Lower Des Plaines Watershed Group ILR40 Activities
March 2021 – February 2022

PART I. COVERAGE UNDER GENRAL PERMITS ILR40

Not applicable to the work of the LDWG.

PART II. NOTICE OF INTENT (NOI) REQUIREMENTS

Not applicable to the work of the LDWG.

PART III. SPECIAL CONDITIONS

Not applicable to the work of the LDWG.

PART IV. STORM WATER MANAGEMENT PROGRAMS

A. Requirements

Not applicable to the work of the LDWG.

B. Minimum Control Measure

1. Public Education and Outreach on Stormwater Impacts

LDWG outreach activities for 2021-2022 included:

- A new joint website for the LDWG and Lower DuPage River Watershed Coalition was created with more information for the general public on local water quality issues and what they can do to help, as well as more information on the monitoring program, outreach program, NARP and Chloride TLWQS. The new URL is www.LDPWatersheds.org
- Watershed Outreach materials were developed and shared with member throughout the year. The "Outreach Materials" page on the website includes all past and present watershed outreach materials for download. Materials are now organized by topic instead of season on the new website to make it easier to see what is available. Materials for each topic include text for websites, newsletters, posters, blogs and social media posts. The new website has a blog page with blogs for all of the topics that members can link to. The blog page also provides a place for site visitors to find information. Examples of materials created are attached at end of report. For the winter season www.SaltSmart.org website is also used as a clearinghouse of winter BMPs for residents, public agencies and private deicing companies. This website has provided a wider reach beyond the Lower Des Plaines watershed, LDWG is an active partner in the Salt Smart Collaborative.

  Watershed outreach topics:

  - Spring – Rain Gardens, Garden Refresh, Freshwater Mussels
  - Summer – River Responsible, Pet Waste
  - Fall – Proper leaf collection/disposal, Where do the leaves go?

- Winter – SaltSmart – Winter Snow & Ice Management BMPs, Lose the Crunch-Love the Lines Anti-Icing, Winter Helpers Comic

LDWG also maintains a Facebook page and posts all materials developed so that communities can just share the posts if that is easier.
https://www.facebook.com/lowerdesplaineswatershedgroup

2. Public Involvement and Participation **–** Due to the Coronavirus pandemic restrictions the LDWG did not attend any in-person events. LDWG did work with members to provide resources on setting up rain barrel sales program and materials to encourage residents to install rain barrels and rain gardens to help minimize stormwater runoff from residential properties.

The LDWG and Lower DuPage River Watershed Coalition worked with The Conservation Foundation on a Pet Waste Campaign, funded through a grant from Illinois American Water. Over 50 signs and 10 poop bag dispensers were distributed to communities, park districts and homeowner's associations across the two watershed areas. Social media, messaging and other digital materials were made available through the outreach page on the website.

Figure 1. Pet Waste Signs & Dispenser

3. Illicit Discharge Detection and Elimination – no activities

4. Construction Site Storm Water Runoff Control - no activities

5. Post-Construction Stormwater Management in New Development and Redevelopment - no activities

6. Pollution Prevention/Good Housekeeping for Municipal Operations

Chloride Reduction Workshops

In 2021 the LDWG partnered with Lower DuPage River Watershed Coalition, DRSCW, The Conservation Foundation and Lake County Stormwater/Health Department to jointly offer five

Winter Deicing Workshops, three on Public Roads and two on Parking Lots and Sidewalks. Due to precautions necessitated by the Coronavirus pandemic, the trainings were held in a virtual format. Registration was widely advertised throughout northeastern Illinois. Accordingly, the webinars were attended by staff in DuPage, Will, Kane, Kendall, Lake, McHenry, Boone, Lee, Cook and Winnebago counties. Additionally, three technical webinar briefs were held.

Figure 2. Deicing Workshops Registration Form, 2021.

Public Roads Deicing Workshops were held on September 30, October 5 and October 12, 2021. Fortin Consulting, Inc. from Minnesota was engaged to present the material. A registration fee was required per agency in order to participate in the training. The links were sharable so the webinars could be viewed individually or in groups. Based on polling results, a minimum of 743 people participated in the three workshops. The Parking Lots and Sidewalks Deicing Workshop were held on September 28 and October 7 with Fortin Consulting, Inc. presenting. Based on polling results a minimum of 196 people participated in the two workshops. Certificates of attendance were provided to those who requested them. Evaluation surveys were sent to the persons who logging in to the webinars. A link to the *Minnesota Pollution Control Agency Winter Parking Lot & Sidewalk Maintenance Manual* was provided to each registrant. Questions from participants were entered into the chat and answered by Fortin Consulting staff, Workgroup staff as well as others participating in the training.

Figure 3. Welcome & Introduction to Parking Lots & Sidewalks Presentation, 2021.

To complement the Winter Deicing Workshops, the Winter Technical Briefs – Mini-Webinar Series was presented to focus on specific issues. Topics in 2022 included: November 16 – Liquids for Snow & Ice Control (13 agencies attended) , November 30 – Snow & Ice Communications with your Residents (14 agencies attended), and December 7 – Reducing Chloride Emissions: The Boost & Reduce Method (11 agencies attended). These webinars are posted at www.saltsmart.org .

Figure 4. Winter Technical Briefs, 2021.

<u>Qualifying State, Country or Local Program</u>
Not applicable to the work of the LDWG.

C. <u>Sharing Responsibility</u>

This report outlines the activities conducted by the LDWG on behalf of its' members related to the implementation of the ILR40 permit. It is the responsibility of the individual ILR40 permit holders to utilize this information to fulfill the reporting requirements outlined in Part V.C. of the permit.

D. <u>Reviewing and Updating Stormwater Management Programs</u>

Not applicable to the work of the LDRWC.

PART V. MONITORING, RECORDKEEPING, AND REPORTING

A. <u>Monitoring</u>

The ILR40 permit states that permit holders "must develop and implement a monitoring and assessment program to evaluate the effectiveness of the BMPs being implemented to reduce pollutant loadings and water quality impacts". The LDWG began a monitoring program in the summer of 2018 that meets the following monitoring objectives and requirements outlined in the permit:

- Measuring pollutants over time
- Sediment monitoring

- Assessing physical and habitat characteristics such as stream bank erosion caused by storm water discharges
- Collaborative watershed-scale monitoring
- Ambient monitoring of total suspended solids, total nitrogen, total phosphorus, fecal coliform, and chlorides

The first round of bioassessment monitoring was completed in 2018 at the twenty-nine (29) identified sites on the mainstem Des Plaines River from the confluence with the Kankakee River up to the I-355 bridge. The remaining thirty-three (33) mainstem sites were scheduled for sampling in 2019. As stated in the 2019 Annual Report, sampling was not completed in 2019 due to unsafe, high water conditions. A subset of fifteen (15) stations was resampled in 2020, all data collected on the mainstem (2018, 2019 and 2020) will be compiled in a report that will be available in mid-2022. In addition to the mainstem Des Plaines River sites, forty (40) sites were sampled across the Hickory Creek watershed. The Bioassessment Report for Hickory Creek is also expected in mid-2022. The remaining fourteen (14) tributaries were sampled in 2021 with a Bioassessment Report due in early 2023. Details of the bioassessment program are below.

