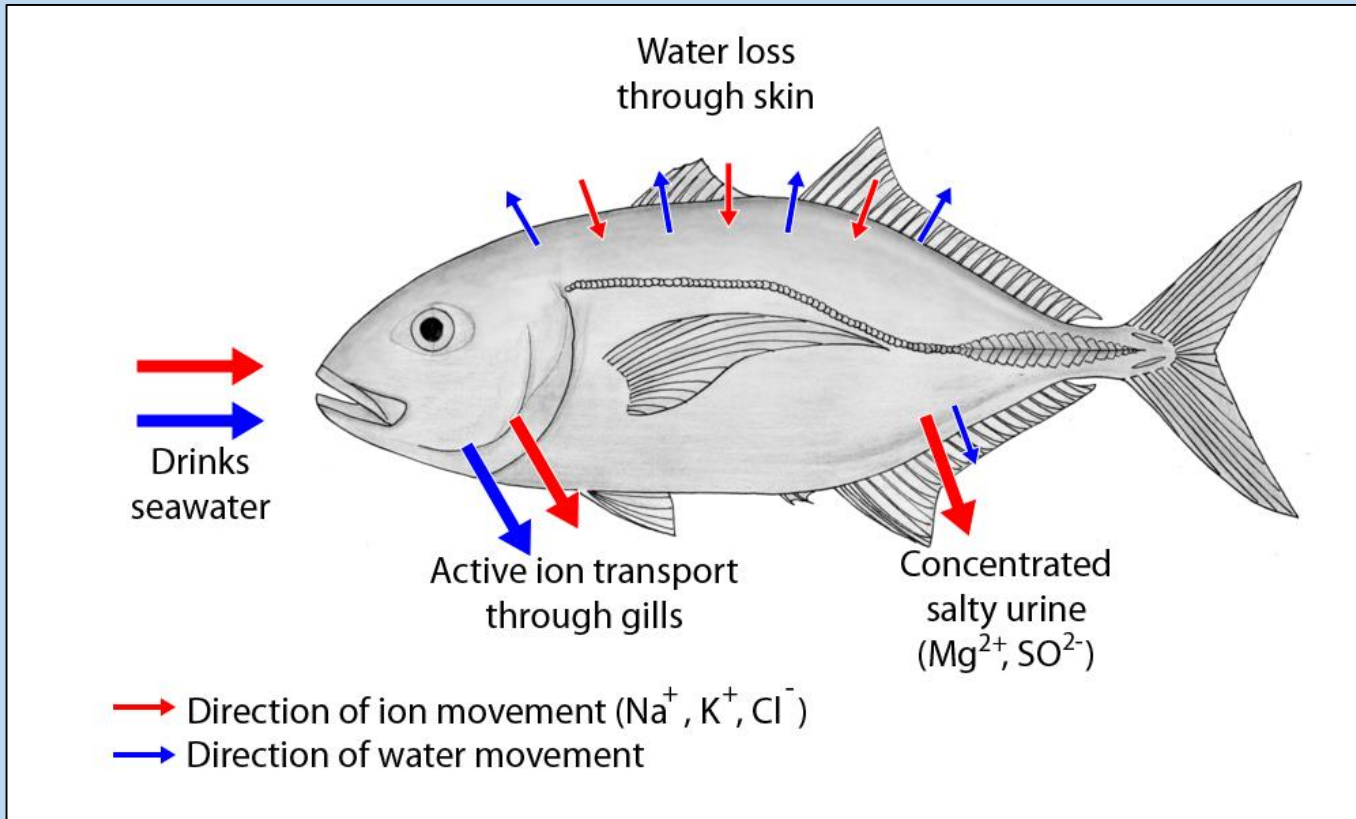
*Deanna Doohaluk TCF/DRSCW
10. 05. 2017*



Basic Chloride Facts

- Salt, as measured by chloride, is a major waterborne pollutant in DuPage, Cook, Will and Kane counties
- Dissolved chlorides in rivers, stream & lakes is a major limited in aquatic biodiversity in those counties
- Large numbers of waterways in these counties have been found to be breaking state law for salt content
- Chlorides (from NaCl, MgCl₂ & CaCl₂) do not break down in the environment
- We do not have a technology to remove these chlorides from storm, waste, and river flows
- Road deicing compounds are the major source of these water quality violations
- No deicers are “good” for water quality - all have an impact

How Chlorides Impact Fish

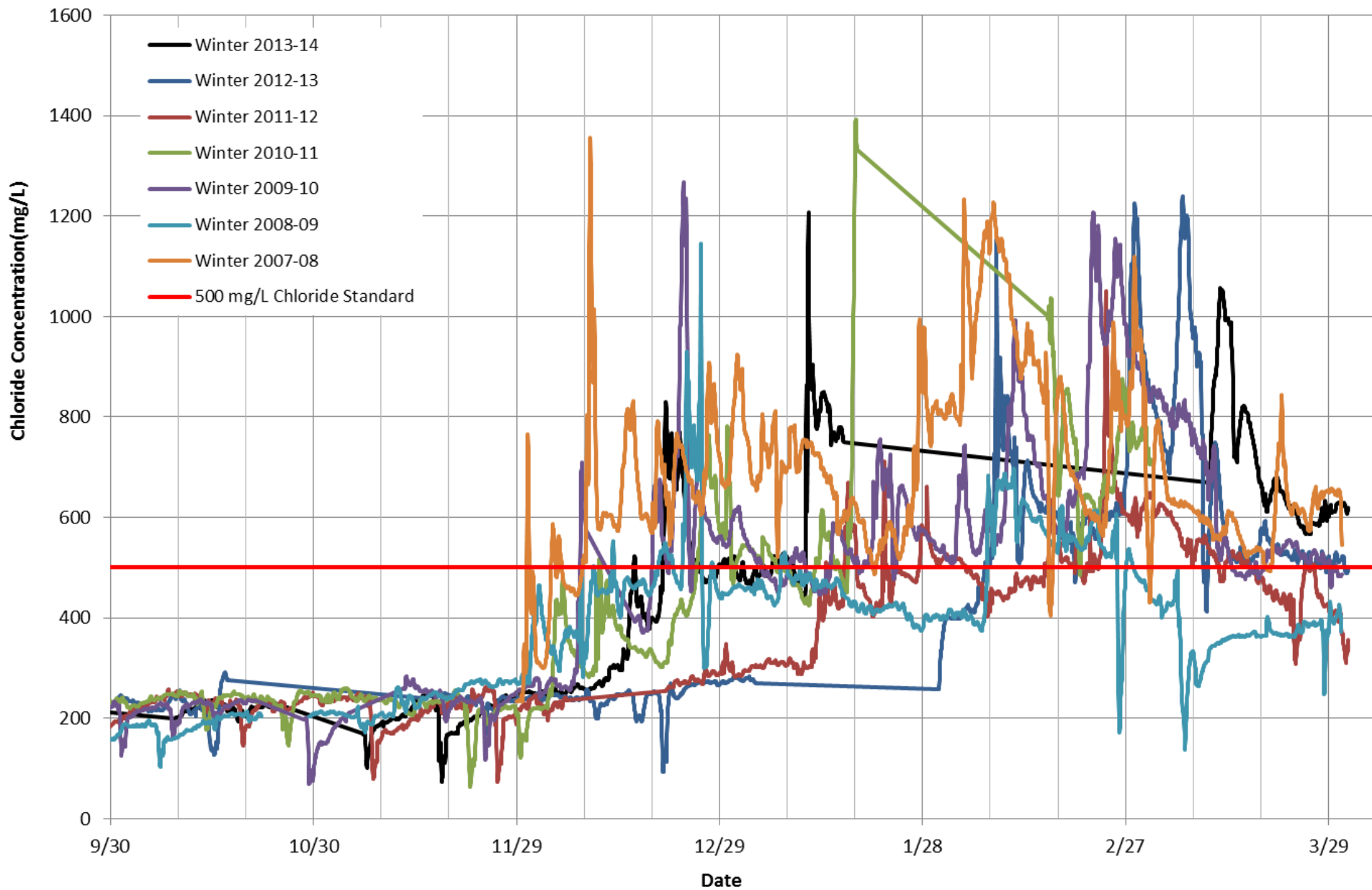


Chloride Water Quality Standards

Parameter National Criteria (Federal)	Chronic (mg/l)	Acute (mg/l)
Chloride (total)*	230	860
Iowa State Standard	Chronic (mg/l)	Acute (mg/l)
Chloride (total)*	389	629
Wisconsin State Standard	Chronic (mg/l)	Acute (mg/l)
Chloride (total)*	395	757
Illinois State Standard	(mg/l)	
Chloride (total)*	500	