Bioassessment

A biological and water quality survey, is an interdisciplinary monitoring effort coordinated on a waterbody specific or watershed scale. This may involve a relatively simple setting focusing on one or two small streams, one or two principal stressors, and a handful of sampling sites or a much more complex effort including entire drainage basins, multiple and overlapping stressors, and tens of sites. The LDWG bioassessment is the latter.

The LDWG bioassessment program continued in 2020 resampling a subset of the 2019 mainstem Des Plaines River stations. Based on remaining budget, fifteen (15) stations we chosen for the resampling effort. All of the data collected on the mainstem Des Plaines River in 2018, 2019 and 2020 will be analyzed together and compiled into a single report due in late 2021.

Also sampled in 2020 was the forty (40) stations in the Hickory Creek watershed. The number of stations was reduced from the originally planned fifty (50) sites after field reconnaissance determined some sites to be dry, impoundments, or inaccessible. See table below for complete sampling schedule. The Bioassessment includes fish, macroinvertebrate, QHEI – habitat and water chemistry at all sites and sediment sampling at a subset of sites.

Table 1 – Bioassessment Sampling Schedule

Watershed	Year Sampled	# of Stations
Lower mainstem Lower Des Plaines River	2018	29
Upper mainstem Lower Des Plaines River + northern tributaries	2019	33 – aborted due to high water
Upper mainstem Lower Des Plaines River resample subset	2020	15
Hickory Creek subwatershed	2020	40
Remaining Tributaries	2021	56

The LDWG bioassessment program utilizes standardized biological, chemical, and physical

monitoring and assessment techniques employed to meet three major objectives:

1) determine the extent to which biological assemblages are impaired (using IEPA guidelines);
2) determine the categorical stressors and sources that are associated with those impairments; and,
3) add to the broader databases for the Des Plaines River watershed to track and understand changes through time in response to abatement actions or other influences.

The data collected as part of the bioassessment is processed, evaluated, and synthesized as a biological and water quality assessment of aquatic life use status. The assessments are directly comparable to previously conducted bioassessments such that trends in status can be examined and causes and sources of impairment can be confirmed, amended, or removed. A final report containing a summary of major findings and recommendations for future monitoring, follow-up investigations, and any immediate actions that are needed to resolve readily diagnosed impairments is prepared following each bioassessment. The bioassessment reports will be posted on the LDWG website. It is not the role of the bioassessments to identify specific remedial actions on a site specific or watershed basis.

Sampling sites for the bioassessment were determined systematically using a geometric design supplemented by the bracketing of features likely to exude an influence over stream resource quality, such as CSOs, dams and wastewater outfalls. The geometric site selection process starts at the downstream terminus or "pour point" of the watershed (Level 1 site), then continues by deriving each subsequent "panel" at descending intervals of one-half the drainage area (D.A.) of the preceding level. Thus, the drainage area of each successive level decreases geometrically. This results in in seven drainage area levels in each of the three watersheds, starting at the largest (150 sq. mi) and continuing through successive panels of 75, 38, 19, 9, 5 and 2 sq. mi. Targeted sites are then added to fill gaps left by the geometric design and assure complete spatial coverage in order to capture all significant pollution gradients including reaches that are impacted by wastewater treatment plants (WWTPs), major stormwater sources, combined sewer overflows (CSOs) and dams. The number of sampling sites by method/protocol and watershed are listed in Table 1 and illustrated in Figure 1. Field reconnaissance will be needed to confirm suitability of sites prior to sampling season.

<u>Representativeness – Reference Sites</u>

Data is collected from selected regional reference sites in northeastern Illinois preferably to include existing Illinois EPA and Illinois DNR reference sites, potentially being supplemented with other sites that meet the Illinois EPA criteria for reference conditions. One purpose of this data will be to index the biological methods used in this study that are different from Illinois EPA and/or DNR to the reference condition and biological index calibration as defined by Illinois EPA. In addition, the current Illinois EPA reference network does not yet include smaller headwater streams, hence reference data is needed to accomplish an assessment of that data. Presently thirteen (13) reference sites have been established.

The bioassessment sampling includes four (4) sampling methods/protocols: biological sampling, Qualitative Habitat Evaluation Index (QHEI), water column chemical/physical parameter sampling and sediment chemistry. The biological sampling includes two assemblages: fish and macroinvertebrates.

Fish

Methodology

Methods for the collection of fish at wadeable sites was performed using a tow-barge or longline pulsed D.C. electrofishing apparatus (MBI 2006b). A Wisconsin DNR battery powered backpack

electrofishing unit was used as an alternative to the long line in the smallest streams (Ohio EPA 1989). A three-person crew carried out the sampling protocol for each type of wading equipment sampling in an upstream direction. Sampling effort was indexed to lineal distance and ranged from 150-200 meters in length. Non-wadeable sites were sampled with a raft-mounted pulsed D.C. electrofishing device in a downstream direction (MBI 2007). Sampling effort was indexed to lineal distance over 0.5 km. Sampling was conducted during a June 15-October 15 seasonal index period.

Samples from each site were processed by enumerating and recording weights by species and by life stage (y-o-y, juvenile, and adult). All captured fish were immediately placed in a live well, bucket, or live net for processing. Water was replaced and/or aerated regularly to maintain adequate D.O. levels in the water and to minimize mortality. Fish not retained for voucher or other purposes were released back into the water after they had been identified to species, examined for external anomalies, and weighed either individually or in batches. While the majority of captured fish were identified to species in the field, any uncertainty about the field identification required their preservation for later laboratory identification. Identification was made to the species level at a minimum and to the sub-specific level if necessary. Vouchers were deposited and verified at The Ohio State University Museum of Biodiversity (OSUMB) in Columbus, OH.