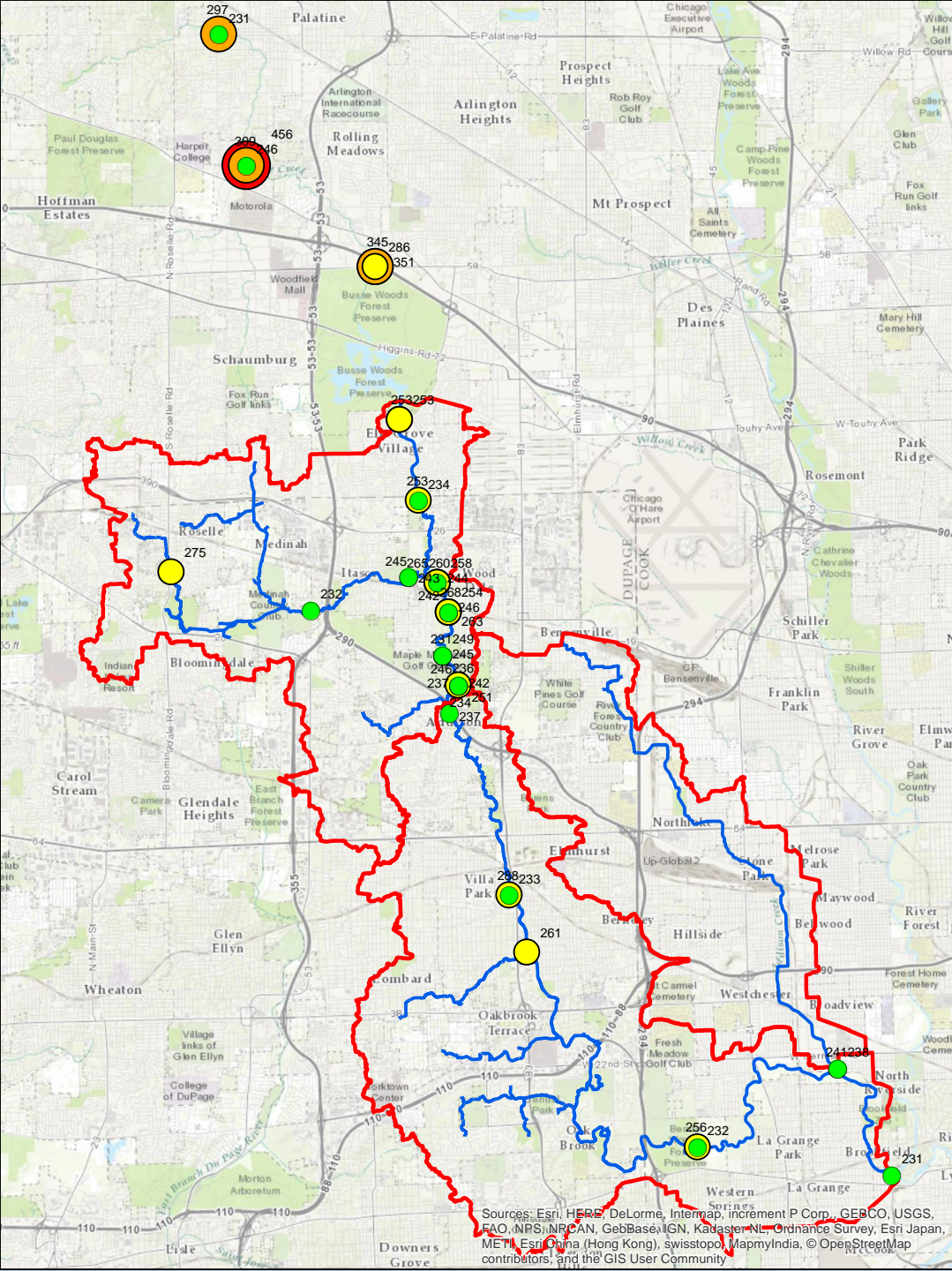
*Based on given concentrations of sulphate and hardness
Federal value under review

SCWR Estimated Chloride Concentration Winter 2007-2013 Comparison



Summer Chloride Concentrations above the Federal Chronic standard.

Salt Creek 2013 (June – September)



Legend

Chloride Concentrations mg/l

231. - 249

250 - 288

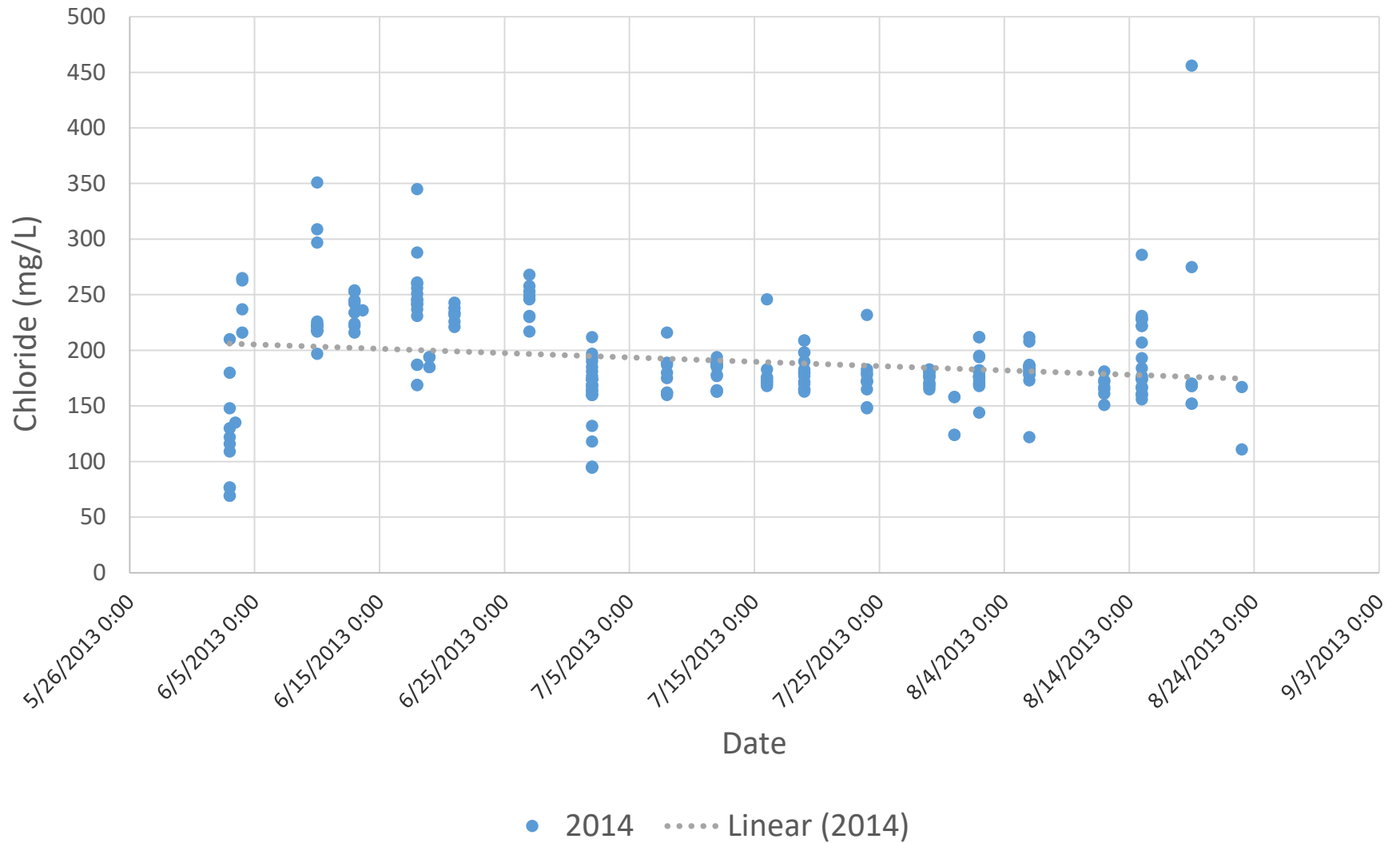
289 - 351

351 - 456

Lower Salt Creek_Plan Boundaries

Rivers Plan Area

Summer Chloride Concentrations Salt Creek 2013



Chloride Regulation; How We Got Here

- 2004 – Chloride TMDLs approved for the West & East Branch DPR and Salt Creek
- 2009 – Further TMDLs announced for West & East Branch DPR, Lower DPR and Salt Creek
- 2012 – O’Hare Western Access Permit scrutinized for chlorides , other large projects also receive attention
- 2015 – Water Quality permits for construction projects scrutinized for chlorides
 - Variance Process Starts in the Des Plaines River watershed
 - TMDLs started in 2009 due in 2017
 - New ILR40/MS4 Permit issued, has numerous references to chlorides