Macroinvertebrates

Methodology

The macroinvertebrate assemblage is sampled using the Illinois EPA (IEPA) multi-habitat method (IEPA 2005). Laboratory procedures followed the IEPA (2005) methodology for processing multi-habitat samples by producing a 300-organism subsample with a scan and pre-pick of large and/or rare taxa from a gridded tray. Taxonomic resolution is performed to the lowest practicable resolution for the common macroinvertebrate assemblage groups such as mayflies, stoneflies, caddisflies, midges, and crustaceans, which goes beyond the genus level requirement of IEPA (2005). However, calculation of the macroinvertebrate IBI followed IEPA methods in using genera as the lowest level of taxonomy for mIBI calculation and scoring.

Habitat

Methodology

Physical habitat was evaluated using the Qualitative Habitat Evaluation Index (QHEI) developed by the Ohio EPA for streams and rivers in Ohio (Rankin 1989, 1995; Ohio EPA 2006b) and as modified by MBI for specific attributes. Attributes of habitat are scored based on the overall importance of each to the maintenance of viable, diverse, and functional aquatic faunas. The type(s) and quality of substrates, amount and quality of instream cover, channel morphology, extent and quality of riparian vegetation, pool, run, and riffle development and quality, and gradient used to determine the QHEI score which generally ranges from 20 to less than 100. QHEI scores and physical habitat attribute were recorded in conjunction with fish collections.

Chemistry

Methodology

Water column and sediment samples are collected as part of the LDWG bioassessment programs. The number of samples collected at each site is largely a function of the site's drainage area with the frequency of sampling increasing as drainage size increases. Grab sample is taken at center of flow. Temperature, dissolved oxygen, pH and conductivity are sampled in the field. Sediment sampling is done at a subset of 158 sites using the same procedures as IEPA.

The parameters sampled for are included in Table 2 and can be grouped into demand parameters, nutrients, demand, metals and organics. All sampling occurs between May and October of the sample year.

Figure 5. Lower Des Plaines River Bioassessment Stations. Year represents order of sampling within bioassessment 5-year cycle – 5th year no sampling.

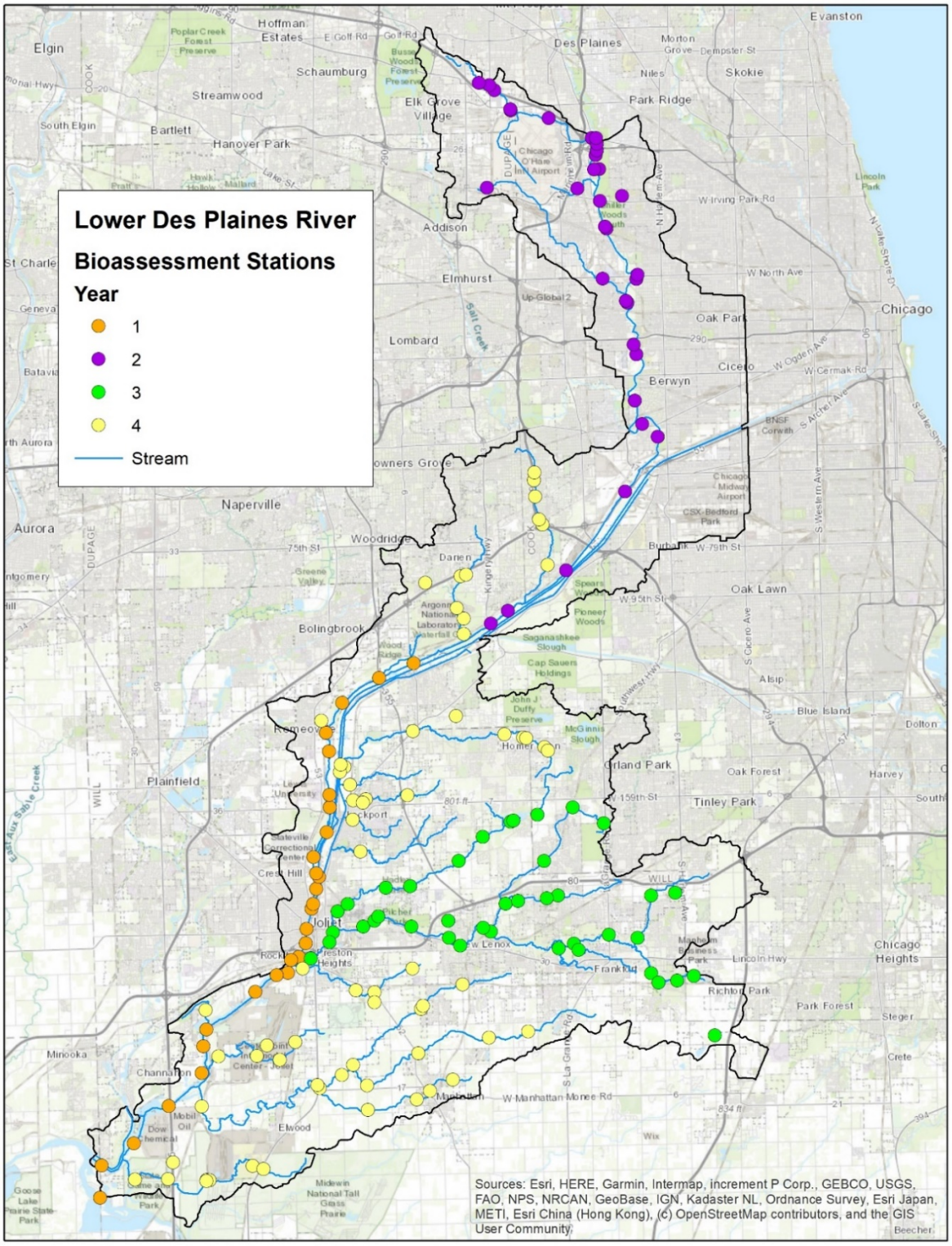


Table 2 Water Quality and sediment Parameters sampled as part of the LDWG Bioassessment Program.

Water Quality Parameters	Sediment Parameters
Demand Parameters 5 Day BOD Chloride Conductivity Dissolved Oxygen Chlorophyll a pH Temperature Total Dissolved Solids Total Suspended Solids **Nutrients** Ammonia Nitrogen/Nitrate Nitrogen – Total Kjeldahl Phosphorus, Total Chlorophyll-a (new in 2020) **Metals** Cadmium Lead Calcium Magnesium Copper Zinc Iron	**Sediment Metals** Arsenic Barium Cadmium Chromium Copper Iron Lead Manganese Nickel Potassium Selenium Silver Zinc **Sediment Organics** Organochlorine Pesticides PCBS Percent Moisture Semi-volatile Organics Volatile Organic Compounds

Fecal Coliform

In 2021 fecal coliform was collected at six (6) sites, on the Des Plaines River. Grab samples were collected at center of flow five (5) times within a thirty (30) day period. Results from the fecal coliform sampling can be found below in Table 3.

Table 3. 2021 Fecal Coliform data. Results in Colony Forming Units (CFU)/100ml

IEPA Segment	Station ID	Location	10/4/2021	10/7/2021	10/11/2021	10/18/2021	10/20/2021
	Des Plaines River		Results in cfu/100ml				
G-11	LDG18	At old Division Street Bridge	<50	200	<50	<50	<50
G-02	LDG25	DS Lemont Road	<50	100	100	100	100
G-39	LDG31	US Millbridge Road	<50	<50	500	<50	300
G-32	LDG34	US bridge in Forest Home Cemetery	<50	<50	200	<50	200
G-30	LDG36	US Chicago Avene	<50	2800	900	<50	200
G-15	LDG41	DS Irving Park Road	<50	700	900	<50	300

2021 Watershed Outreach Summary

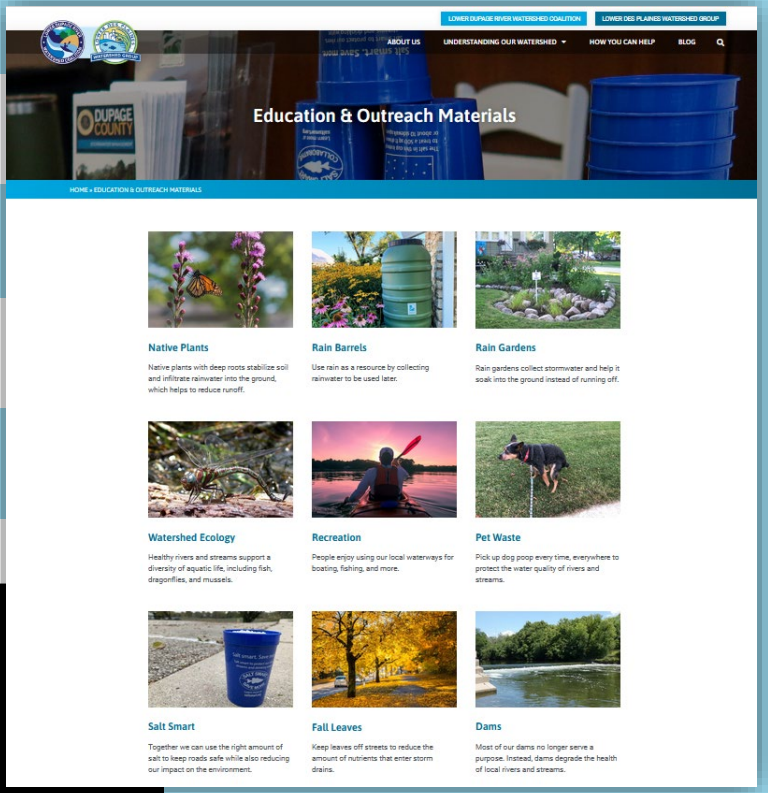
2021 Outreach Materials

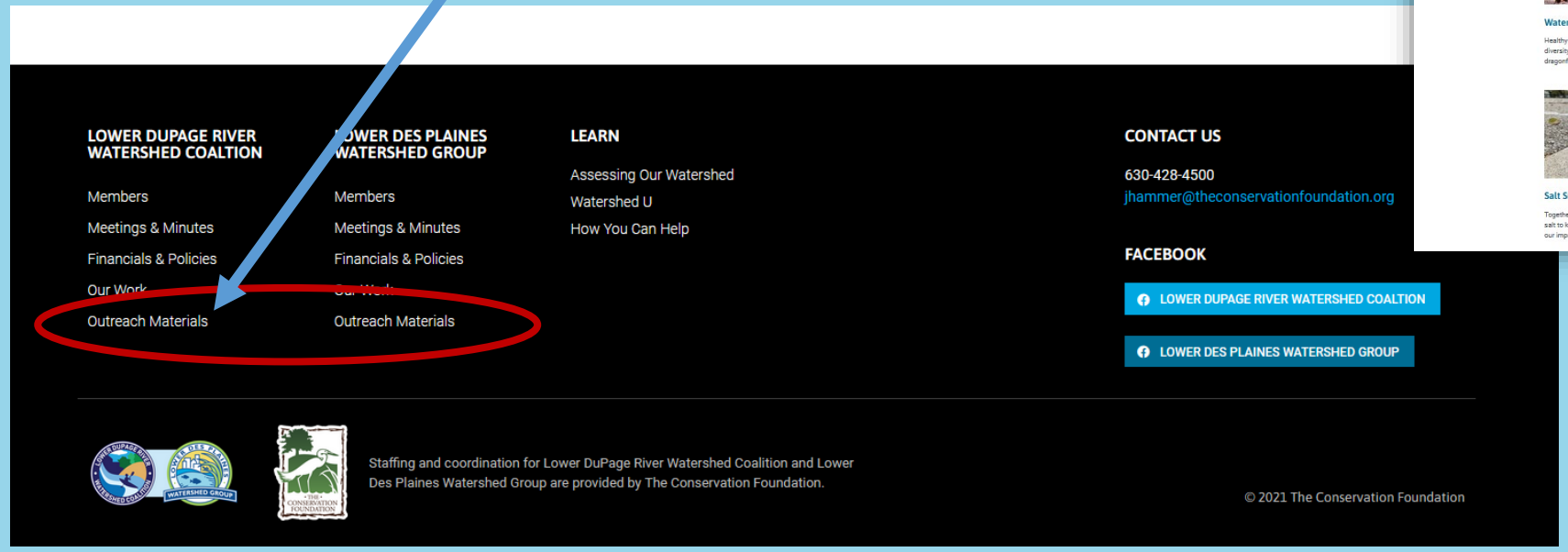
Outreach Materials

Where can I find outreach materials?