Chloride TMDLs Goals

- IEPA TMDL recommended chloride load reductions
 - Salt Creek - 14% reduction
- DRSCW / local agency data comparison:
 - Salt Creek – 41% reduction

	Salt Creek	East Branch	West Branch	Total
TMDL Target, Tons of Cl ⁻ /yr	13,300	5,200	13,700	32,200
TMDL Baseline, Tons of Cl ⁻ /yr	15,500	7,800	21,100	44,400
DRSCW Baseline, Tons of Cl ⁻ /yr	32,600	16,900	21,200	70,700

New ILR40 Chloride Related Requirements

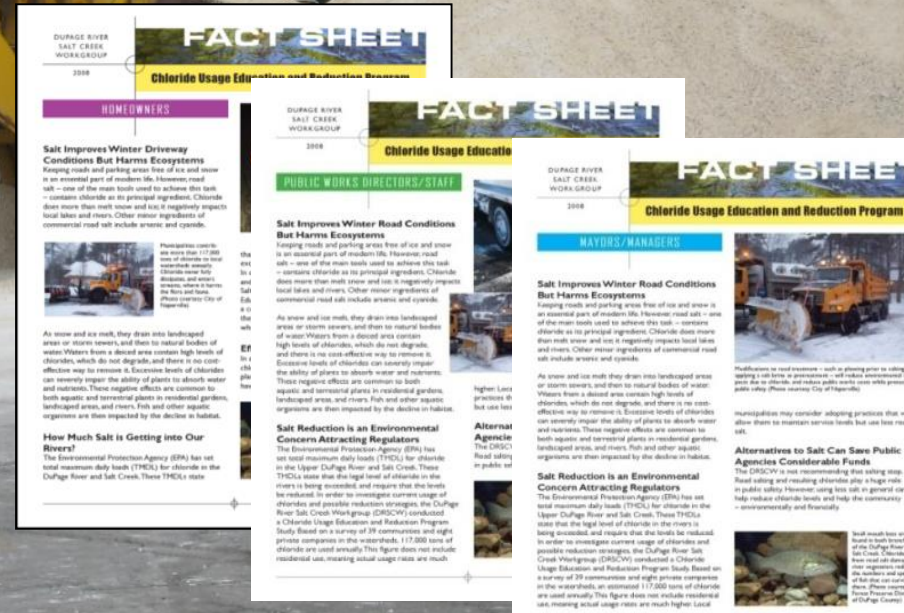
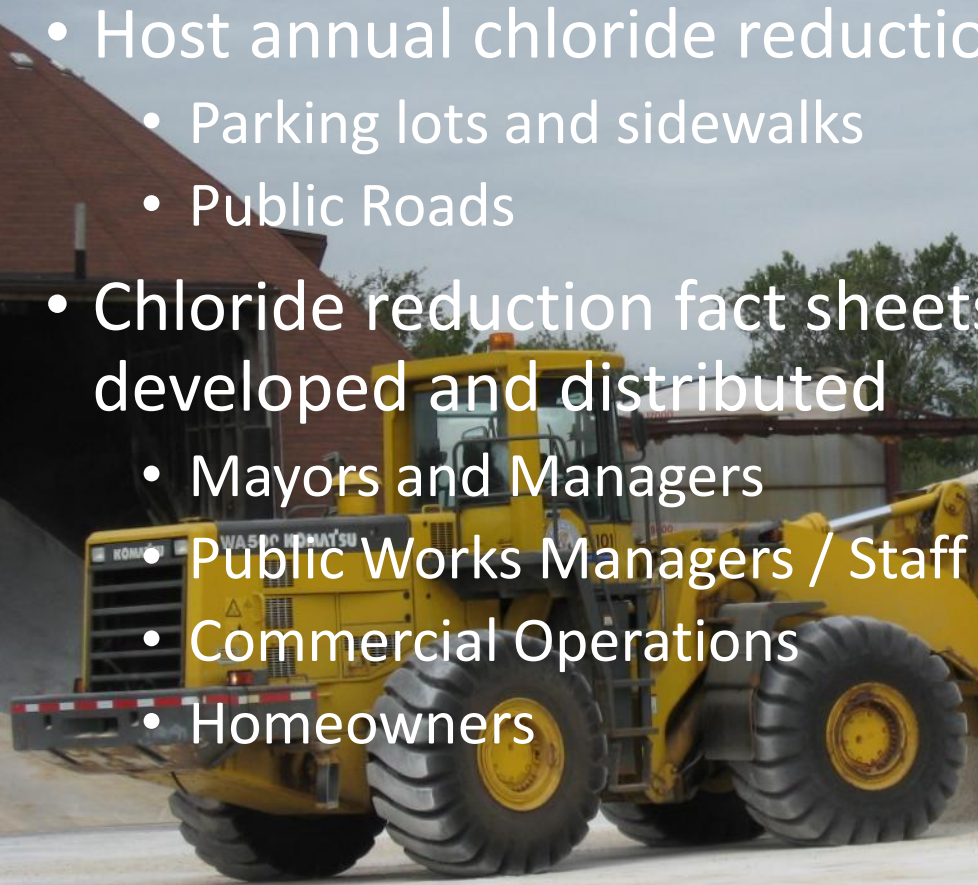
- If a permittee performs deicing activities, requires participation in a watershed group(s) organized to implement reduction measures
- Minimize the exposure of... chemical storage tanks, deicing material storage facilities, temporary stockpile, and other materials to precipitation and storm water
- Deicing material must be stored in a permanent or temporary storage structure (or seasonal tarping)
 - If no permanent structures, new permanent storage structures shall be constructed within two years
- Requires annual employee training to prevent and reduce storm water pollution from snow disposal and deicing
- If ambient water quality monitoring is performed, requires monitoring for chlorides