LDPwatersheds.org/**outreach**

Bottom of any page on the website





All chloride-related materials are also available on www.saltsmart.org

Spring 2021 Outreach

Social Media Posts

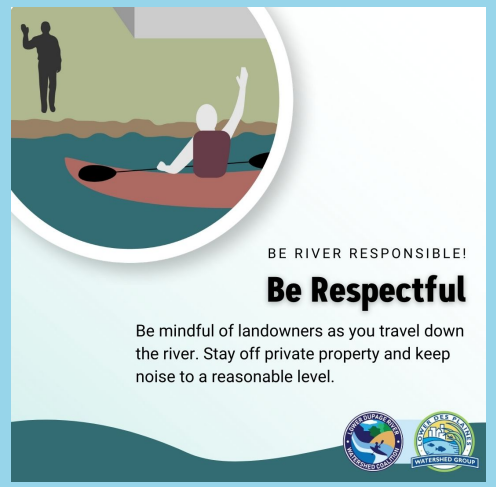
Garden Refresh - 2021 Outreach

- **Creating a native plant garden from start to finish**
  - Choosing native plants
  - Design
  - Expanding and preparing garden beds
  - Planting
  - Maintenance

- **Resources to guide homeowners through the process**
  - Blogs
  - Social media posts
  - Webinars – first webinar is March 31st at 1 pm
  - Videos

- **Available blogs**
  - Introducing Garden Refresh
  - It Starts With a Plan (planning a native plant garden)
  - Collect Rainwater at Home (rain barrels)

Summer 2021 Outreach



Join the Pet Waste Campaign

Remind residents to scoop the poop to protect water quality!

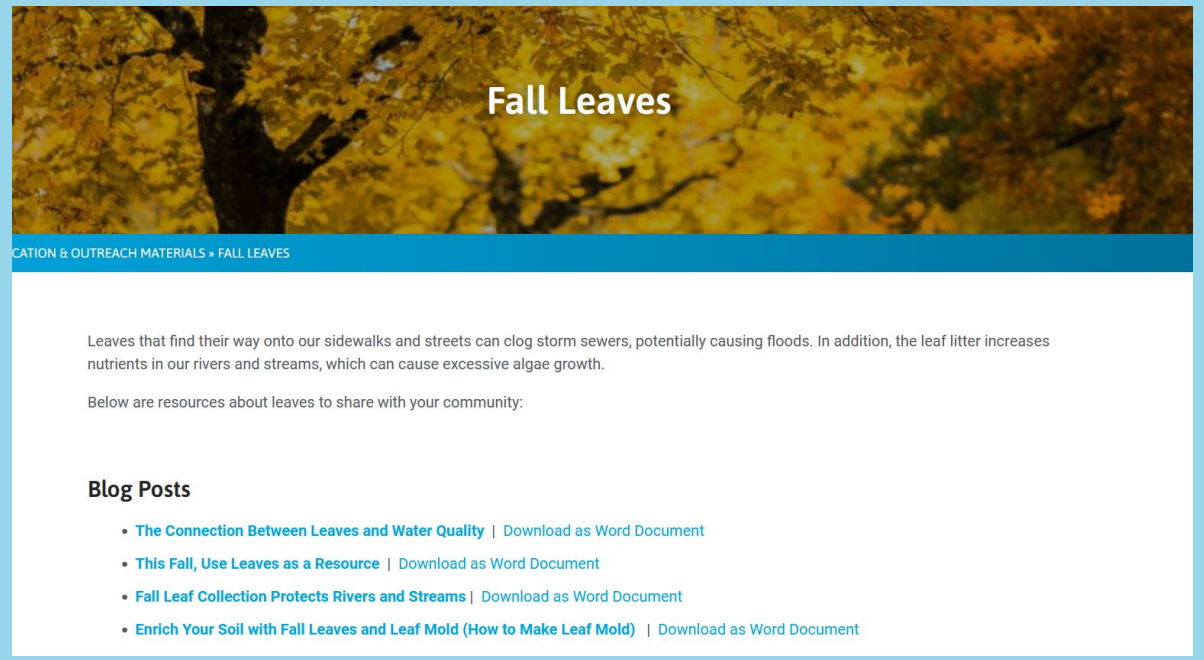
- **We Provide:**
  - Sign + Dog Waste Bag Dispenser and bags
  - Or Just Sign(s)
- **You Provide:**
  - Post & Installation – send us a picture
  - Participate in Social Media Campaign

ILLINOIS AMERICAN WATER
WE KEEP LIFE FLOWING™

Funded By:
Illinois American Water Environmental Grant

LOWER DUPAGE RIVER WATERSHED COALITION
LOWER DES PLAINES WATERSHED GROUP

Fall 2021 Outreach



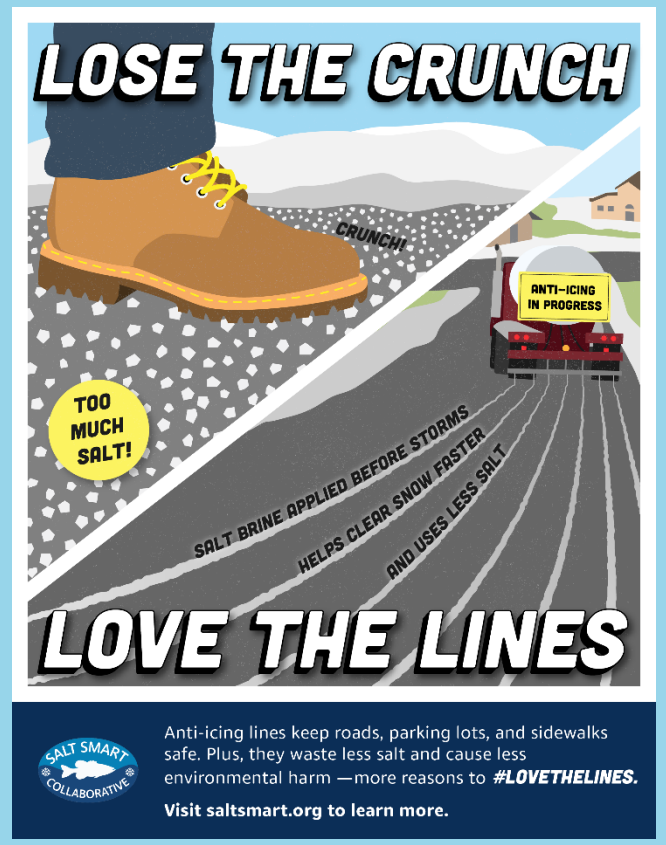
Winter 2021 Outreach

Social Media Posts

Winter 2021 Outreach

Posters

Doorway poster



Anti-icing poster
#LoveTheLines

Winter tools comic

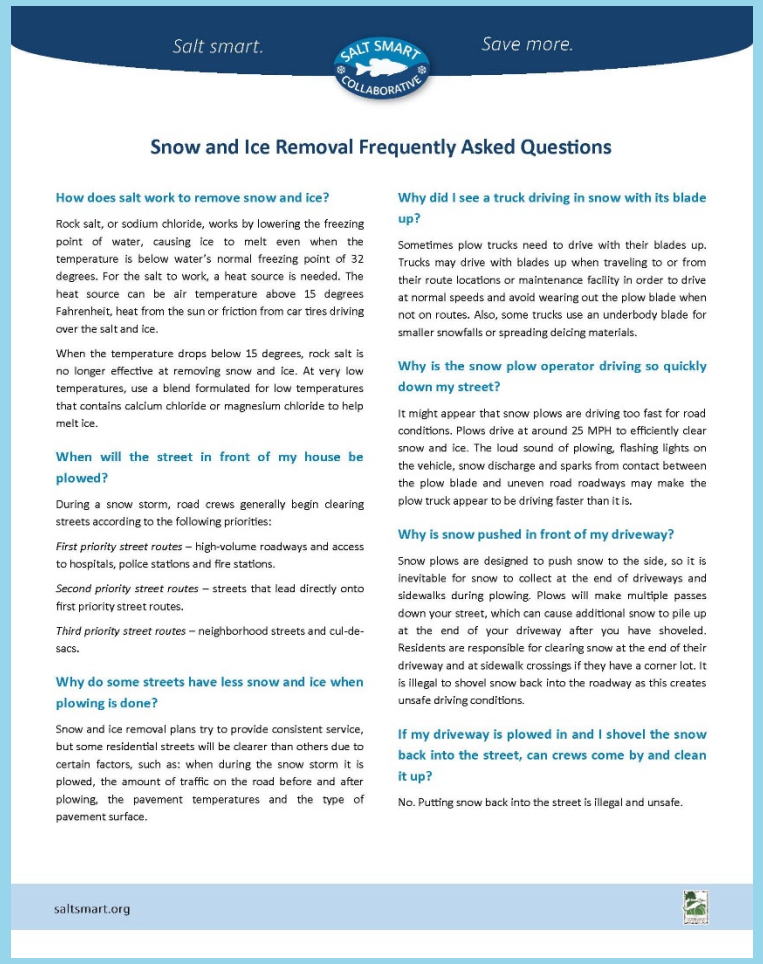
Winter – Salt Smart

Snow Plow Operator Profiles: "Meet Your Plow Driver"

Winter – Salt Smart

Safe Driving Poster/Graphic

Snow + Ice Removal FAQ



Salt smart. SALT SMART COLLABORATIVE *Save more.*

Snow and Ice Removal Frequently Asked Questions

How does salt work to remove snow and ice?

Rock salt, or sodium chloride, works by lowering the freezing point of water, causing ice to melt even when the temperature is below water's normal freezing point of 32 degrees. For the salt to work, a heat source is needed. The heat source can be air temperature above 15 degrees Fahrenheit, heat from the sun or friction from car tires driving over the salt and ice.

When the temperature drops below 15 degrees, rock salt is no longer effective at removing snow and ice. At very low temperatures, use a blend formulated for low temperatures that contains calcium chloride or magnesium chloride to help melt ice.

When will the street in front of my house be plowed?

During a snow storm, road crews generally begin clearing streets according to the following priorities:

First priority street routes – high-volume roadways and access to hospitals, police stations and fire stations.

Second priority street routes – streets that lead directly onto first priority street routes.

Third priority street routes – neighborhood streets and cul-de-sacs.

Why do some streets have less snow and ice when plowing is done?

Snow and ice removal plans try to provide consistent service, but some residential streets will be clearer than others due to certain factors, such as: when during the snow storm it is plowed, the amount of traffic on the road before and after plowing, the pavement temperatures and the type of pavement surface.

Why did I see a truck driving in snow with its blade up?

Sometimes plow trucks need to drive with their blades up. Trucks may drive with blades up when traveling to or from their route locations or maintenance facility in order to drive at normal speeds and avoid wearing out the plow blade when not on routes. Also, some trucks use an underbody blade for smaller snowfalls or spreading deicing materials.

Why is the snow plow operator driving so quickly down my street?

It might appear that snow plows are driving too fast for road conditions. Plows drive at around 25 MPH to efficiently clear snow and ice. The loud sound of plowing, flashing lights on the vehicle, snow discharge and sparks from contact between the plow blade and uneven road roadways may make the plow truck appear to be driving faster than it is.

Why is snow pushed in front of my driveway?

Snow plows are designed to push snow to the side, so it is inevitable for snow to collect at the end of driveways and sidewalks during plowing. Plows will make multiple passes down your street, which can cause additional snow to pile up at the end of your driveway after you have shoveled. Residents are responsible for clearing snow at the end of their driveway and at sidewalk crossings if they have a corner lot. It is illegal to shovel snow back into the roadway as this creates unsafe driving conditions.

If my driveway is plowed in and I shovel the snow back into the street, can crews come by and clean it up?

No. Putting snow back into the street is illegal and unsafe.