Slide Courtesy of Dan Bounds Baxter and Woodman

Education and Outreach

- Host annual chloride reduction workshops
 - Parking lots and sidewalks
 - Public Roads
- Chloride reduction fact sheets have been developed and distributed
 - Mayors and Managers
 - Public Works Managers / Staff
 - Commercial Operations
 - Homeowners



BMPs for Salt Reduction

- Driver training
- Salt spreader calibration
- Develop appropriate application rates
 - Pavement Temperature
 - Weather Forecasting
- Pre-wet deicer
- Equipment updates
 - Speed servo controls
 - On-board pre-wet
 - Computer controls
- Coordinate salt application during plowing
- Control salt spread width
- Prioritize road system
- Anti-Ice



Developed by Steve Karr

Before you do anything fancy !

- Snow Management Plans
 - Prioritize roads
 - Coordinate salting with plowing
- Equipment Calibration
- Appropriate Application Rates
 - Pavement Temperature Sensors
 - Weather Forecasting



Pre-wetting of solids





Anti-icing (liquids) applications)

“Anti-icing is the application of a de-icer to the roadway

before a frost or snowfall to prevent melted snow and ice from forming a bond with the road surface”



Photo: Hanover Park

Illinois Tollway Elgin-O'Hare Western Access (EOWA) Project

- 25 miles of Mainline Improvements
- 16 Service Interchanges
- 4 System Interchanges
- 16 miles of Arterial Improvements
- Provisions for Transit and Bicycle/ Pedestrian Facilities
- **Approximately 3,888 additional tons of salt**

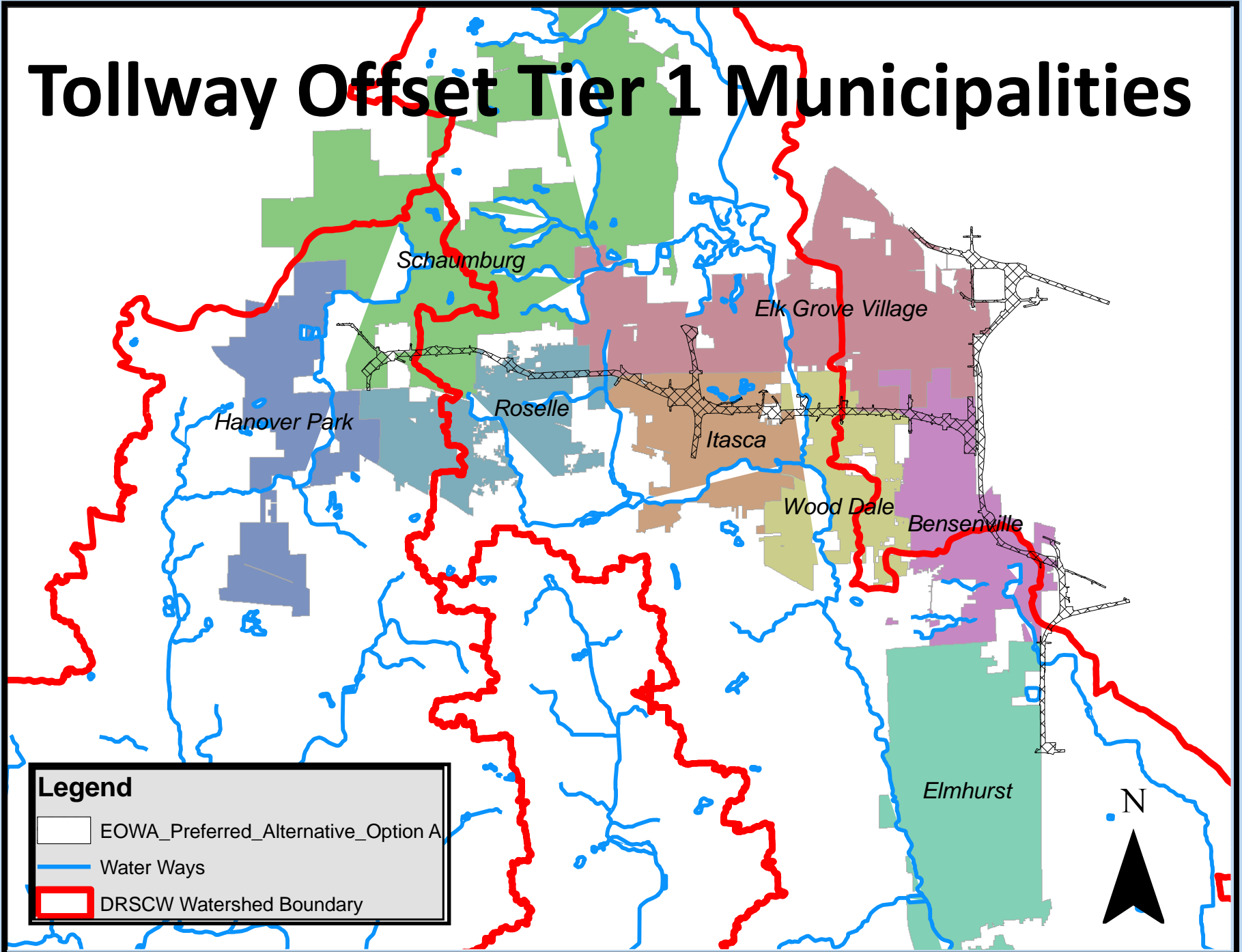


Tollway Offset Program Concept

Two steps to reach “no net increase”

- Tollway current practices (estimated reduction of 20%)
 - Monitoring ambient conditions in a partnership with the ILGS
- Remaining increase in loading offset by reductions made by communities neighboring EOWA (9 Tier 1 Communities)
 - Additionally partners agreed to offset at a minimum ratio of 1-1.25 so target **1,853 tons**
 - Includes tracking practices, application rates and ambient water quality data