saltsmart.org

Bookmark

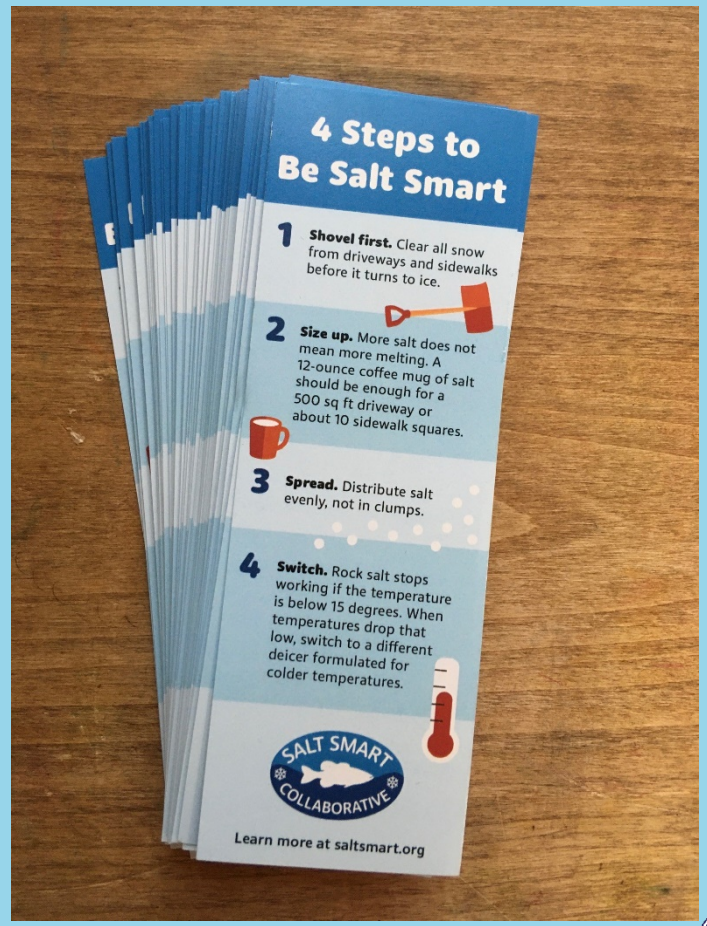
LOWER DUPAGE RIVER WATERSHED COALITION

LOWER DES PLAINES WATERSHED GROUP

Winter – Salt Smart

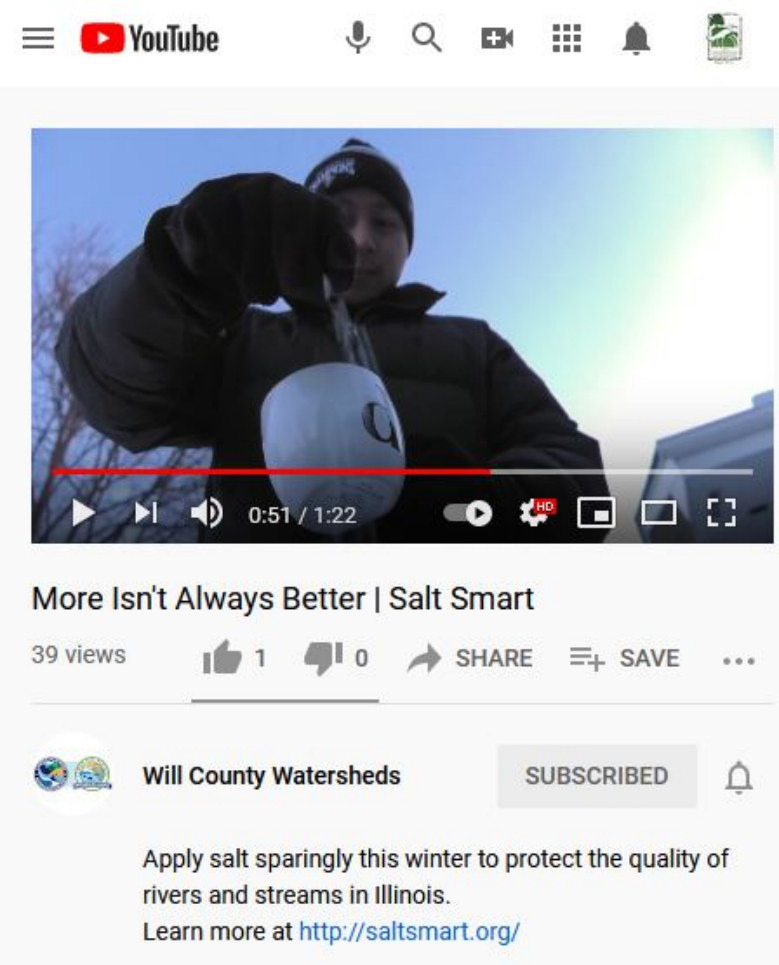
Cups and bookmarks are available now – contact Jennifer or Lea to put in your order