Tollway Offset Tier 1 Municipalities



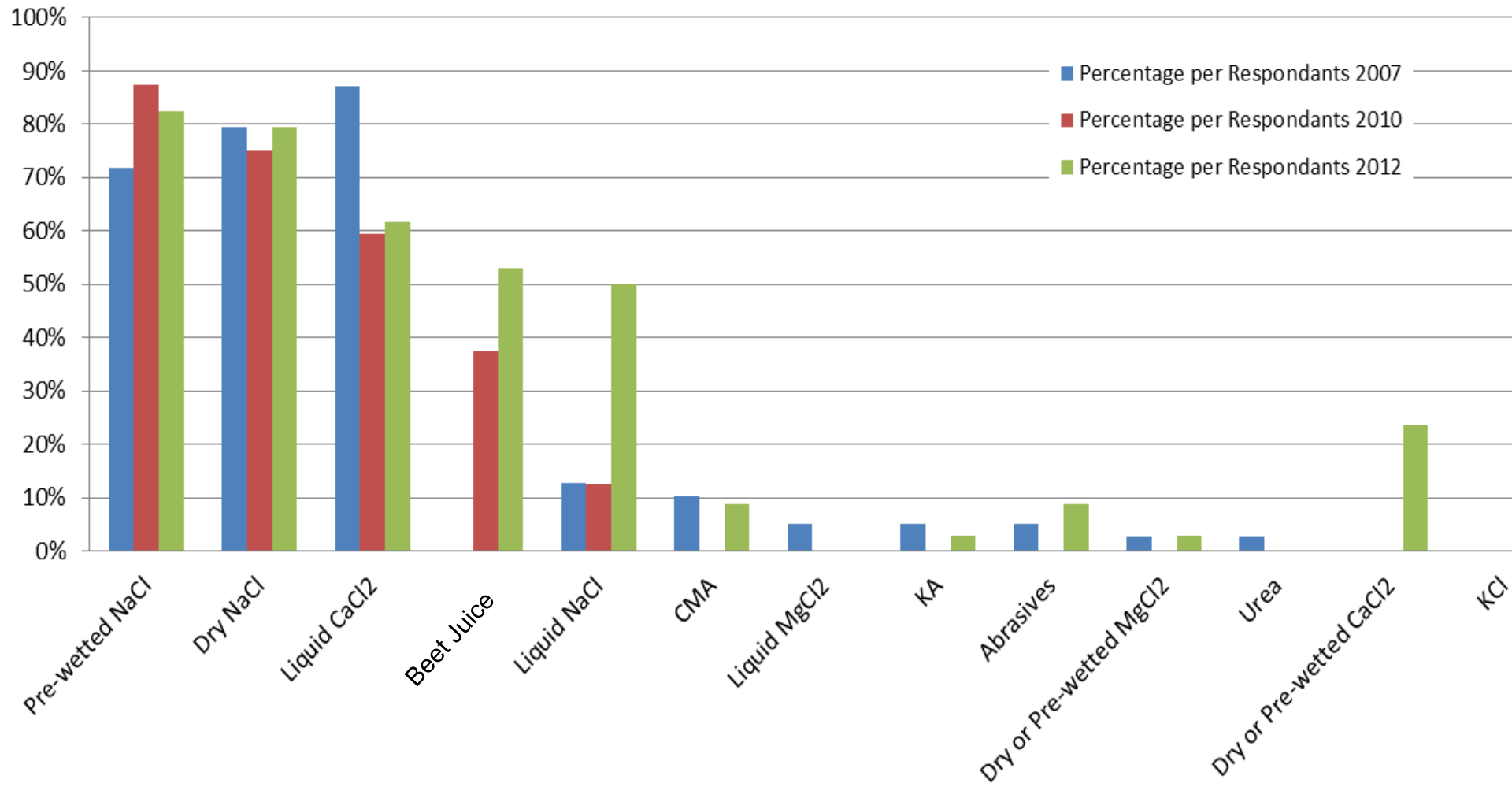
Chloride Toxicity Analysis

- Analyses run by Huff & Huff (Jim Huff)
- Based around observation in DRSCW data that despite observed winter conditions, many reaches hosted biodiversity close to support
- Analysis will look at winter toxicity in the lab to see if it differs from present water quality standards

If this finds new evidence, it would not remove the chloride problem, it would clarify the goal

Survey Results 2007-2012

Deicing and Snow Removal Agents Questionnaire Reponse



DRSCW's Next Steps in Chloride Reduction

- Increased emphasis on private contractors, school districts and utility managers.
- Renewed emphasis on calibration and use of pavement temperature data.
- Expanding the Tollway Offset Program to more municipalities
- Expanded monitoring of summer violations



Questions?

Deanna Doohaluk

ddoohaluk@theconservationfoundation.org

Monitoring Success

- Implementation schedule
- Interim measureable milestones
- Criteria for determining progress
- Monitoring to evaluate effectiveness

See handout...

Call for Photos



See handout...

- within LSC Watershed planning area
- variety of subject areas
- JPG format accompanied by information for each photo:
 - Subject
 - Location
 - Year and Month photo taken
 - Photographer's name/affiliation

Next Meeting

Thursdays, 1:00 p.m. - *Please offer to host!*

Oct. 5

- NPS Pollution Control BMP Projects, Programs, Policies
- Monitoring Success
 - Implementation Schedule
 - Interim Measurable Milestones
 - Criteria for Determining Success
 - Monitoring component

Dec. 7

- Funding & technical assistance resources
- Final draft plan overview, input

Local Watershed Activities, News, Announcements



Fullersburg Woods photo by Lynn Rotunno, Westchester, 2016

Questions and Comments

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