Scatter cups

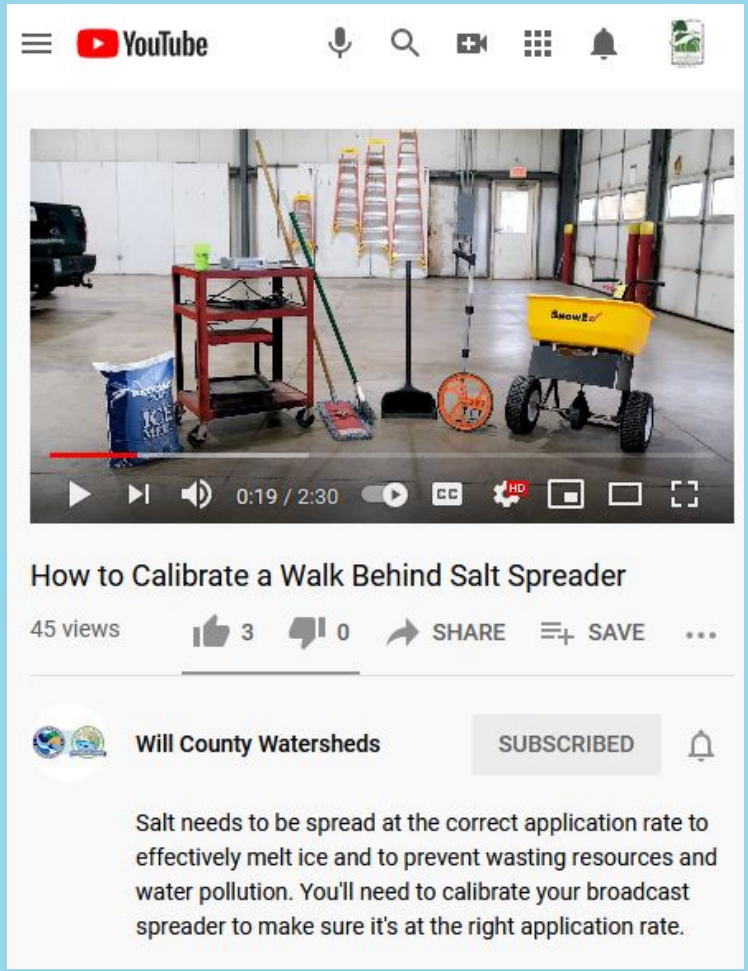


Bookmarks

Winter – Salt Smart



Fun PSA for Residents

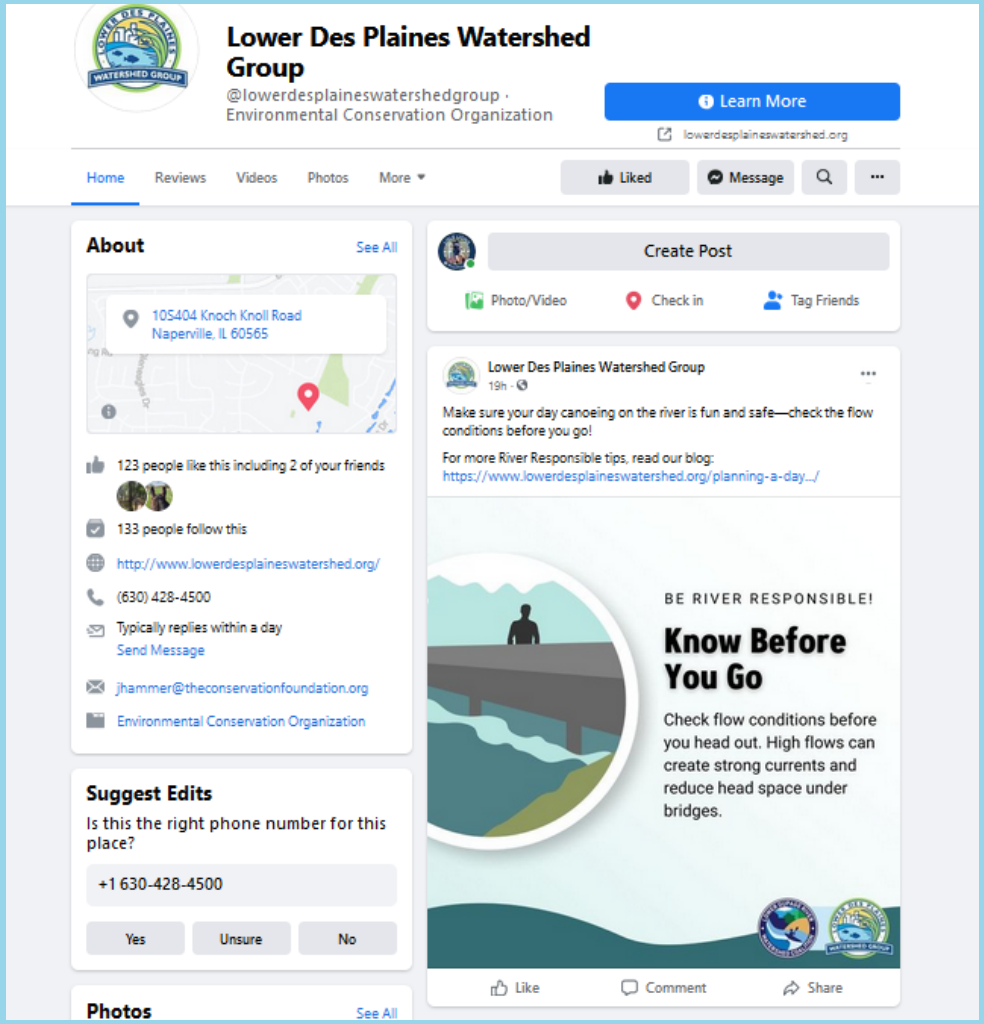


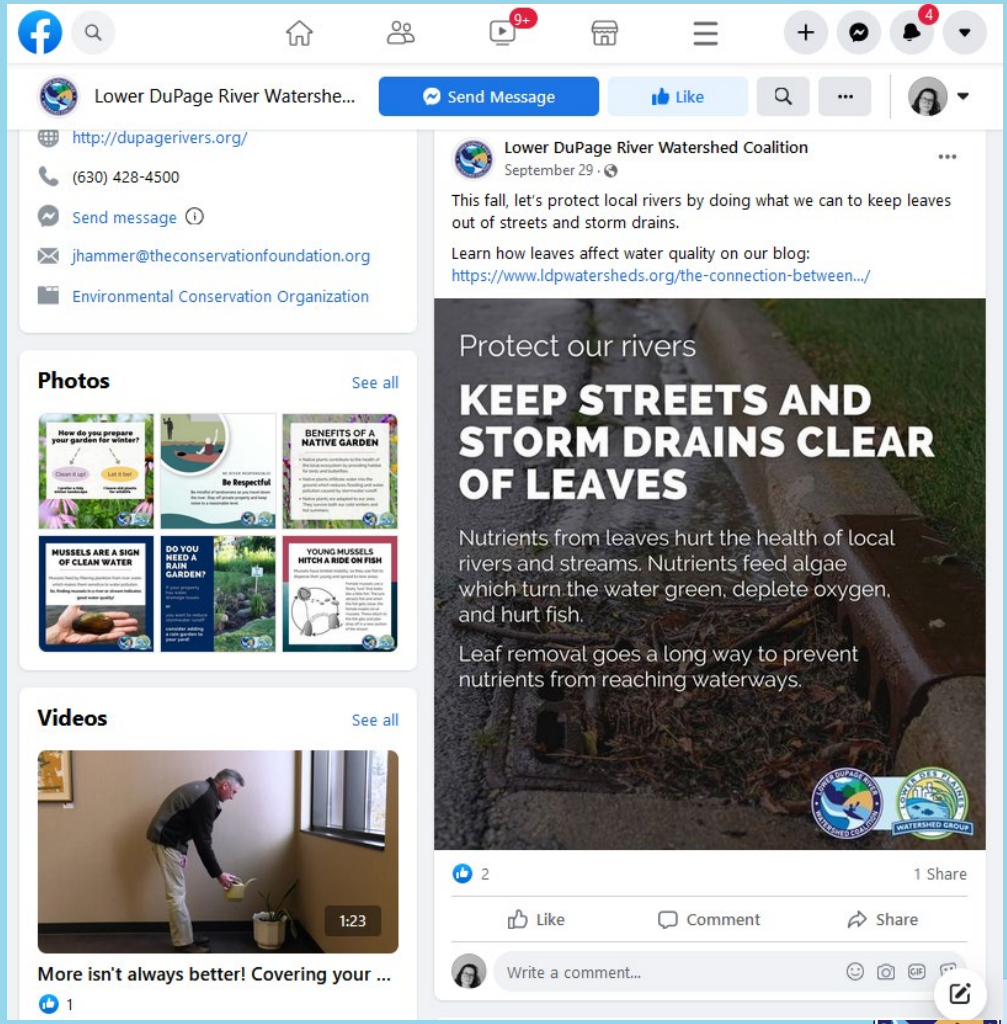
Salt Spreader Calibration Tutorial

Winter Deicing Technical Briefs

Recordings available at
Saltsmart.org/workshops
and
"Will County Watersheds"
YouTube Page

Connect With Us!





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November 2021 Member Meeting | Lower Des Plaine...

3 views • 2 months ago

More About Brine Making | Winter Technical Brief

40 views • 2 months ago

November 2021 Member Meeting | Lower DuPage...

5 views • 2 months ago

September Member Meeting | Lower Des Plaines...

12 views • 3 months ago

September Member Meeting | Lower DuPage River...

6 views • 3 months ago

Where Leaves Go After They're Collected

25 views • 5 months ago

July 2021 Member Meeting | Lower Des Plaines...

2 views • 5 months ago

July 2021 Member Meeting | Lower DuPage River...

4 views • 5 months ago

May 2021 Member Meeting | Lower DuPage River...

1 view • 6 months ago

March 2021 Member Meeting | Lower DuPage River...

2 views • 9 months ago

January 2021 Membership Meeting | Lower DuPage...

How to Calibrate a Walk Behind Salt Spreader

November 2020 Membership Meeting | Lower Des Plaine...

September 2020 Membership Meeting | Low...

September 2020 Membership Meeting | Low...

The Fine Art of Brine Making | Winter Technical Brief